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# Management in Perspective

- Burt K. Scanlan

## The Functions of Management

Management may be defined as the coordination and integration of all resources (both human and technical) to accomplish various specific results. According to this definition, management is viewed in terms of the functions that a manager performs. The four basic functions that have historically formed the core for studying management are planning, organizing, directing, and controlling. In this section we very briefly examine each of the functions and develop an overall picture of what they involve (see figure 1.1)

### FIGURE 1.1

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## The Functions of Management in Perspective

### Planning

1. Establishment the mission or overall long-range direction of the organization.
2. Establishing specific shorter-range objectives.
3. Determining policies and procedures.
4. Developing operational plans.

### Organizing

1. Developing a formal structure.
2. Grouping activities into departments.
3. Specifying relationships between departments and operating units: lines of authority, responsibility, accountability, communications, decision-making.

### Directing

1. Developing a total organizational philosophy about people.
2. Integrating the needs of individuals with those of the organization: creating a motivational climate.
3. Creating a result-producing leadership climate: effective communication, job design, small groups, coaching and developing.

### Controlling

1. Developing standards and objectives.
  2. Deciding on measures or criteria of successful performances.
  3. Designing a system of status reporting.
  4. Taking corrective action when and where needed.
-

## **An Overview of Planning**

The planning function can be divided into two essential phases. The first phase is determining the overall long-range direction or mission of the organization. This requires considerable analysis and thought. Is the industry in which the organization is centered growing and expanding, declining, or one, which is relatively static? If either of the latter two situations pertains, decisions must be made regarding what strategy should be undertaken to insure the organization's continued health and perhaps even survival. If it is a growing and expanding industry, plans must be made for the organization to keep pace. Determining the mission also involves decisions about the long-range size of the organization, where growth potential exists, the degree and extent to which the organization wants to expand in those areas and the consideration actions. Only after decisions are made about these and similar long-range goals can the shorter range specific objectives be developed.

The second phase of planning is the formation of these specific shorter-range objectives to insure that the longer range missions are realized. Part of this objective setting process involves both the determination of overall policies and procedures and devising the operational or 'how to' aspects of accomplishing the objectives. These plans should be designed both to take maximum advantage of the strengths and to overcome or compensate for any weakness or shortcomings.

## **An Overview of Organizing**

Organizing involves developing a formal structure that will facilitate the coordination and integration of resources. Viewed another way, the organization structure should contribute to the efficient accomplishment of both the long range mission and the shorter-range objectives and plans. The process of organizing proceeds with the concept of division of work. Accordingly, a series of operating units or departments is formed, with each being responsible for a particular phase of the operation. Once this division of work for departments is complete, managers must then concern themselves with specifying the relationships among the various operating units. These relationships may take many forms, including authority relationships among people and departments lines of responsibility and accountability, channels of communication, lines of decision making, and the complete spectrum of Inter-relationships that exists among the various parts. The manager's delegation of authority and responsibility is one of several other key issues involved in organization.

## **An Overview of Directing**

The function of directing is primarily concerned with the questions of motivation and leaderships. Management should first develop an appreciation about the fundamentals of human motivation, and then promote an overall organizational philosophy about people conducive to creating a motivational climate. The issue at hand is essentially one of creating a climate where the needs of the individual are integrated with the needs of the organization; that is, a climate in which individuals can best satisfy their own goals by working towards the goals of the organization. Of particular significance in leadership is the quality of face-to-face and day-to-day interaction that a manager has with people. Although many factors are involved in creating a

result-producing climate, effective communication, job design, and management of groups are key concerns. Also the extent and degree to which a manager works with people in a coaching capacity, to help them accomplish their specific job objectives and perform at their maximum level of capability, determines how successful she will be in efforts at direction and leading.

## **An Overview of Controlling**

The purposes of the controlling is to make certain that events conform to plans. Control is concerned with the present, with what is happening now. As a result of planning, specific objectives have been set in all important phases of the operation. The control function, if effectively carries out, will provide the manager with continual feedback on exactly where the operation stands at any time with respect to achieving these objectives. This information feedback should not only deal with the general picture, but will ideally pinpoint some of the specifics. If objectives are not being achieved or if their accomplishment is behind schedule, the manager must identify the areas that are causing problems and develop alternatives to overcome them. Thus, control is a four-phase process involving the presence of standards and objectives. The determination of how performance in each area is to be measured (criteria of successful performance), developing a status reporting system, and finally taking corrective action when and where needed. Figure 1.1 summarizes the four basic functions of management.

## **How Managers at Different Levels Perform the Functions of Management**

Further insight and understanding of the functions of management can be provided by comparing how managers at different levels in the organization perform these five basic managerial functions. The farther apart the various management levels, the more dramatic the difference. For this reason we compare the executive, or very top level manager with the first line supervisor, who is at the managerial ladder-Figure 1.2 summarizes these differences.

**Figure 1.2**

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### **How Managers at Different Levels Perform the Managerial Functions**

#### Executive Level

#### Supervisory Level

#### Planning

- A. Long range
- B. Broad overall goals
- C. Originating

- A. Short range
- B. Specific and precise
- C. Derivative

#### Organizing

- A. Overall formal structure  
Materials
- B. Lines of authority, responsibility,

- A. Coordination of people, machines, and  
on short range basis



and accountability.

- C. Lines of communication and Decision making.
- D. Degree of decentralization.
- E. Relationships between departments

### Directing

- |   |  |
|---|--|
| A. Establish total organizational philosophy And approach toward managing people. | A. Deal with operational Employees.                                      |
| B. Long range developments of people.   | B. Emphasis on getting the Work out.                                     |
| C. Organize wide programs to motivate the human element.                          | C. Overall leadership style and Specific leadership technique important. |

### Controlling

- |   |   |
|---|---|
| A. Long range overview                          | A. Specific day-to day factors Affecting results. |
| B. Setting overall requirements Accomplishment. | B. Removing immediate obstacles                   |
| C. Scope Broader                                | C. More immediate in Scope.                       |
- 

## **Planning**

As indicated in Figure 1.2, planning at the executive level is long range. Such questions as the extent and degree of diversification, expansion by either growth or acquisitions, and capital procurement and mergers are significant. These issues and the decisions that are made concerning them will have an important impact over an extended period of time. Planning at this level of management is usually concerned with broad overall goals. It concentrates on such things as return on investment, sales-earnings ratios, share of the market, and product mix. Finally, executive planning is originating in nature. By this we mean that the decisions made and the plans formulated at this level serve as a basis for planning at each successive level in the organization.

## **Organizing**

Decisions involving organization at the top level are directed toward determining what the overall formal organization structure should be. The executive level must consider the following questions. What will the basis for departmentalizing work be? Should activities be grouped on a functional basis such as production, marketing and personnel management, or

should the basis for organizing be in terms of products, territory, or types of customers? Also, how much decentralization should exist? The decentralization issue includes the question of facilities or physical decentralization as well as decentralization of decision making. Finally, a part of developing an overall organization structures involves establishment of lines of authority, responsibility, accountability, communications, and decision making. Of critical importance will be the relationships between line and staff departments, particularly in terms of the provisions for integration and coordination of effort between them.

Organization at the supervisory level deals almost exclusively with the day-to-day coordination of people, machines, and materials to accomplish specific results. In an organizational sense, the supervisor is more concerned with the relationships among things than he is with relationships among people. His place in the total structure has been determined from above and he must operate within that framework.

## **Directing**

As in the functions of planning and organizing, the executive-level manager's concern with the directing function is broader in scope than that of the first-line supervisors. It is the responsibility of the top-level administrators to develop and promote an overall positive philosophy and approach to the directing function. Beyond this, the executive level must see to it that managers, at all levels receive training necessary to make them effective leaders and developers of men and women. Is not enough simply to verbalize what should be. The example must be set from above. To a degree, how a manager directs her people in general and her specific approach to leadership is a mirror of her superior. Managers tend to manage as they themselves are managed. Beyond the issue of laying the groundwork for effective approaches for day-to-day supervision, the executive level will also become involved in developing organizational wide motivation programs. Also of concern to the higher-level executive is the longer-range development of people in the enterprise to insure a continued supply of qualified personnel.

Instead of managing other manager, the first line supervisor is responsible for the efforts of operative employees. Although his ultimate goal is to get the work out, he must be particularly concerned about his overall style of leadership and the specific leadership techniques that he uses to create a motivational climate. To the operative employee the first-line supervisor represents the total organization and his perception of that organization is a reflection of his perception of his supervisor. The abilities to relate to people individually and to be sensitive to them as individuals are key elements of effective first-line supervision.

## **Controlling**

Because of the very close tie among the functions of planning and controlling, the distinction between the executive and supervisory levels in terms of performance of these functions is very similar to those cited earlier. The executive level is more likely to focus on the longer-range issues that are somewhat broader in scope. The executives will be more concerned with setting forth standards or goals to be achieved and reviewing information to assess where the organization as a whole stands. Unless high-level issues are involved, they will leave the

details of corrective action to lower-level administrators. Their emphasis will focus on the major functional areas of the organization such as production, marketing, and finance. The supervisor will center control efforts on specific factors that influence day-to-day results and removal of immediate obstacles. Although not always true, the supervisor is more likely to become involved with immediate crisis.

### **Management as a Distinctive Activity**

In times past, when a manager was needed, the common practice was to look around the organization or department and spot the best operative employee. She was then appointed as a supervisor. The assumption was that since she was good at whatever operative job she held, she would automatically make a good manager. Accordingly, the best office worker, accountant, medical technician, or salesperson was the prime candidate for the management position. There were undoubtedly many employees desiring to move into management who believed that superior performance and competence on their present jobs was the key to the door.

But being a manager requires a very specialized set of knowledge, skills, abilities, and attitudes. If she is to be successful, these attributes must be acquired. It is certainly true that some people have more innate or inborn talent to be effective managers than others, but it is also true that these skills and abilities can be learned and developed. This point is evidenced by the fact that organizations are spending millions of dollars each year on various types of management development programs. One recent study estimated that there are between 30,000 and 40,000 public management seminars conducted annually and that over 750,000 people attended these seminars at a total cost of 1 billion dollars.

There are few organizations of any size that do not either have a separate management development department, or one person who devotes a major share of time to these activities. In addition, many national organizations, such as the American Aviation Administration, American Society of Personnel Administrators, and the American Society of Training and Development programs.

In spite of all that has been and is being done in this area, there are still many organizations who need to get a start on management development activities or expand the scope of efforts that have already begun. Many examples of this may be found in the health sciences, education, government, and others. The incident that opened the chapter highlights the important need to develop future managers as does the following: Corporate personnel chiefs are pressing hard to get their companies' management succession programs beefed up. In a survey of 330 personnel officers last summer, Haskell and Stern found that the vast majority named management succession planning as the most important issue facing them in 1980s.

### **Management and Human Resources**

Imagine that you have been an operative employee for a period of three or four years.

One day your superior calls you into the office and explains that because of expansion and other changes that will be in effect shortly, a new supervisory position has been created.

Your superior further explains that over the past few years your general work and other aspects of your overall job performance have been very good, and you have been selected to fill the new position if you wish to accept it.

Assuming that you are a typical employee, the opportunity to move into a management position is something that you have aspired to as a distinct step in your career development. Let us assume that you accept the new job and the challenge that accompanies it. As you begin to function as a manager, several things will happen. First, you will notice that things look much different from the way they used to: your promotion may have seemed at the time to be a small step but it was a giant leap. You will discover that there is a big difference between being one of several operative employees in a department and being the supervisor of that department. Your perspective broadens; your outlook and perhaps your attitude also change.

Second, the distinction between doing versus managing will come into sharper focus. As an operative employee you were expected to perform a series of activities or tasks and meet certain basic performance standards. As a manager you no longer ply your trade in a direct sense. If you were a supervisor of production workers in a unionized plant, or any other supervisor doing any physical work. Your job is now that of a manager who is responsible both for the operation of the entire department and for the direction of other people in their work.

Finally, if you did not realize it when you started our new job, you will be successful if your employees, individually and as a group, are successful in their jobs. Your performance will be a reflection of their performance, and you will be judged largely by what they accomplish.

The above example serves to illustrate three important points. First, it stresses the human element in management. Managers do not get things done by themselves. If they try to do everything alone, their accomplishment will be limited to their individual talents and energies.

Second, a manager's job is to make things happen. If quality is bad, the manager takes steps to improve it. If sales are down, he develops new customers and markets. If costs are high, he takes the initiative to find out how to cut them. Thus, management is active rather than passive; it is causal, not effect oriented. Managers do more than react to what is happening- they take positive action.

Third, management is a dynamic process. Managers transform potential into reality. They must be innovators and agents for change, progress, and growth, as opposed to merely responding or adapting passively to what is happening around them. The manager's job is to insure that results are achieved.

### **Contingency Nature of Management**

Many organizations, individual managers, and writers have historically searched for the one best way to manage. Accordingly, they sought definitive answers as to how an organization or individual should carry out the planning, organizing, leading, and controlling functions.

More recently we have come to recognize the contingency nature of management. In fact, contingency theory, as it relates to a number of specific factors such as organization structure, leadership and participation, has occupied a prominent role in the literature of recent years.

Briefly, contingency theory states that the proper approach to a management function such as leadership is contingent or dependent on forces in the manager, the people being supervised, and the situation. Each of these major areas would have several associated sub-considerations and together they would suggest an appropriate leadership style (one most likely to yield best results). We will be introducing contingency aspects of management throughout the book when they relate to specific topic areas, after certain preliminary concepts have been established.

### **The Motivation to Manage**

In addition to recognizing the importance of the human element and developing skill in the performance of the various managerial functions, success in management requires that an individual wants to manage, or more specifically, possess the motivation to manage. The following list gives six ingredients that comprise the motivation to manage.

1. Favourable attitude towards those in positions of authority. A manager must be able to gain support at higher levels in the organization and represent his group upward. To do this requires a positive attitude toward those in positions of authority so as to elicit positive responses from superiors.
2. Desire to engage in competition. Managers must be prepared to accept challenges and must strive to win for themselves and their groups. They must be inclined to compete or available rewards or face continually declining achievement levels. The very nature of the job has a strong competitive element built into it.
3. Desire to assert oneself and take charge. As pointed out earlier the manager must transform potential into reality. It is a dynamic job that requires exercising initiative to make things happen as opposed to just reacting to what has already happened. A certain amount of assertive behaviour is critical to success.
4. Desire to exercise power and authority. Leadership involves influencing others towards specific goals and this requires skill in the effective use of authority. A person who is not comfortable exercising authority is not likely to be successful or comfortable in a managerial role.
5. Desire to be visible. As soon as a person accepts a managerial position they put themselves in a position that sets them apart from the larger group. Behaviour must change and this will inevitably invite attention and even sometimes criticism.
6. Sense of responsibility. Management requires getting work out and meeting many routine demands. Among these demands is a great deal of administrative work. At a minimum the manager must be willing to complete this type of work and ideally receive a certain amount of self-satisfaction in actually doing it.

### **The Nature of the Managerial Job**

The Center for Creative Leadership has published the results of research studies designed to determine the nature of the managerial job. The results of some of their work regarding what managers do are summarized as follows and provide insight for any prospective manager.

1. Managers work long hours. The typical manager will work a minimum of fifty hours per week and estimates range upward from that point. The higher one goes the longer the number of hours of work tend to grow.
2. Managers are busy. A manager may face as many as 200 different incidents in a single day. This means that the amount of uninterrupted time that is available in any one day is very restricted.
3. The management job is fragmented and varied. Paperwork, phone calls, scheduled meetings, unscheduled meetings, and inspection tours are common activities in the day of every manager. At the middle management level, unscheduled meetings and informal interactions account for 43 percent of the manager's time.
4. Managers tend to stay in their own departments. The higher up one goes the more time that is spent at one's own desk. This partially explains why managers must be willing to do administrative work and receive a certain amount of self-satisfaction from completing it.
5. Management requires a lot of interpersonal contact and oral communications. Most interaction is with subordinates and with peers as opposed to superiors. In addition, managers tend to supervise others more than they are supervised. At all levels, face-to-face communication occupies a great deal of time and predominates over other forms of communications.
6. There is little time spent in reflective thinking and planning. In spite of the fact that we know planning is one of the key and most important managerial functions. Most managers spend a minimum of time doing it. This can be accounted for by the weight of administrative paper work and other factors discussed above. Increasingly, however, planning is becoming an absolute necessity and the consequences of not doing it are becoming too expensive to bear.
7. Managers find it difficult to account for their time. Rather consistently managers underestimate the amount of time spent in personal contacts and overestimate that spent on production, reading, writing, and on the phone. This inability to account for time is a serious handicap to managers who are concerned about increasing their personal effectiveness. Insight into the sum of the nature and requirements of the managerial job can be summarized as follows:

The manager we have described is hard working spends very long hours at his or her job, and, therefore, must be highly motivated. The demands on the manager require special perceptual and personality characteristics, particularly since so much time spent in interaction with others. Of necessity, the manager must engage in decision-making and must understand the dynamics of being an effective leader. Considering the substantial amount of time the manager spends interacting with others frustration, conflict, and stress are inevitable at times. The manager must influence other people and must understand how others are influenced and affected by persons around them. This in turn requires that the manager understands the various norms of the group he or she works with, and the forces that encourage conformity or deviance

from these norms. Finally, the manager is a product and a prisoner of the organization, and must work effectively within the organizational concept.

### **Universality of Management**

The word management usually evokes the thought of profit-making business and industry. Much of the impetus for developing a unified body of knowledge about management and a professional approach to performing the management function has come from the needs created by our free enterprise system. But it would be a mistake to assume that the only place that management skills are needed is in a profit-making enterprise.

If two or more people are involved in a joint effort, management is required. The activity being undertaken may be as informal as bowling team, or three or four people going on a hunting trip, or a highly formal as a business. Whether it be a hospital, a university, the military, a health clinic, a branch of the federal government, a museum, a church, or a volunteer organization, the management functions, principles, and concepts discussed in this text must be performed effectively if the group's objectives are to be successfully achieved.

# MANAGING GOVERNMENT-GOVERNING

## MANAGEMENT

- Henry Mintzberg

“Capitalism has triumphed.” That was the pat conclusion reached in the West as, one by one, the communist regimes of Eastern Europe began to fall. It has become each an article of faith that we have become blind to its effects. Those effects are highly negative—indeed, dangerous—because the conclusion itself is wrong. In my view, we have confounded the whole relationship between business and government, and we had best clear it up before we end up no better off than the Eastern Europeans once were.

### **The Triumph of Balance**

Capitalism did not triumph at all; balance did. We in the West have been living in balanced societies with strong private sectors, strong public sectors, and great strength in the sectors in between. The countries under communism were totally out of balance. In those countries, the state controlled an enormous proportion of all organized activity. There was little or no countervailing force. Indeed, the first crack in the Eastern bloc appeared in the one place (Poland) where such a force had survived (the Catholic Church).

The belief that capitalism has triumphed is now throwing the societies of the West out of balance, especially the United Kingdom and the United States. That the imbalance will favor private rather than state ownership will not help society. I take issue with Milton Friedman of the University of Chicago, who has been fond of comparing what he calls “free enterprise” with “subversive” socialism. The very notion that an institution, independent of the people who constitute it, can be free is itself a subversive notion in a democratic society. When the enterprises are really free, the people are not.

Indeed, there is a role in our society for different kinds of organizations and for the different contributions they make in such areas as research, education, and health care. The capitalism of privately owned corporations has certainly served us well for the distribution of goods and services that are appropriately controlled by open market forces. The books published by Friedman and his colleagues are goods of that kind. But is their research? Or the health care received by poor people living near those professors’ offices.

### **Beyond Public and Private**

For as long as anyone cares to remember we have been mired in a debate over the allocation of resources between the so-called private and public sectors. Whether it is capitalism versus communism, privatization versus nationalization, or the markets of business versus the controls



of government, the arguments have always pitted private, independent forces against public collective ones. It is time we recognize how limited that dichotomy really is.

There are privately owned organizations, to be sure, whether closely held by individuals or widely held in the form of market-traded shares. And there are publicly owned organizations, although they should really be called state owned, because the state acts on behalf of the public. We as citizens no more control our public private ones. But there are two other types of ownership that deserve equal attention.

First, there are cooperatively owned organizations, whether controlled formally by their suppliers (as in agricultural cooperatives) by their customers (as in mutual insurance companies or cooperative retail chains), or by their employees (as in some commercial enterprises, such as Avis). Indeed, all countries in the West, including the United States, are to a large extent societies of co-operatively owned organizations. According to the National Cooperative Business Association, almost half of the U.S. population is directly served by some cooperative endeavor and one in three people is a member of a cooperative. I did some work recently for a major U.S. mutual insurance company. The enterprise is vigorously competitive, yet it benefits from being cooperatively owned. Its executives are quick to point out just how important the absence of stock market pressure is for their ability to take a long-term perspective.

Second, we have what I call nonowned organizations, controlled by self-selecting and often very diverse boards of directors. These not-for-profit organizations are often referred to as non-government organizations (NGOs), but they are also non-business non-owned organizations.

Among them are many of our universities (including Friedman's University of Chicago), hospitals, charity organization, and volunteer and activist organizations (the Red Cross and Greenpeace, for example).

From a conventional political perspective, the inclination might be to lay out these four forms of ownership along a straight line from left (state ownership) to right (private ownership), with cooperative ownership and nonownership in between. But I believe that would be a mistake because, here as elsewhere, extremes meet: It is the ends that are most alike. For example, from the point of views of structure, both private and state organizations are tightly and directly controlled through hierarchies one emanating from the owners, the other from state authorities. In other words, we should fold that line over. What seems like a straight line is really more like horseshoe.

As a horseshoe-shaped representation of the four forms of ownership would suggest, the leap between state and private ownership can be made more easily than a shift to nonownership or cooperative ownership. That may be why so much of our attention has focused on nationalization versus privatization. The leap is so simple: Just buy out the other side, change the directors, and keep going; the internal control systems remain intact. In Russia today, in many sectors, these leaps have been too simple: State control seems to have given way to equally devastating control by the private sector. A surer way of achieving balance-slower and more difficult but now being pursued successfully in some of the other Eastern European nations-is to make wider use of all four forms of ownership around the entire horseshoe.

Unfortunately, we in the West have not come to terms with the full range of possibilities. Because capitalism has supposedly triumphed, the private sector has become good, the public sector bad, and the cooperatively owned and nonowned sectors irrelevant. Above all, say many experts, government must become more like business. It is especially the proposition that I wish to contest. If we are to manage government properly, then we must learn to govern management.

### **Customers, Clients, Citizens and Subjects**

“We have customers,” Vice President Al Gore announced early in his term in office. “The American people.” But do you have to call people customers to treat them decently? We would do well to take a look at what customers, this now fashionable word used to mean before the Japanese taught us a thing or two. The greatest of the U.S. corporations those of the automobile industry-did not treat their customers very well. *They long pursued deliberate strategies of planned obsolescence-a euphemism, for building quality out.* Moreover, at least one giant retail chain regularly used bait-products. And in one well-known story, a famous customer-products company, in order to sell more toothpaste, first made the opening tin its tubes bigger and then marketed toothbrushes with longer heads!

Business is in the business of selling us as much as it possibly can, maintaining an arm’s –length relationship controlled by the forces of supply and demand. I have no trouble with the notion-for cars, washing machines, or toothpaste. But I do for health care. For cars, washing machines, and toothpaste, most intelligent buyers can beware, as the expression goes; and we have protective mechanisms in place for buyers who cannot beware. But caveat emptor is a dangerous philosophy for health care and other complex professional services. Sellers inevitably know a great deal more than buyers, who can find out what they need to know only with great difficulty. In other words, the private ownership model, much as it provides “customers” with a wonderfully eclectic marketplace, does have its limits.

I am not a mere customer of my government, thank you. I expect something more than arm’s –length trading and something less than the encouragement to consume. When I receive a professional service from government-education, for example-the label client seems more appropriate to my role. General Motors sells automobiles to its customers; Ernst and Young provide accounting services to its clients.) *In fact, a great many of the services I receive from government are professional in nature.* But, most important, I am a citizen, with rights that go far beyond those of customers or even clients. Most of the services provided by government, including highways, social security, and economic policy, involve complex trade-offs between competing interests. Tom Peters captures this idea perfectly with a story about getting a building permit to enlarge his house. I don’t want some bureaucrats at City Hall giving me a hard time, he said in one of his newsletters. I want proper, quick, businesslike treatment. But what if my neighbor wants a permit to enlarge his house? Who’s City, Hall’s customer then?

If I have rights as a citizen, then I also have obligations as a subject. The British, of course, retain official status as subjects of the crown-a throwback to the days when individuals forfeited much of their autonomy over their “nasty, brutish, and short” lives, as Thomas Hobbes put it, in return for the protection of the state. But, British or not, in one way or another we all remain subjects of our governments-when we pay taxes, allow ourselves to be drafted into armies, or respect government regulations for the sake of collective order.

Customer, client, citizen, and subject: These are the four hats we all wear in society. As customers and citizens, we enjoy a reciprocal, give-and-take relationship with government.

Government's customers receive direct services at arm's length; its citizens benefit more indirectly from the public infrastructure it provides. But there is one major difference between government's customers oriented activities and its citizen-oriented activities: frequency of occurrence. Review public sector carefully-for example, go over a government telephone directory-and you will find relatively little that fits the pure customer category. (And some of what does fit is rather unfortunate, such as lottery tickets. Do we really want our governments, like that Toothpaste Company, hawking products? Couldn't the current malaise about government really stem from its being too much like business rather than not enough?) In contrast, under the citizen category, you will find an enormous amount of activity in the form of public infrastructure: social infrastructure (such as museums), physical (such as civil courts), offshore (such as embassies), and the government's own support infrastructure (such as election machinery).

As subjects and clients, we have relationships with government that are more one-sided. To paraphrase John F. Kennedy, the question for us as subjects is what we must do for our governments in the form of respecting state controls. In contrast, as clients who receive professional services, our question is about what the state provides to us. That government phone book reveals all kinds of activities under the subject category-policing, the military, regulatory agencies, and prisons. But more surprising is the prevalence of professional services that governments provide directly, or indirectly through public funding: all of the health care in some countries and much of it in others, much of education, plus other services such as meteorology.

Of course, not all government activities fit nearly into one of the four categories. Our national parks, for example, provide customer services (to tourists) and professional client services (to tourists stranded on mountain faces). Parks are also part of the public infrastructure we enjoy as citizens, and that fact requires us, as subjects, to respect the environment of the park. To take another example, the inmates of prisons are most evidently subjects. But they remain citizens with certain rights and, insofar labels, therefore, not so much for classification as for clarification-to further our appreciation of the varied purpose of government.

Let me link the roles of customer, citizen, client, and subject to our earlier discussion. Customers are appropriately served by privately owned organizations, although cooperatively owned ones-such as mutual insurance companies-can often do the job effectively. Only in limited spheres is direct customer service a job for the state -ownership model only with a great deal of prudence. The trade-offs among conflicting interests in citizen activities and the necessary use of authority in subject activities mandate a clear role for the state.

The client relationship is perhaps more complicated. It is not clear that those professional services widely accepted as public-certain minimum levels of education and of health care, for example-are particularly effective when offered directly by government, let alone by private business. Neither one on its own can deliver all the nuanced requirements of professional

services. Markets are crass; hierarchies are crude. No owned organizations or, in certain cases, cooperatively owned ones may serve us better here, albeit with public funding to ensure some equity in distribution. Incidentally, relying on cooperatively owned organizations for professional services is not unusual. Even such obviously commercial professions as accounting and consulting often deliver services through cooperatives-namely, professional partnerships.

## **The Myths of Management**

We have seen that a balanced society requires various institutional forms of ownership and control and that within the public sector there is a wide range of roles for government. How, then, should government activities be managed? To answer the question, we first need to take a look at management itself-or at least at the popular myths about it.

Discussion of management is currently all the rage. I should really say Management, following the lead of Albert Shapero of Ohio State University, who years ago wrote an article titled “What MANAGEMENT Says and What Managers Do” (Fortune, May 1976). We are talking about his capital-letter Management here-a narrow, stylized process that, according to my research, has surprisingly little connection with what effective managers actually do. Yet this is the kind of management that now inundates us in bookstores, M.B.A. programs, and hyped training-seminars, for example. But does it really apply to our roles as citizens, subjects, clients, and occasionally customers of government? Rarely, in my opinion. Let me explain.

Three assumptions underlie the Management view of management.

- *Particular activities can be isolated*-both from one another and from direct authority. The principle derives from the private sector, where many corporations are divided into autonomous business, organized as divisions. Each unit has a clear mission: to deliver its own set of products or services. If it satisfies the goals set by the central headquarters, it is more or less left alone.
- *Performance can be fully and properly evaluated by objective measures*.- The goals that each activity must achieve can be expressed in quantitative terms; Both costs and benefits can be measured. In business, of course, the criteria are financial, and costs and benefits are combined to set standards for profit and for return on investment. That way, there can be “objective” assessment, which is apolitical in nature. The system can not afford a great deal of distracting ambiguity or nuance.
- *Activities can be entrusted to autonomous professional managers held responsible for performance*.- “Let the managers manage,” people say. Many have great faith in managers trained in the so-called profession of management. “Make them accountable. If they perform according to plan, as indicated by measurement, reward them. If they don’t replace them.”

These assumptions, in my opinion, collapse in the face of what most government agencies do and how they have to work. To isolate government activities from direct hierarchical control in the manner that Management prescribes, there have to be clear, unambiguous policies formulated in the political sphere for implementation in the administrative sphere. In other words, policies have to be rather stable over time, and politicians (as well as managers of other agencies) have to stand clear of the execution for those policies. How common is that? How many government activities fit such a prescription?

Lotteries, to be sure, but what else? Less than you might think. Many government activities are inter-connected and cannot be isolated. Foreign policy, for example, cannot be identified with anyone department, let alone any one agency. There are, of course, public sector activities that can be isolated horizontally from one another more or less, as in the case of police or prison services. But can they be isolated vertically –from the political process? Certainly, there has been no shortage of effort to isolate them. A few years ago, the United Kingdom made its prison service an ostensibly autonomous executive agency and appointed a high –flying business manager to run it. Recently, in a major scandal, the manager was fired-apparently because he would not dismiss one of the wardens after a highly publicized escape of three inmates. On leaving, he complained to the press that there was more political control over the service after it became “autonomous” than before.

How many politicians are prepared to relinquish control of how many of their policies? And how many policies in government today can simply be formulated in one place to be implemented in another, instead of being crafted in an iterative process involving both politics and administration? Learning is another of the current buzzwords of Management. Well, this process of crafting policies if learning mindlessly applying them is not. The belief that politics and administration in government-like formulation and implementation in corporate planning-can be separated is another old myth that should be allowed to die a quiet death.

Next consider the myth of measurement, an ideology embraced with almost religious fervor by the Management movement. What is its effect in government? Things have to be measured, to be sure, especially costs. But how many of the real benefits of government activities lend themselves to such measurement? Some rather simple and directly delivered ones do-especially at the municipal level-such as garbage collection. But what about the rest? Robert McNamara’s famous planning programming, and budgeting systems in the U.S. federal government failed for this reason: Measurement often missed the point, sometimes causing awful distortions. (Remember the body counts of Vietnam?) Many activities are in public sector precisely because of measurement problems: if everything was so crystal clear an every benefit so easily attributable, those activities would have been in the private sector long ago.

Consider an example from England’s public sector health care. A liver transplant surgeon in the National Health Service operated on ten patients. Two died. Of the eight who survived, one who had had cancer years earlier suffered a reoccurrence. Another patient’s liver began to fail, and he needed a second transplant. Of the remaining six patients, only three were able to resume normal working lives. Asked about his performance, the surgeon claimed his success rates as 8 in 10. (Indeed, as soon as he replaced that failing liver, he was prepared to claim 9 in 11. He counted livers, not people.) An immunologist put it at 7 in 10, believing that the surgeon should not have operated on the person who had cancer. A cost-conscious hospital administrator put the figure at 6 in 10. The nurses claimed 3 in 10, taking into account post operative quality of life.

Now, picture yourself having to make your own assessment. Where is the magic envelope with the one right answer? You won’t find it. The fact is that assessment of many of the most common activities in government requires soft judgment something that hard measurement can not provide. So when Management is allowed take over, it drives everyone crazy. And no one more so than the “customer,” who ends up getting the worst of it.

Finally, there is the myth that the professional manager can solve everything: “Put someone properly trained in charge and all will be well.” We are enamored of this cult of heroic leadership that we fail to see its obvious contradictions. For example, in the name of empowering the workers, we actually reinforce the hierarchy. So-called empowerment becomes the empty gift of the bosses, who remain firmly in charge. And those bosses, if knowledgeable about nothing but Management itself, sit in midair, all too often ignorant of the subject of their management. Such a situation just breeds cynicism. In mortal fear of not meeting the holy numbers, managers run around reorganizing constantly, engendering more confusion than clarification. In other words, our obsession with Management belies a good deal of the reality out there. Consequently, it distorts serious activities, as in the case of many public school systems that have been virtually destroyed by the power of the managerial hierarchy of direct classroom activities without ever having to teach anything.

### **Models for Managing Government**

How then should government be managed? Let’s consider five models. Each is marked by its own way of organizing government’s controlling authority, or superstructure, and the activities of its agencies, or microstructure. (The budget authority would be part of the former, for example; an environmental protection agency, an example of the latter.) Some of the models are older, some newer. Some we could do with less of, despite their current popularity; others we could use more of, despite their unfamiliarity.

The Government-as-Machine Models. Government here is viewed as a machine dominated by rules, regulations, and standards of all kinds. This applies to the superstructure no less than to each of the microstructures. Each agency controls its people and its activities just as the agency itself is controlled by the central state apparatus. Government thus takes on the form of a hologram: Examine any one piece and it looks just like the rest.

This has been the dominant model in government, almost to the exclusion of everything else. As Frederick Taylor’s “one best way,” it was popularized in the 1930s in the public sector by Luther Gulick and Lyndall Urwick. Its motto might be Control, Control. In fact, the term bureaucrat, for civil servant, comes from the influence of this model.

The machine model developed as the major countervailing force to corruption and to the arbitrary use of political influence. That is why it became so popular earlier in this century. It offered consistency in policy and reliability in execution. But it lacked flexibility and responsiveness to individual initiative, so now it has fallen out of favor. In one form or another, however, the machine model continues to dominate government.

The Government-as-Network Model. This is the opposite of the machine model loose instead of tight, free flowing instead of controlled, interactive instead of sharply segmented. Government is viewed as one intertwined system, a complex network of informal channels of communication. At the micro level work is organized around projects—for example, a project to develop a new policy on welfare or to plan for construction of new building. Connect, communicate, and Collaborate might be the motto of this model. Ironically, like the machine model, the network

model is also holographic in that the parts function like the whole: Individual projects function within a web of interrelated projects.

### **The Performance-Control Model**

Capital Letter Management finds its full realization in the performance-control model, the motto of which could be Isolate, Assign and Measure. This model aims above all to make government more like business. But we need to be specific here because the ideal is not just any business. There is an assumption, not often made explicit, that the ideal is the divisional structure that conglomerates in particular have popularized. The overall organization is split into “businesses” that are assigned performance targets for which their managers are held accountable. So the superstructure plans and controls while the misstructures execute. All very tidy. But not necessarily very effective.

For one thing, few people in business still believe in the conglomerate form of organizing. If the businesses have so little to do with one another, why bother to have them in the same organization? What value is added by a remote headquarters that exercises control of financial performance alone? For another thing, a heavy emphasis on planning and measured performance reinforces conventional hierarchical control at the level of the microstructure, where managers have personal responsibility for attaining impersonal targets. Thus the ultimate effect is to reinforce the old machine model. In other words, the performance model decentralizes in order to centralize; it loosens up in order to tighten up. And tightening up comes at the expense of flexibility, creativity, and individual initiative. This, the brave new world of public management all too often comes down to nothing more than the same old machine management –new labels on the old bottles. It works fine where machine management worked-sometimes even slightly better- but not anywhere else.

The Virtual-Government Model. Carry the performance model to its natural limit and you end up with a model that can be called virtual government. Popular in places like the United Kingdom, the United States, and New Zealand, virtual government contains an assumption that the best government is not government. Shed it all, we are told, or at least all that it is remotely possible to shed. In virtual government’s preface world, the microstructures the activities of agencies) would no longer exist within government. All that kind of work would take place in the private sector. And the super-structure would exist only to the extent needed to arrange for private organizations to provide public services. Thus the motto of this model might be Privatize, Contract, and Negotiate. The model represents the great experiment of economists who have had to manage anything.

### **The Normative-Control Model**

None of the above models has succeeded in structuring social authority adequately. Perhaps that is because social authority is hardly about structures. “It’s all so simple, Anjin-San,” the confused British captain in *Shogun*, shipwrecked in a strange land, is told by his Japanese lover. “Just change your concept of the world.” Exemplifying a different concept of the World, the normative-control model is not about systems but about soul. Here it is attitudes that count, not numbers. Control is normative-that is, rooted in values and beliefs.

The model is not well recognized in most Western governments these days, let alone in most Western businesses. It hasn't exactly worked badly for the Japanese, but the more they have demonstrated its superiority in direct competition with the West, the more the West has retreated into its old machine model-or newer versions of it-which works in precisely the opposite way. Once upon a time, however, when there was still the concept of public service, it was really the normative model that managed to keep the machine model functioning. In other words, service and dedication muted the negative effects of the bureaucracy. But much of that attitude is now gone or going quickly.

There are five key elements that characterize the normative model:

- **Selection:** People are chosen by values and attitude rather than just credentials.
- **Specialization.** This element ensures membership dedicated to an integrated social system.
- **Guidance:** Guidance is by accepted principles rather than by impose plans, by visions rather than by targets.
- **Responsibility:** All members share responsibility. They feel trusted and supported by leaders who practice a craft style of management that is rooted in experience. Inspiration thus replaces so-called empowerment.
- **Judgement:** Performance is judged by experience people including recipients of the service, some of whom sit on representative oversight boards.

The motto of the normative model might be Select, Socialize and the Judge. But the key to all is dedication, which occurs in two directions: by and for the providers of the service. Providers are treated decently and therefore respond in kind. The agencies can still be isolated horizontally, but vertical control by the superstructure is normative rather than technocratic. The model allows for radically different microstructures; more missionary, egalitarian, and energized, less machine like and less hierarchical.

There is no one best model. We currently function with all of them. Tax collection would be inconceivable without a healthy dose of the machine model, as would foreign policy without the network model. And no government can function effectively without a significant overlay of normative controls, just as no government today can ignore the need to shed what no longer belongs in the public sector. Government, in other words, is an enormously eclectic system, as varied as life itself (because it deals with almost every conceivable facet of life).

But some models are for the better and some for the worse. We might wish to favor the better. We all recognize the excessive attention given to the machine model. But we should be aware of its resurgence in the performance model. This is not to dismiss the performance model. The quasi-autonomous executive agency is fine for many of the apolitical, straightforward services of government-such as the passport office. Let's just keep it there and not pretend it is some kind of new "best way".

We need to be more appreciative of the network model, which is necessary for so many of the complex, unpredictable activities of today's governments-much of policy making, high – technology services, and research, for example. But reliance on this model can also be overdone.



In France, both public and private sectors have been dominated by a powerful and interconnected elite who move around with a freedom and influence that is proving increasingly stifling to the nation. The network system in France could use a lot more agency autonomy to check the power of that elite.

It is my personal belief that we sorely need a major shift of emphasis to the normative model. As the Japanese have made clear, there is no substitute for human dedication. And although much of Western business needs to take this message to heart, it has become especially important in government with its vagaries, nuances, and difficult trade-offs among conflicting interests. An organization without human commitment is like a person without a soul: Skeleton, flesh, and blood may be able to consume and to excrete, but there is no life force. Government desperately needs life force.

I believe this conclusion applies especially to client-oriented professional services, such as health care and education, which can never be better than the people who deliver them. We need to free professionals from both the direct controls of government bureaucracy and the narrow pressures of market competition. That is why nonownership and some cooperative ownership seem to work so well in those areas.

## **Governing Management**

If any of these ideas make sense, then we must prove them feasible by beginning to temper the influence that business values and currently popular Management thinking have on other sectors of society. On other words, government may need managing, but management could use a little governing, too. Consider the following propositions.

- *Business is not all-good; government is not all bad.* Each has its place in a balanced society alongside cooperative and nonowned organizations. I do not wish to buy my cars from government any more than I wish to receive my policing services from General Motors. And I would like to see both private and public sectors passed over, for the most part, in the direct delivery of health care in favor of non-owned and cooperatively owned organization.
- *Societies get the public services they expect.* If people believe that government is bumbling and bureaucratic, then that is what it will be. If, in contrast, they recognize public service for the noble calling it is, they will end up with strong government. And no nation today can afford anything but strong government. Isn't it time that all the knee-jerking condemnation of government in the United States stopped? As a Canadian who lives part of the year in France, I can testify that these negative attitudes are proving contagious, and they are doing none of us any good.
- *Business can learn from government no less than government can learn from business; and both have a great deal to learn from cooperative and non-owned organizations.* People in the public sector cope with their own kinds of problems: conflicting objectives, multiple stakeholders, and intense political pressure, for example. Yet their problems are becoming increasingly common in the private sector. Many of the most intelligent, articulate, and effective managers I have met work for government. Unfortunately, they are not very aggressive about letting their ideas be known. Business people profit greatly when they listen to them.

Cooperatives have sophisticated ways of dealing with dispersed constituencies, as well as with special kinds of customers. And then there is the non-owned organization, wherein we find the West's fullest realization of the normative model, about which we have much to learn. We can benefit greatly from the experiences of both-as soon as we get beyond our narrow prejudices.

- *We need proud, not emasculated, government.* Attacks on government are attacks on the fabric of society. We have individual needs, to be sure, but a society that allows them to undermine collective needs will soon destroy itself. We all value private goods, but they are worthless without public goods-such as policing and economic policies-to protect them.

Making numerous political appointments is now considered a natural part of the U.S. political process. (This was not always the case: Such appointments are proportionately three times more common today than they were in the 1930s.) Each new administration simply replaces the top layers of the departmental hierarchies. I believe it is time that this was recognized for exactly what much of it is: political corruption; not technically illegal but nonetheless corrupting of a dedicated and experienced public service. It, too, stems from the mistaken belief that those who have managed something can manage anything (although, many political appointees have managed only a few lawyers or research assistants).

If political appointments are so wonderful, how come they are not used in the military? Imagine a U.S. president replacing all the one-and two-star and most of the three-star generals of the army with political appointees. There would be outrage. "You can't run the army this way," people would insist. "You have to have devoted, experienced people". Well, why is it any difference for the departments of commerce, education, or state? Other countries have found ways to achieve political control without resorting to political administration.

- *Above all, we need balance among the different sectors of society.* This applies to attitudes no less than to institutions. Private sector values are now pervading all of society. But government and other sectors should be careful about what they take from business. Business has probably never been more influential than it is now. In the United States, through political action committees and lobbying activities, institutional interests (not only business interests) put enormous pressure on the political system, reducing the influence of individuals. The system is out of control. My argument here is not against business as business; rather, it is for balance in society. We need balance among our four sectors, and we need to balance our public concerns as individuals with the private demands of institutions.

Today the prevailing mood supports the privatization of public services. Some of that thinking is probably useful. But a good deal of it is also just plain silly. And if we are so prone to scrutinizing what doesn't belong in government, shouldn't we be equally diligent in considering what doesn't belong in business? Take newspaper, for example. Can any democratic society afford to have all newspapers in the private sector, especially when they are concentrated in a few hands that can exercise great indeed in some of the most prestigious newspapers in the world for example, nonownership of The Guardian in England and multiple cooperative ownership (journalists and readers, alongside some institutions) of Le Monde in France. Let us not forget that the object of

democracy is a free people, most free institutions. In short, we would do well to scrutinize carefully the balance in our societies now, before capitalism really does triumph.

# A TOTAL QUALITY MANAGEMENT OVERVIEW

Joseph & Susan Berk

For the past decade, American business has been captivated by a philosophy known as Total Quality Management. The Total Quality Management movement (or simply TQM, as it is more commonly known) has caught on in essentially every corner of American industry. The TQM philosophy is a guiding force in other industrialized nations as well (most notably Japan, although recent travel to Europe, Central Asia, and the Middle East shows TQM has indeed become a World Wide concept).

## What is TQM, and How Did it Begin?

To understand this concept fully, it makes sense first to understand some of the underlying concepts of quality management that have guided our industrial development. The concept of quality control as a distinct discipline emerged in the United States in the 1920s. At the time, quality control was intended simply to control, or limit, the creation of defective items in industrial processes. As will be covered in subsequent chapter, the earliest quality control idea was to inspect the output of a manufacturing process, and then sort defective products from good ones. There are numerous disadvantages to this sorting process, especially if the sorting is performed by different people from those manufacturing the product.

As the quality control concept described above emerged in the first half of this century, numerous refinements occurred. Pioneering work by Shewhart, Deming, Juran, Feigenbaum, Crosby, and others indicated that perhaps better ways to approach the quality control concept existed. Perhaps simply sorting good products from bad, they reasoned, was not the most efficient way to assure a quality output. A more effective management philosophy might focus on actions to prevent a defective product from ever being created, rather than simply screening it out. Also, these and other men soon recognized that the concept of quality control need not be restricted only to manufacturing processes. The idea of assuring quality could also be applied to administrative processes and service industries.

Several leading management theorists expanded upon this idea. Shewhart applied statistics to industrial processes in the World War I era, using mathematical tool to monitor processes. Shewhart's concept was that the use of statistical process management methods could provide an early warning and allow the process to be adjusted prior to producing a defective product. Deming and Juran based significant portions of their work on Shewhart's concept of using statistics to control processes, limit variation, and thereby improve quality.

The TQM philosophy continued to emerge under Deming's guidance, whom many regard as the father of what is now known as TQM. Interestingly, Deming's quality management philosophy were first developed in the years prior to World War II. Deming believed quality management should be pervasive and should not focus on merely sorting good products from bad. Deming believed the responsibility for quality should be shared by everyone in an organization. Perhaps most significantly, Deming recognized that most quality problems were system-induced and where therefore not related to workmanship.

Deming's work only saw limited application in the United States prior to World War II, but a curious set of circumstances developed immediately after World War II. General Douglas MacArthur, who had been appointed military governor of post-war Japan, brought Deming to Japan to serve as a management consultant to the Japanese as they rebuilt their industrial base. Deming's message had essentially fallen on deaf ears in the United States, but not so in Japan.

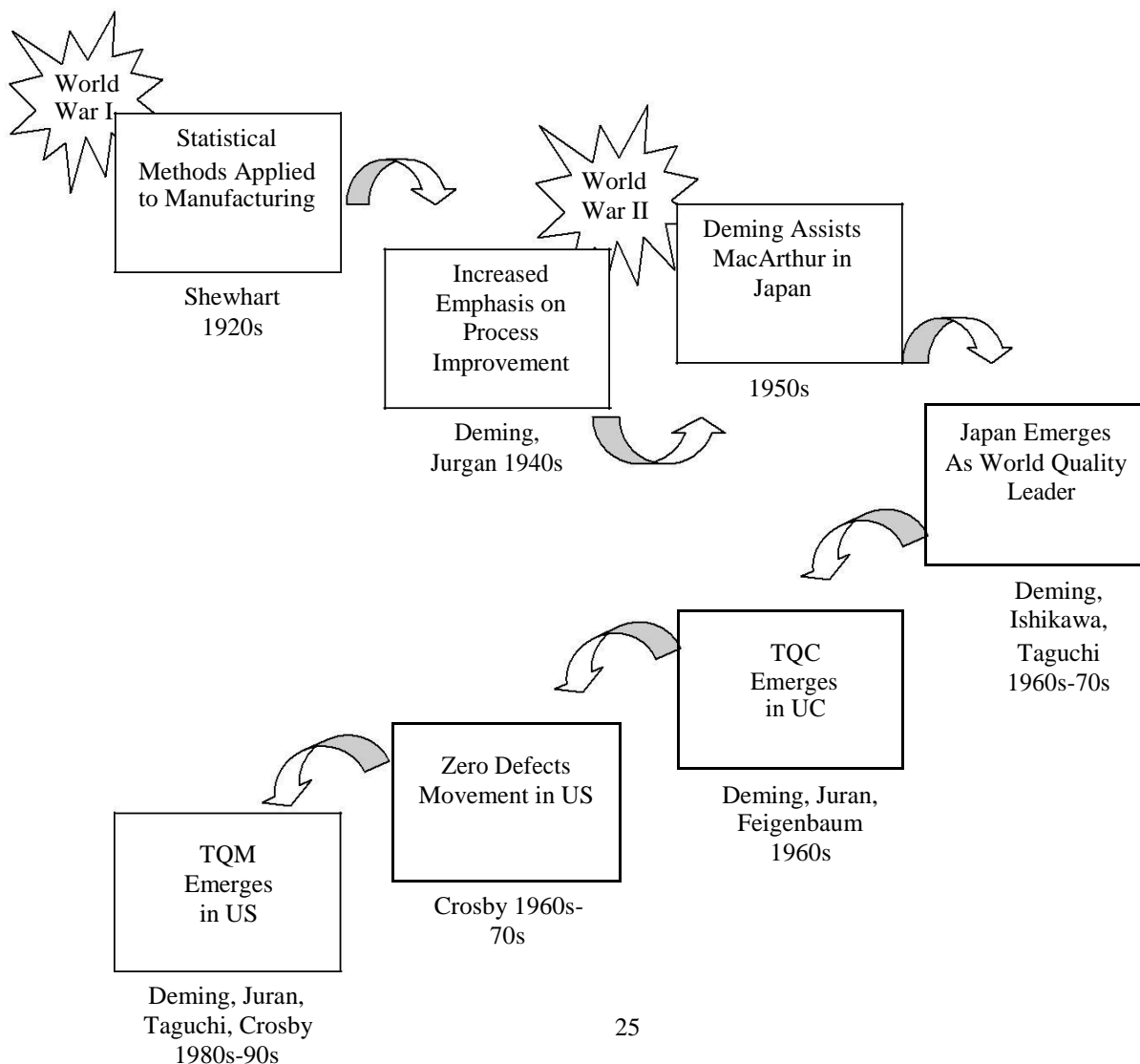
Japan, then as now, was an island nation that had to import all its raw materials. The Japanese were attentive listeners when Deming advised them on methods of preventing the manufacture of defective products. The Japanese saw this as a natural approach to preventing waste, or, perhaps more to the point, as a way of maximizing

their productivity and the output of the raw materials they had to import. Deming praised the virtues of using statistical quality control and manufacturing methods to do this. Japan, as a formerly industrialized nation, had to rebuild its industrial base from essentially nothing. The Japanese had no preconceived approaches about sorting defective products from acceptable ones. They were willing to learn.

What followed in Japan during the ensuing decades has been well studied and is now well known. The Japanese dominated almost every market they chose to enter: electronics, cameras, automobiles, steel, shipbuilding, motorcycles, and several others. Superior quality became a common theme of Japanese market dominance. Much of the Japanese quality superiority occurred as a result of statistical manufacturing methods and other management philosophies now recognized as Total Quality Management. The Japanese made additional contributions to the TQM philosophy, most notably in the areas of variability reduction, problem solving, teamwork, and defining and satisfying customer expectations. Taguchi and Ishikawa contributed heavily to these disciplines.

While Japan continued its quality revolution in the years following World War II, statistical process control methods were not widely pursued in the United States. The United States also recognized that other management philosophies should be applied to the quality improvement challenge. This blending of additional management philosophies, all targeting quality improvement, became known as the total Quality concept.

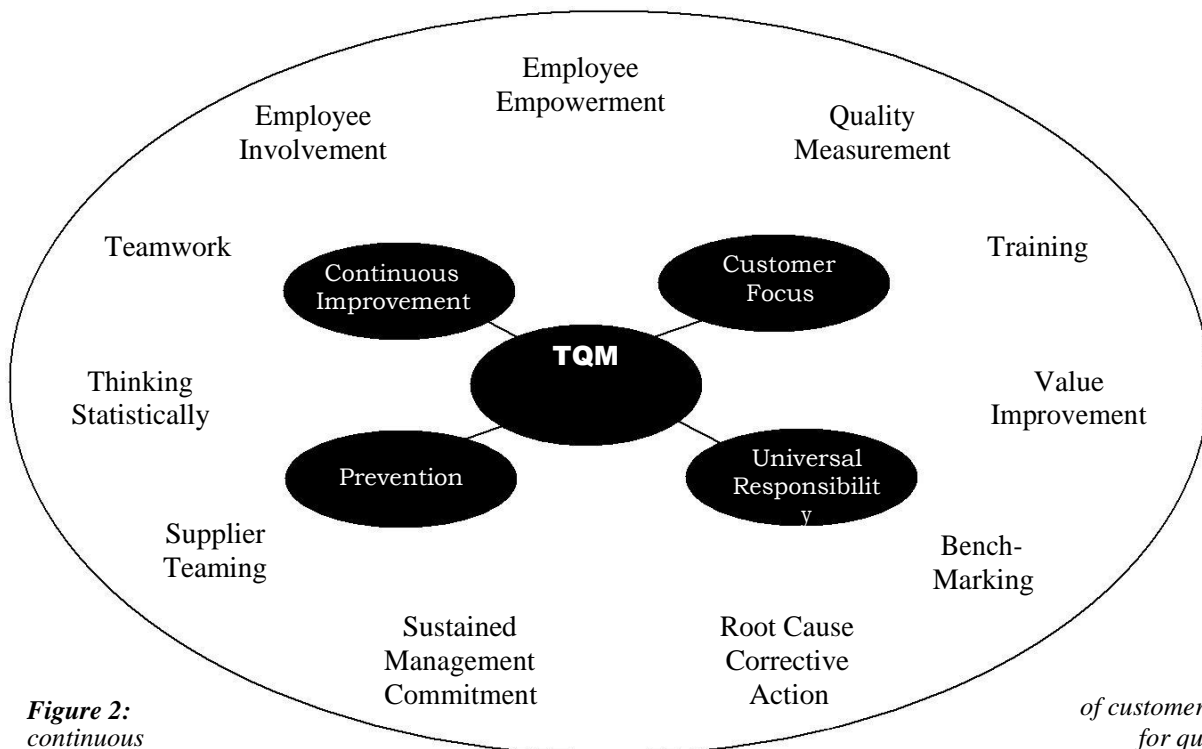
The concept developed under the guidance and teachings of Feigenbaum, Deming, Juran, and others. Crosby later promoted the "zero defects" concept in his series of excellent books, emphasizing adherence to requirements and employee motivation. All these men contributed to what has become known as TQM.



**Figure1:** *The Emergence of Total Quality Management. What began as an American management philosophy died in America, took root in Japan, and ultimately returned to flourish in the United States and other nations.*

TQM has continued to emerge as a predominant management philosophy in the United States and abroad. TQM emphasizes a number of concepts, which all support the philosophies of customer focus, continuous improvement, defect prevention, and recognition that quality responsibility is shared by all of us. Several concepts are inherent to TQM, but all support these four philosophies. What are the basic TQM elements? We've shown them in Figure 2, and listed each below:

- a sustained management commitment to quality
- focusing on customer requirement and expectations
- preventing defects rather than detecting them
- recognizing that responsibility for quality is universal
- quality measurement
- a continuous improvement approach to doing business
- root cause corrective action
- employee involvement and empowerment
- the synergies of team work
- process improvement
- thinking statistically
- benchmarking
- inventory reduction
- value improvement
- supplier teaming
- training



**Figure 2:** *continuous shared by all of us. Other technologies support these four principles.*

*of customer focus, for quality is*

Many of the concepts listed above are not new. Indeed, many people have expressed a view that Total Quality Management could be replaced with another, more simple term: good management. We believe there's a lot of truth to that. Regardless of the terminology selected to describe the fundamental quality revolution occurring in the United States today, quality has emerged as a driving force in our nation and abroad. Let's begin our discussion with a brief overview of the key TQM concepts.

**A Sustained Management Commitment to Quality.** An organization's personality and culture will ultimately reflect its senior management's values. If an organization is serious about implementing TQM, the commitment to do so has to start at the top, and the organization's senior management has to be unwavering in its commitment to quality. Almost any organization's senior managers will claim they are committed to quality, but how they act at the end of the month (when shipments are due) really sets the tone for the entire organization. If management is willing to let a defective product go out the door in order to make sales, all the talk in the world about quality won't make a difference to the people making the product. If management is willing to take a sales hit if quality levels are not up to requirements, the rest of the organization will understand the commitment to quality is real.

**Focusing on the Customer.** Lee Iacocca once advertised that Chrysler had only three rules: Satisfy the customer, satisfy the customer, and satisfy the customer. That about sums up the TQM philosophy on customer focus. This philosophy is supported by a number of TQM technologies to assure that customer needs and expectations are understood and met. These include quality measurement, Quality Function Deployment, and other concepts. Staying close to the customer and placing customer desires above all else is a basic TQM precept.

**Preventing Rather Than Detecting Defects.** TQM is a management philosophy that seeks to prevent poor quality in products and services, rather than simply to detect and sort out defects. If a single characteristic is most strongly attached to the TQM philosophy, it is prevention rather than detection. Like many of the philosophies tied to TQM, this is not a new concept. Recall a popular saying from Halliburton's Wise Saws, first published a century and a half ago: "An ounce of prevention is worth a pound of cure." That wisdom says it all, from a TQM perspective. This book will develop a number of supporting TQM technologies related to defect prevention rather than detection. Some of these technologies were created nearly exclusively to support the concept of prevention (most notably, statistical process control, continuous process improvement, Taguchi design of experiments, problem solving, and systems failure analysis).

**Universal Quality Responsibility.** Another basic TQM precept is that the responsibility for quality is not restricted to an organization's quality assurance department, but is instead a guiding philosophy shared by everyone in an organization. In the United States this represents a significant shift in thinking for most manufacturing organizations, which have traditionally relied on inspection to assure quality. By relying on inspection (or detection, rather than prevention), most of these organization have unknowingly and unwittingly instilled a deep belief in the people who actually manufacture products that they are no longer responsible for the quality of their output. TQM means this thinking is reversed, and every one takes responsibility for quality. Does this type of thinking work? Absolutely. Most of us would intuitively suspect in order to improve quality; the quality assurance department would have to grow. In companies that successfully implement TQM, just the opposite occurs. As quality improves, the quality assurance department gets smaller. A few companies fully committed to TQM have done away completely with their quality assurance organizations. If everyone is responsible for the quality of the output (and everyone accepts this responsibility), the need for a separate quality assurance function disappears.

**Quality Measurement.** Along with "An ounce of prevention is worth a pound of cure" is another saying particularly relevant to TQM, and it is: "If you don't know where you're going, you'll probably end up somewhere." The quality measurement aspect of TQM asks the question: Where are we, and where are we going? A basic TQM concept is that quality is a measurable commodity, and in order to improve, we need to know where we are (or stated differently, what the current quality levels are), and we need to have some idea where we are going (or what quality levels are), and we need to have some idea where we are going (or what quality levels we aspire to).

**Continuous Improvement.** TQM espouses a philosophy of continuous improvement in all areas of an organization. This philosophy ties in closely with the quality measurement and universal quality responsibility concepts mentioned above. Quality measurement is needed in order to focus improvement efforts appropriately, and continuous improvement should be pursued in all areas. This TQM concept focuses on finding shortfalls in administrative, manufacturing, and service processes that can detract from a quality output, and improving the

process to eliminate undesirable outputs. Instead of finding someone to blame when things go wrong (or limiting the application of a corrective action to fix a specific defect), TQM practitioner instead zero in on the process deficiencies that allowed the problem to exist. Eliminating process deficiencies will prevent future defects. There's another extremely significant aspect to the continuous improvement concept: It should not be attempted on a grand scale, but pursued in small, incremental, manageable steps.

**Root Cause Corrective Action.** Most of us have experienced instances in which problems we thought were corrected continued to occur. TQM seeks to prevent this by identifying the root cause of problems, and by implementing corrective actions that address problems at the root cause level. Several technologies are associated that address problems at the root cause level. Several technologies are associated with this endeavor. One consists of basic problem-solving skills. Others consist of advanced system-failure analysis approach, which include such technologies as fault tree analysis and management tracking tools to assure the systematic identification and objective evaluation of all potential failure causes, as well as the selection, implementation, and evaluation of appropriate corrective actions.

**Employee Involvement and Empowerment.** Another fundamental TQM concept is that employees must be involved and empowered. Employee involvement means every employee is involved in running the business and plays an active role in helping the organization meet its goals. Employee empowerment means employees and management recognize that many obstacles to achieving organizational goals can be overcome by employees who are provided with the necessary tools and authority to do so.

**The synergy of Teams.** In addition to the TQM concepts of empowerment and involvement of employees, taking advantage of the synergy of teams is an effective way to address the problems and challenges of continuous improvement. Dr. Kaoru Ishikawa first formalized the teams concept as part of the TQM philosophy by developing quality circles in Japan. The quality circle concept soon reached the United States, where it developed into a more sophisticated and focused teaming concept (these groups are often referred to as focus teams).

**Thinking Statistically.** Statistical thinking is another basic TQM philosophy. Quality efforts often require reducing process or product-design variation, and statistical methods are ideally suited to support this objective. For several reasons, this country has been less receptive than some of its competitors to using statistical methods. Many of us find statistics to be an intimidating subject. It really is not.

**Benchmarking.** Benchmarking consists of identifying other organizations that perform well and incorporating their wisdom into your organization. This TQM philosophy consists of defining competitors' best features from both internal and customer perspectives, and then adopting the best practices of these organizations to your operation.

**Inventory Reduction.** Largely in response to their lack of natural resources (as well as the 1970s worldwide oil shortages), the Japanese pioneered the concept of reducing inventories. This management philosophy became known as Just-in-Time (or JIT, for short) inventory management. The Japanese JIT inventory management concepts caught on in the United States and other nations. Although the concept was originally intended to address material shortages, an interesting side effect immediately emerged: As inventories grew smaller, quality improved.

**Value Improvement.** The linkage between continuous improvement and value improvement is simultaneously obvious and subtle. This linkage becomes apparent when one considers the definition of quality, which is the ability to meet or exceed customer requirements and expectations. The essence of value improvement is the ability to meet or exceed customer expectations while removing unnecessary cost. Removing unnecessary costs while simultaneously satisfying customer expectations and requirements can only serve to increase customer satisfaction (after all, the customer is receiving the same level of quality for a lower cost). Simply cutting costs, however, will not improve value if the focus does not remain on satisfying customer requirements and expectations.

**Supplier Teaming.** Another principle of the TQM philosophy is to develop long-term relationships with a few high-quality suppliers, rather than simply selecting those suppliers with the lowest initial cost. American industry and government procurement agencies have had, and are continuing to have, difficulty in implementing this concept, although progress is being realized. Many executives cannot escape the lure of a lower bid for procured components or materials, but the TQM philosophy is that the lowest initial cost often does not reflect the lowest overall life-cycle cost, if quality problems later emerge with the low bidder's suppliers or services. Although the



United States has been somewhat slow to embrace this concept, many companies are doing quite well by doing so. Loral Aeronutronics, a high-technology electronics systems developer and manufacturer, recently reduced its supplier base from over 5,000 suppliers to approximately 400. Many other companies can boast similar reductions, which all focus on developing long-term relationships with a few outstanding suppliers instead of instigating far-flung bidding wars.

**Training.** One of the most basic tools is training. In order to use concepts and technologies effectively, people, have to be trained. Yet another saying comes to mind: If you think training is expensive, you should try ignorance.

Recognize that TQM is a management philosophy, an abstract entity. We have studied several organizations' TQM definitions and they are all different, but all have similar elements. The four themes mentioned above (customer focus, continuous improvement, defect prevention, and universal quality responsibility) figure prominently in each.

### **A few Words of Caution**

TQM is not an overnight cure for an organization's quality problems. The TQM implementation process is not a program. A TQM implementation effort has a beginning, but if implemented properly, it does not have an ending. The continuous improvement process continues indefinitely in organizations that successfully implement TQM.

*The Wall Street Journal*, *Newsweek*, and other leading management periodicals have recently published articles questioning the validity of TQM. Most of these have questioned the high cost of TQM implementation and the time required to realize returns. Without doubt, some people have capitalized on interest in the TQM philosophy, and high-priced TQM consultants are more than plentiful. The TQM philosophy has also suffered within many organizations from near-fanatics who are adept at mouthing platitudes but relatively shallow at practical implementation of the basic TQM technologies.

The above notwithstanding, we are convinced TQM (or good management, or whatever anyone chooses to call the continuous improvement process) is here to stay. Changing the culture of an organization from one based on detecting defects to one based on preventing them will take years, not weeks or months. Returns on the TQM investment will not be instantaneous. Results will come in small bites as continuous improvement projects realize small but continuing progress. We advise patience when embarking on this journey.

### **Summary**

The Total Quality Management process is not simply a new set of buzzwords or this week's quality slogan. TQM emerged almost 50 years ago in America, largely as the result of pioneering work by Deming, Juran, Shewhart, Feigenbaum, and others. The concept did not immediately take root in the United States, but it did in Japan in the years following World War II, and as a result Japan emerged as a world quality leader. The TQM process gained acceptance in the United States during the 1980s, and the TQM quality revolution is continuing to develop in America. TQM emphasizes a number of management concepts, all centered on philosophies of customer focus, continuous improvement, defect prevention, and a recognition that responsibility for quality is shared by all of us. Implementing a TQM culture takes years, and returns on the TQM investment will not be instantaneous. We advise patience when embarking on this journey.

### **References**

- *"Small Firms Put Quality First,"* Michael Barrier, Nation's Business, May 1992.
- *"The Cost of Quality,"* Newsweek, September 7, 1992.
- *"Six Sigma : Realistic Goal or PR Ploy,"* Jim Smith and Mark Oliver, Machine Design, September 10, 1992.
- *"Commonsense Manufacturing Management",* John S. Rydz, Harper and Row, Inc., 1990
- *"Thriving on Chaos",* Tom Peters, Alfred A. Knopf, Inc., 1987.

- *"The Deming Management"*, Method, Mary Walton, Perigee Books, 1986.
- *"Quality is Free"*, Philip B. Crosby, McGraw-Hill Book Company, 1979.
- *"Guide to Quality Control"*, Kaoru Ishikawa, Asian Productivity Organization, 1982.

# Foundations of Individual Behavior

After studying this chapter, you should be able to:

- |   |  |   |  |
|---|--|---|--|
| 1 | Identify two types of ability                  | 4 | Distinguish between the four schedules of reinforcement. |
| 2 | Define the key biographical characteristics    | 5 | Clarify the role of punishment in learning               |
| 3 | Understand how to shape the behavior of others |   |  |

## LEARNING OBJECTIVES

## **Do you Know How Many Trees There Are in New York City's Central Park**

Amazon.com and Microsoft have at least three things in common. They both headquarter in the Seattle, Washington area. They're both high-tech success stories. And their executives both emphasize intelligence as the primary factor in hiring new employees.

Most organizations emphasize experience when making employee selection decisions. And experience can be a valid predictor of future job performance. But Amazon and Microsoft prefer to emphasize intelligence. Amazon, for instance, carefully scrutinizes college transcripts and SAT scores of potential customer service before making a job offer. Why? The company believes that the key to its success is its ability to innovate, and the smartest people, regardless of their jobs, are the best innovators. So job interviews at Amazon are more likely to focus on an applicant's answers to questions such as "How many windows are in the city of San Francisco?" or "How many trees are in New York City's Central Park?" than "What did you learn from your last job?" Importantly, Amazon interviewers aren't interested in how close an applicant's response is to the correct answer. They're looking at a candidate's reasoning processes. Even for menial jobs, Amazon emphasizes intelligence. Company founder Jeff Bezos defends this approach as a means for fending off mediocrity: "If you start out with A's, you get to keep A's ... If you start hiring B's, B's hire B's."

Similarly, applicants for a job at Microsoft are likely to be asked questions such as "Why are manhole covers round?" "How many gas stations are there in the United States?" "How much water flows through the Mississippi daily?" Again, the interviewers are concerned with how applicants think rather than their ability to provide a correct answer. Bill Gates, cofounder and CEO of Microsoft, succinctly defends his company's belief that IQ is more important than experience – "you can teach smart people anything."

Amazon and Microsoft believe their greatest asset is the collective intellectual resources of their employees. So they consistently seek out and hire the smartest individuals they can find.

Intelligence is but one characteristic that people bring with them when they join an organization. In this chapter, we look at how individual difference in the form of ability (which includes intelligence) and biographical characteristics (such as age, gender, race, and tenure) affect employee performance and satisfaction. Then we show how people learn behaviors and what management can do to shape those behaviors.

People, of course, differ in many ways. Appearance-related differences – such as height, weight, skin hair, and eye color – are the most obvious. Interestingly, there is evidence that appearance matters in the workplace. For example, tall people – because they are seen as more leader-like – actually earn higher performance evaluations and also earn more money. In fact, each inch of height amounted to \$789 more a year in pay. So, someone who is 7 inches taller – say, 6 feet versus 5 feet 5 inches – would be expected to earn \$5,525 more annually. Evidence also suggests that physical attractiveness matters in OB. For example, applicants judged as physically attractive are more likely to get the job. Throughout this chapter we look at how basic individual differences affect employee performance and satisfaction.

Now you may wonder: Wouldn't personality be considered a basic individual difference, too? Yes, it would. Personality is so fundamental and important that we devote an entire chapter to it! So, keep this in mind as you read through the chapter. We will cover personality in detail in Chapter.

### **Ability**

Contrary to what we were taught in grade school, we weren't all created equal. Most of us are to the left or to the right of the median on some normally distributed ability curve. For example, regardless of how motivated you are, it's unlikely that you can act as well as Scarlett Johansson, play basketball as well as LeBron James, write as well as J.K. Rowling, or play the guitar as well as Pat Metheny. Of course, just because we aren't all equal in

abilities does not imply that some individuals are inherently inferior to others. What we are acknowledging is that everyone has strengths and weaknesses in terms of ability that make him or her relatively superior or inferior to others in performing certain tasks or activities. From management's standpoint the issue is not whether people differ in terms of their abilities. They clearly do. The issue is knowing how people differ in abilities and using that knowledge to increase the likelihood that an employee will perform his or her job well.

What does ability mean? As well will use the term, ability refers to an individual's capacity to perform the various tasks in a job. It is a current assessment of what one can do. An individual's overall abilities are essentially made up of two sets of factors: intellectual and physical.

## Intellectual Abilities

**Intellectual abilities** are those needed to perform mental activities – for thinking, reasoning, and problem solving. People in most societies place a high value on intelligence, and for good reason. Smart people generally earn more money and attain higher levels of education. Smart people are also more likely to emerge as leaders of groups. Intelligence quotient (IQ) tests, for example, are designed to ascertain one's general intellectual abilities. So, too, are popular college admission tests such as the SAT and ACT and graduate admission tests in business (GMAT), law (LSAT), and medicine (MCAT). These testing firms don't make the argument that their tests assess intelligence, but experts know that they do. The seven most frequently cited dimensions making up intellectual abilities are number aptitude, verbal comprehension, perceptual speed, inductive reasoning, deductive reasoning, spatial visualization, and memory. Exhibit 2-1 describes those dimensions.

<b>Exhibit 2-1</b>	<b>Dimensions of Intellectual Ability</b>	
<b>Dimension</b>	<b>Description</b>	<b>Job Example</b>
Number aptitude	Ability to do speedy and accurate arithmetic	Accountant: Computing the sales tax on a set of item
Verbal comprehension	Ability to understand what is read or heard and the relationship of words to each other	Plant manager: Following corporate policies on hiring
Perceptual speed	Ability to identify visual similarities and differences quickly and accurately	Fire investigator: Identifying clues to support a charge of arson
Inductive reasoning	Ability to identify a logical sequence in a problem and then solve the problem	Market researcher: Forecasting demand for a product in the next time period
Deductive reasoning	Ability to use logic and assess the implications of an argument	Supervisor: Choosing between two different suggestions offered by employees
Spatial visualization	Ability to imagine how an object would look if its position in space were changed	Interior decorator: redecorating an office
Memory	Ability to retain and recall past experiences	Salesperson: Remembering the names of customers

Jobs differ in the demands they place on incumbents to use their intellectual abilities. The more complex a job is in terms of information-processing demands, the more general intelligence and verbal abilities will be necessary to perform the job successfully. Of course, a high IQ is not a requirement for all jobs. For jobs in which employee behavior is highly routine and there are little or no opportunities to exercise discretion, a high IQ is not important to performing well. However, that does not mean that people with high IQs cannot have an impact on jobs that are traditionally less complex.

For example, do you think a high IQ is important for the job of sanitation worker? It certainly can be. Consider the story of a sanitation worker in Tallahassee, Florida, who proposed the city supply garbage cans. City-supplied garbage cans would allow the collectors to start with an empty garbage can, bring it to house A, pick up that house's garbage can, and bring it to the truck without having to return the can. House A's can would then be placed at house B. This would dramatically improve garbage collection times, allowing the city to cover more territory with fewer people. This example also points to another key reason why intelligent people are better job performers: They are more creative. Smart people learn jobs more quickly, are more adaptable to changing

circumstances, and are better at inventing solutions that improve performance. In other words, intelligence is one of the better predictors of performance across all sorts of jobs. This explains why companies like Amazon.com and Microsoft emphasize assessing candidates' intelligence as a key element in their hiring process.

## **International JOB**

### **The Benefits of Cultural Intelligence**

HAVE YOU EVER NOTICED THAT SOME INDIVIDUALS seem to have a knack for relating well to people from different cultures. Some researchers have labeled this skill *cultural intelligence*, which is an outside's natural ability to interpret an individual's unfamiliar gestures and behaviours in the same way that others from the individual's culture. Cultural intelligence is important because when conducting business with people from different cultures, misunderstandings can often occur and as a result, cooperation and productivity may suffer.

Consider the following example. An American manager was meeting with his fellow design team engineers, two of whom were German. As ideas floated around the table, his German colleagues quickly rejected them. The American thought the feedback was harsh and concluded that his German colleagues were rude. However, they were merely critiquing the ideas, not the individual – a distinction that the American was unable to make perhaps due to a lack of cultural intelligence. As a result, the American became wary of contributing potentially good ideas. Had the American been more culturally intelligent, he likely would have recognized the true motives behind his colleagues' remarks and thus may have been able to use those remarks to improve his ideas.

It is unclear whether the notion of cultural intelligence is separate from other forms of intelligence, such as emotional intelligence, and even whether cultural intelligence is different from cognitive ability. However, it is clear that the ability to interact well with individuals from different cultures is a key asset in today's global business environment.

*Source Based on C. Earley and E. Mosakowski, "Cultural Intelligence," Harvard Business Review, October 2004, pp 139-146*

I might surprise you that the most widely used intelligence test in hiring decisions takes only 12 minutes. It's called the Wonderlic Personnel Test. There are different forms of the tests, and each form has 50 questions. Here are a few example questions from the Wonderlic:

- When rope is selling at \$.10 a foot, how many feet can you buy for \$.60?
- Assume the first two statements are true. Is the final one:
  - 1. True, 2. false, 3. not certain?
  - a. The boy plays baseball.
  - b. All baseball players wear hats.
  - c. The boy wears a hat.

The Wonderlic is both a speed (almost nobody has time to answer every question) and power (questions get harder as you go along) test, so the average score is pretty low – about 21/50. And because it's able to provide valid information at a cheap price (\$2-\$6/applicant), more and more companies are using the Wonderlic in hiring decisions. For example, the Factory Card and Party Outlet, which has 182 stores nationwide, use the Wonderlic. So does Subway, Peoples Flowers, Security Alarm, Workforce Employment Solutions, and many others. Most companies that use the Wonderlic don't use it in place of other hiring tools like application forms or the interview. Rather, they add the Wonderlic as another source of information – in this case, because of the Wonderlic's ability to provide valid data on applicants' intelligence levels.

Interestingly, while intelligence is a big help in performing a job well, it doesn't make people happier or more satisfied with their jobs. The correlation between intelligence and job satisfaction is about zero. Why? Research suggests that although intelligent people perform better and tend to have more interesting jobs, they also are more critical in evaluating their job conditions. Thus, smart people have it better, but they also expect more.

In the past decade and a half, researchers have begun to expand the meaning of intelligence beyond mental abilities. Some researchers believe that intelligence can be better understood by breaking it down into four subparts: cognitive, social emotional, and cultural. Cognitive intelligence encompasses the aptitudes that have long been tapped by traditional intelligence tests. Social intelligence is a person's ability to relate effectively to others.

Emotional intelligence is the ability to identify, understand, and manage emotions. And cultural intelligence is awareness of cross-cultural differences and the ability to function successfully in cross-cultural situations. It's important to note that this line of inquiry – toward **multiple intelligences** – is in its infancy, and the claims made don't always match the scientific evidence. Furthermore, measuring intelligences other than cognitive intelligence has not proven to be easy. Of course, there are many cases in which so-called smart people- those with high cognitive intelligence-don't necessarily adapt well to everyday life, work well with others, or succeed when placed in leadership roles.

### Physical Abilities

To the same degree that intellectual abilities play a larger role in complex jobs with demanding information-processing requirements, specific **physical abilities** gain importance for successfully doing less-skilled and more-standardized jobs. For example, jobs in which success demands stamina, manual dexterity, leg strength, or similar talents require management to identify an employee's physical capabilities.

Exhibit 2-2	Nine Basic Physical Abilities
<b>Strength Factor</b>	
1. Dynamic strength	Ability to exert muscular force repeatedly or continuously over time
2. Trunk strength	Ability to exert muscular strength using the trunk (particularly abdominal) muscles
3. Static strength	Ability to exert force against external objects
4. Explosive strength	Ability to expend a maximum of energy in one or a series of explosive acts
<b>Flexibility Factors</b>	
5. Extent flexibility	Ability to move the trunk and back muscles as far as possible
6. Dynamic flexibility	Ability to make rapid, repeated flexing movements
<b>Other Factors</b>	
7. Body coordination	Ability to coordinate the simultaneous actions of different parts of the body
8. Balance	Ability to maintain equilibrium despite forces pulling off balance
	Ability to continue maximum effort requiring prolonged effort

9. Stamina	over time
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*Source: Adopted from HR Magazine, published by the Society for Human Resource Management, Alexandria, VA*

Research on the requirements needed in hundreds of jobs has identified nine basic abilities involved in the performance of physical tasks. These are described in Exhibit 2-2. Individuals differ in the extent to which they have each of these abilities. Not surprisingly, there is also little relationship among them: A high score on one is no assurance of a high score on others. High employee performance is likely to be achieved when management has ascertained the extent to which a job requires each of the nine abilities and to ensure that employees in that job have those abilities.

### **The Ability – Job Fit**

Our concern is with explaining and predicting the behavior of people at work. We have demonstrated that jobs make differing demands on people and that people differ in their abilities. Therefore, employee performance is enhanced when there is a high ability-job fit.

The specific intellectual or physical abilities required for adequate job performance depend on the ability requirements of the job. So, for example, airline pilots need strong spatial-visualization abilities; beach lifeguards need both strong spatial-visualization abilities and body coordination; senior executives need verbal abilities; high-rise construction workers need balance; and journalists with weak reasoning abilities would likely have difficulty meeting minimum job-performance standards. Directing attention at only the employee's abilities or only the ability requirements of the job ignores the fact that employee performance depends on the interaction of the two.

What predictions can we make when the fit is poor? As alluded to previously, if employees lack the required abilities, they are likely to fail. If you're hired as a word processor and you can't meet the job's basic keyboard typing requirements, your performance is going to be poor irrespective of your positive attitude or your high level of motivation. When the ability-job fit is out of sync because the employee has abilities that far exceed the requirements of the job, our predictions would be very different. Job performance is likely to be adequate, but there will be organizational inefficiencies and possible declines in employee satisfaction. Given that pay tends to reflect the highest skill level that employees possess, If an employee's abilities far exceed those necessary to do the job, management will paying more than it needs to. Abilities significantly above those required can also reduce the employee's job satisfaction when the employee's desire to use his or her abilities is particularly strong and is frustrated by the limitations of the job.

## **Biographical Characteristics**

As discussed in chapter 1, this textbook is essentially concerned with finding and analyzing the variables that have an impact on employee productivity, absence, turnover, deviance, citizenship, and satisfaction. The list of those variables – as shown in Exhibit 1-7 – is long and contains some complicated concepts. Many of the concepts – motivation, say, or power and politics or organizational culture – are hard to assess. It might be valuable, then, to begin by looking at factors that are easily definable and readily available; data that can be obtained, for the most part, simply from information available in an employee's personnel file. What factors would these be? Obvious characteristics would be an employee's age, gender, race, and length of service with an organization. Fortunately, there is a sizable amount of research that has specifically analyzed many of these **biographical characteristics**.

### **Age**

The relationship between age and job performance is likely to be an issue of increasing importance during the next decade. Why? There are at least three reasons. First, there is a widespread belief that job performance declines with increasing age. Regardless of whether it's true or not, a lot of people believe it and act on it. Second, as noted in



Chapter 1, is the reality that the workforce is aging. The third reason is U.S. workers today no longer have to retire at the age of 70.

What is the perception of older workers? Evidence indicates that employers hold mixed feelings. They see a number of positive qualities that older workers bring to their jobs: specifically, experience, judgment, a strong work ethic, and commitment to quality. But older workers are also perceived as lacking flexibility and as being resistant to new technology. And in a time when organizations actively seek individuals who are adaptable and open to change, the negatives associated with age clearly hinder the initial hiring of older workers and increase the likelihood that they will be let go during cutbacks. Now let's take a look at the evidence. What effect does age actually have on turnover, absenteeism, productivity, and satisfaction?

The older you get, the less likely you are to quit your job. That conclusion is based on studies of the age – turnover relationship. Of course, this shouldn't be too surprising. As workers get older, they have fewer alternative job opportunities. In addition, older workers are less likely to resign than are younger workers because their long tenure tends to provide them with higher wage rates, longer paid vacations, and more-attractive pension benefits.

It's tempting to assume that age is also inversely related to absenteeism. After all, if older workers are less likely to quit, won't they also demonstrate higher stability by coming to work more regularly? Not necessarily. Most studies do show an inverse relationship, but close examination finds that the age-absence relationship is partially a function of whether the absence avoidable absence than do younger employees. However, they have higher rates of unavoidable absence, probably due to the poorer health associated with aging and the longer recovery period that older workers need when injured.

How does age affect productivity? There is a widespread belief that productivity declines with age. It is often assumed that an individual's skills – particularly speed, agility, strength, and coordination – decay over time and that pro-reduced productivity. The evidence, however, contradicts that belief and those assumptions. For instance, during a 3-year period, a large hardware chain staffed one of its stores solely with employees over 50 and compared its results with those of five stores with younger employees. The store staffed by the over 50 employees was significantly more productive (measured in terms of sales generated against labor costs) than two of the other stores and held its own with the other three. Other reviews of the research find that age and job performance are unrelated. Moreover, this finding seems to be true for almost all types of jobs, professional and nonprofessional. The natural conclusion is that the demands of most jobs, even those with heavy manual labor requirements, are not extreme enough for any declines in physical skills attributable to age to have an impact on productivity; or, if there is some decay due to age, it is offset by gains due to experience.

Our final concern is the relationship between age and job satisfaction. On this issue, the evidence is mixed. Most studies indicate a positive association between age and satisfaction, at least up to age 60. Other studies, however, have found a U-shaped relationship. Several explanations could clear up these results, the most plausible being that these studies are intermixing professional and nonprofessional employees. When the two types are separated, satisfaction tends to continually increase among professionals as they age, whereas it falls among nonprofessionals during middle age and then rises again in the later years.

## **Gender**

Few issues initiate more debates, misconceptions, and unsupported opinions than whether women perform as well on jobs as men do. In this section, we review the research on that issue.

The evidence suggests that the best place to begin is with the recognition that there are few, if any, important differences between men and women that will affect their job performance. There are, for instance, no consistent male-female differences in problem-solving ability, analytical skills, competitive drive, motivation, sociability, or learning ability. Psychological studies have found that women are more willing to conform to authority and that men are more aggressive and more likely than women to have expectations of success, but those differences are minor. Given the significant changes that have taken place in the past 40 years in terms of increasing female participation rates in the workforce and rethinking what constitutes male and female roles, you should operate on the assumption that there is no significant difference in job productivity between men and women.

One issue that does seem to differ between genders, especially when the employee has preschool-age children, is preference for work schedules. Working mothers are more likely to prefer part-time work, flexible work schedules, and telecommuting in order to accommodate their family responsibilities.

But what about absence and turnover rates? Are women less stable employees than men? First, on the question of turnover, the evidence indicates no significant differences. Women's quit rates are similar to those for men. The research on absence, however, consistently indicates that women have higher rates of absenteeism than men do. The most logical explanation for this finding is that the research was conducted in North America, and North American culture has historically placed home and family responsibilities on the woman. When a child is ill or someone needs to stay home to wait for the plumber, it has been the woman who has traditionally taken time off from work. However, this research is undoubtedly time-bound. The historical role of the woman in caring for children and as secondary breadwinner has definitely changed in the past generation, and a large proportion of men nowadays are as interested in day care and the problems associated with child care in general as are women.

## **Race**

Race is a controversial issue. It can be so contentious that it's tempting to avoid the topic. A complete picture of individual differences in OB, however, would be incomplete without a discussion of race.

What is race? Before we can discuss how race matters in OB, first we have to reach some consensus about what race is, and that's not so easily done. Some scholars argue that it's not productive to discuss race for policy reasons (it's a divisive issue), for biological reasons (a large percentage of us are a mixture of races), or for genetic and anthropological reasons (many anthropologists and evolutionary scientists reject the concept of distinct racial categories).

Most people in the United States identify themselves according to a racial group. (However, in some countries, like Brazil, people are less likely to define themselves according to distinct racial categories). The Department of Education classifies individuals according to five racial categories: African American, Native American (American Indian/Alaskan Native), Asian/Pacific Islander, Hispanic, and White. We'll define race as the biological heritage people use to identify themselves. This definition allows each individual to define his or her race. Tiger Woods, for example, refuses to place him into a single racial category, emphasizing his multiethnic roots.

Race has been studied quite a bit in OB, particularly as it relates to employment outcomes such as personnel selection decisions, performance evaluations, pay, and workplace discrimination. Doing justice to all of this research isn't possible here, so let's summarize a few points.

First, in employment settings, there is a tendency for individuals to favor colleagues of their own race in performance evaluations, promotion decision, and pay raises. Second, there are substantial racial differences in attitudes toward affirmative action, with African Americans approving such programs to a greater degree than Whites. Third, African Americans generally fare worse than Whites in employment decisions. For example, African Americans receive lower ratings in employment interviews, are paid less, and are promoted less frequently.

The major dilemma faced by employers who use mental ability tests for selection, promotion, training, and similar personnel decisions is concerned that they may have a negative impact on racial and ethnic groups. For instance, some minority groups score, on the average, as much as 1 standard deviation lower than Whites on verbal, numerical, and spatial ability tests, meaning that only 10 percent of minority group members score above the average for Whites. However after reviewing the evidence, researchers have concluded that "despite group differences in mean test performance, there is little convincing evidence that well-constructed tests are more predictive of educational, training, or occupational performance of members of the majority group than for members of minority groups. The issue of racial differences in cognitive ability tests continues to be hotly debated.

## **Tenure**

The last biographical characteristic we'll look at is tenure. With the exception of gender and racial differences, few issues are more subject to misconceptions and speculations than the impact of seniority on job performance.

Extensive reviews of the seniority-productivity relationship have been conducted. If we define seniority as time on a particular job, we can say that the most recent evidence demonstrates a positive relationship between seniority and job productivity. So tenure, expressed as work experience, appears to be a good predictor of employee productivity.

The research relating tenure to absence is quite straightforward. Studies consistently demonstrate seniority to be negatively related to absenteeism. In fact, in terms of both frequency of absence and total days lost at work, tenure is the single most important explanatory variable.

Tenure is also a potent variable in explaining turnover. The longer a person is in a job, the less likely he or she is to quit. Moreover, consistent with research that suggests that past behavior is the best predictor of future behavior, evidence indicates that tenure on an employee's previous job is a powerful predictor of that employee's future turnover.

The evidence indicates that tenure and job satisfaction are positively related. In fact, when age and tenure are treated separately, tenure appears to be a more consistent and stable predictor of job satisfaction than is chronological age.

## Learning

All complex behavior is learned. If we want to explain and predict behavior, we need to understand how people learn. In this section, we define learning, present three popular learning theories, and describe how managers can facilitate employee learning.

### A Definition of Learning

What is **learning**? A psychologist's definition is considerably broader than the layperson's view that "it's what we did when we went to school." In actuality each of us is continuously "going to school." Learning occurs all the time. Therefore, a generally accepted definition of learning is *any relatively permanent change in behavior that occurs as a result of experience*. Ironically, we can say that changes in behavior indicate that learning has taken place and that learning is a change in behavior.

The previous definition suggests that we can see changes taking place but not the learning itself. The concept is theoretical and, hence, not directly observable.

You have seen people in the process of learning, you have seen people who behave in a particular way as a result of learning and some of you (in fact, I guess the majority of you) have "learned" at some time in your life. In other words, we infer that learning has taken place if an individual behaves, reacts, responds as a result of experience in a manner different from the way he formerly behaved.

Our definition has several components that deserve clarification. First, learning involves change. Change may be good or bad from an organizational point of view. People can learn unfavorable behaviors – to hold prejudices or to shirk their responsibilities, for example – as well as favorable behaviors. Second, the change must become ingrained. Immediate changes may be only reflexive or as a result of fatigue (or a sudden burst of energy) and thus may not represent learning. Third, some form of experience is necessary for learning. Experience may be acquired directly through observation or practice, or it may be acquired indirectly, as through reading. The crucial test still remains: Does this experience result in a relatively permanent change in behavior? If the answer is Yes, we can say that learning has taken place.

### Theories of Learning

How do we learn? Three theories have been offered to explain the process by which we acquire patterns of behavior. These are classical conditioning, operant conditioning, and social learning.

**Classical Conditioning:** Classical conditioning grew out of experiments to teach dogs to salivate in response to the ringing of a bell, conducted in the early 1900s by Russian physiologist Ivan Pavlov. A simple surgical procedure allowed Pavlov to measure accurately the amount of saliva secreted by a dog. When Pavlov presented the dog with a piece of meat, the dog exhibited a noticeable increase in salivation. When Pavlov withheld the presentation of meat and merely rang a bell, the dog did not salivate. The Pavlov proceeded to link the meat and the ringing of the bell. After repeatedly hearing the bell before getting the food, the dog began to salivate as soon as the bell rang. After a while, the dog would salivate merely at the sound of the bell, even if no food was offered. In effect, the dog had learned to respond – that is, to salivate – to the bell. Let's review this experiment to introduce the key concepts in classical conditioning.

The meat was an *unconditioned stimulus*; it invariably caused the dog to react in a specific way. The reaction that took place whenever the unconditioned stimulus occurred was called the *unconditioned response* (or the noticeable increase in salivation, in this case). The bell was an artificial stimulus, or what we call the *conditioned stimulus*. Although it was originally neutral, after the bell was paired with the meat (an unconditioned stimulus), it eventually produced a response when presented alone. The last key concept is the *conditioned response*. This describes the behavior of the dog; it salivated in reaction to the bell alone.

Using these concepts, we can summarize classical conditioning. Essentially, learning a conditioned response involves building up an association between a conditioned stimulus and an unconditioned stimulus. When the stimuli, one compelling and the other one neutral, are paired, the neutral one becomes a conditioned stimulus and, hence, takes on the properties of the unconditioned stimulus.

Classical conditioning can be used to explain why Christmas carols often bring back pleasant memories of childhood; the songs are associated with the festive holiday spirit and evoke fond memories and feelings of euphoria. In an organizational setting, we can also see classical conditioning operating. For example, at one manufacturing plant, every time the top executives from the head office were scheduled to make a visit, the plant management would clean up the administrative offices and wash the windows. This went on for year. Eventually, employees would turn on their best behavior and look prim and proper whenever the windows were cleaned – even in those occasional instances when the cleaning was not paired with a visit from the top brass. People had learned to associate the cleaning of the windows with a visit from the head office.

## Exhibit 2-3

### THE FAR SIDE® BY GARY LARSON



Unbeknownst to most students of psychology,  
Pavlov's first experiment was to ring a bell  
and cause his dog to attack Freud's cat.

Source: The Far Side © by Gary Larson. © 1993 Far Works, Inc. All rights reserved. Used with permission.

Classical conditioning is passive. Something happens and we react in a specific way. It is elicited in response to a specific, identifiable event. As such, it can explain simple reflexive behaviors. But most behavior – particularly the complex behavior of individuals in organizations – is emitted rather than elicited. That is, it's voluntary rather than reflexive. For example, employees *choose* to arrive at work on time, ask their boss for help with problems, or “goof off” when no one is watching. The learning of those behaviors is better understood by looking at operant conditioning.

**Operant Condition:** **Operant Condition** argues that behavior is a function of its consequences. People learn to behave to get something they want or to avoid something they don't want. Operant behavior means voluntary or learned behavior in contrast to reflexive or unlearned behavior. The tendency to repeat such behavior is influenced by the reinforcement or lack of reinforcement brought about by the consequences of the behavior. Therefore, reinforcement strengthens a behavior and increases the likelihood that it will be repeated.

What Pavlov did for classical conditioning, the Harvard psychologist B.F. Skinner did for operant conditioning. Skinner argued that creating pleasing consequences to follow specific forms of behavior would increase the frequency of that behavior. He demonstrated that people will most likely engage in desired behaviors if they are positively reinforced for doing so; that rewards are most effective if they immediately follow the desired response; and that behavior that is not rewarded, or is punished, is less likely to be repeated. For example, we know a professor who places a mark by a student's name each time the student makes a contribution to class discussions. Operant conditioning would argue that this practice is motivating because it conditions a student to expect a reward (earning class credit) each time she demonstrates a specific behavior speaking up in class). The concept of operant conditioning was part of Skinner's broader concept of **behaviorism**, which argues that behavior follows stimuli in a

relatively unthinking manner. In Skinner's form of radical behaviorism, concepts such as feelings, thoughts, and other states of mind are rejected as causes of behavior. In short, people learn to associate stimulus and response, but their conscious awareness of this association is irrelevant.

You see apparent illustrations of operant conditioning everywhere. For example, any situation in which it is either explicitly stated or implicitly suggested that reinforcements are contingent on some action on your part involves the use of operant learning. Your instructor says that if you want a high grade in the course you must supply correct answers on the test. A commissioned sales-person wanting to earn a sizable income finds that doing so is contingent on generating high sales in her territory. Of course, the linkage can also work to teach the individual to engage in behaviors that work against the best interests of the organization. Assume that your boss tells you that if you will work over-time during the next 3-week busy season, you'll be compensated for it at your next performance appraisal. However, when performance-appraisal time comes, you find that you are given no positive reinforcement for your overtime work. The next time your boss asks you to work overtime, what will you do? You'll probably decline! Your behavior can be explained by operant conditioning: If a behavior fails to be positively reinforced, the probability that the behavior will be repeated declines.

**Social Learning:** Individuals can also learn by observing what happens to other people and just by being told about something, as well as by direct experience. So, for example, much of what we have learned comes from watching models – parents, teachers, peers, motion picture and television performers, bosses, and so forth. This view that we can learn through both observation and direct experience is called **social-learning theory**.

Although social-learning theory is an extension of operant conditioning – that is, it assumes that behavior is a function of consequences – it also acknowledges the existence of observational learning and the importance of perception in learning. People respond to how they perceive and define consequences, not to the objective consequences themselves.

The influence of models is central to the social-learning viewpoint. Four processes have been found to determine the influence that a model will have on an individual:

1. *Attentional process.* People learn from a model only when they recognize and pay attention to its critical features. We tend to be most influenced by models that are attractive, repeatedly available, important to us, or similar to us in our estimation.
2. *Retention processes.* A model's influence will depend on how well the individual remembers the model's action after the model is no longer readily available.
3. *Motor reproduction processes.* After a person has seen a new behavior by observing the model, the watching must be converted to doing. This process then demonstrates that the individual can perform the modeled activities.
4. *Reinforcement processes.* Individuals will be motivated to exhibit the modeled behavior if positive incentives or rewards are provided. Behaviors that are positively reinforced will be given more attention, learned better, and performed more often.

### **Shaping: A Managerial Tool**

Because learning takes place on the job as well as prior to it, managers will be concerned with how they can teach employees to behave in ways that most benefit the organizational when we attempt to mold individuals by guiding their learning in graduated steps, we are **shaping behavior**.

Consider the situation in which an employee's behavior is significantly different from that sought by management. If management rewarded the individual only when he or she showed desirable responses, there might be very little reinforcement taking place, in such a case, shaping offers a logical approach toward achieving the desired behavior.

We *shape* behavior by systematically reinforcing each successive step that moves the individual closer to the desired response. If an employee who has chronically been a half-hour late for work comes in only 20 minutes late, we can reinforce that improvement. Reinforcement would increase as responses more closely approximated the desired behavior.

## Myth Or Science?

### “You Can’t Teach an Old Dog New Tricks!”

This statement is false. It reflects the widely held stereotypic that older workers have difficulties in adapting to new methods and techniques. Studies consistently demonstrate that older employees are perceived as being relatively inflexible resistant to change and less willing and able to be trained than their younger counterparts. But these perceptions are most wrong.

Evidence does indicate that older workers (typically defined as people aged 50 and over) are less confident of their learning abilities (perhaps due to acceptance of societal stereotypic). Moreover, older workers do seem to be somewhat less efficient in acquiring complex or demanding skills, and on average they are not as fast in terms of reaction time on in solving problems. That is they may take longer to train. Finally, older employees receive less support from supervisors and coworkers for engaging in learning and developmental activities. However, once trained, research indicates that older worker actually team more than their younger counterparts, and they are better at transferring what they have learned to the job.

The ability to acquire the skills, knowledge or behavior necessary to perform a job at a given level – that is trainability – has been the subject of much research. And the evidence indicates that there are differences between people in their trainability. A number of individual differences factors (such as low ability and reduced motivation) have been found to impede learning and training outcomes. However, age has not been found to influence these outcomes. In fact older employees actually benefit more from training. Still, the stereotypes persist.

**Methods of Shaping Behavior:** There are four ways in which to shape behavior: through positive reinforcement, negative reinforcement, punishment, and extinction.

Following a response with something pleasant is called *positive reinforcement*. This would describe, for instance, the boss who praises an employee for a job well done. Following a response by the termination or withdrawal of something unpleasant is called *negative reinforcement*. If your college instructor asks a question and you don’t know the answer, looking through your lecture notes is likely to preclude your being called on. This is a negative reinforcement because you have learned that looking busy through your notes prevents the instructor from calling on you. *Punishment* is causing an unpleasant condition in an attempt to eliminate an undesirable behavior. Giving an employee a 2-day suspension from work without pay for showing up drunk is an example of punishment. Eliminating any reinforced, it tends to be gradually extinguished. College instructors who wish to discourage students from asking questions in class can eliminate this behavior in their students by ignoring those who raise their hands to ask questions. Hand-raising will become extinct when it is invariably met with an absence of reinforcement.

Both positive and negative reinforcement result in learning. They strengthen a response and increase the probability of repetition. In the preceding illustrations, praise strengthens and increases the behavior of doing a good job because praise is desired. The behavior of “looking busy” is similarly strengthened and increased by its terminating the undesirable consequence of being called on by the teacher. However, both punishment and extinction weaken behavior and tend to decrease its subsequent frequency. In shaping behavior, a critical issue is the timing of reinforcements. This is an issue we’ll consider now.

But before we move on the next section, check out the Self-Assessment feature where you can assess your disciplining skills. The Self-Assessment feature is a unique learning tool that allows you to assess your knowledge,

beliefs, feelings, and actions in regard to a wide range of personal skills, abilities, and interests. You'll find one of these in most chapters.

## JOB THE NEWS

### Learning How To Reward CEOs

Take a look at the compensation of top corporate CEOs from the Mid-1990s through 2005. They typically follow a common pattern: Their base salary is less the \$1million but they earn tens-of-millions from cashing in stock options. This pattern is easily explained once you understand the U.S. tax code.

Prior to 1992, most of an executive's compensation was in base salary. But in that year, the U.S. Congress changed the tax code so companies could only deduct, as a business expense, salaries up to \$1million. This was done in response to the public outcry over the huge salaries that CEOs were making.

CEOs and the top executives were not about to take huge cuts in pay. So boards of directors merely changed the way that they paid their top people. Beginning in the mid-1990s, boards lowered base salaries and began handing out large grants of stock options to executives. Importantly, because of arcane accounting rules, these options actually cost the companies nothing and never directly affected profits.

Corporate reformers failed to consider how stock options would change CEO behavior. Options allow recipients to buy company stock at specific price. So option holders make more money as the price of a company's stock goes up. When the bulk of your compensation becomes tied to options, which are increasingly valuable as a stock's price appreciates, you suddenly have a powerful incentive to drive your stock higher by any means, if only for a short time.

Relying on options as the primary form of executive compensation encourages all kinds of questionable practices that will inflate revenues and cover up costs. One shouldn't be totally surprised, therefore, that Adelphia Communications' executives inflated numbers and hid personal loans; that Xerox executives overstated their company's revenues; that HealthSouth's CEO instructed company officials to circumvent a large write-off that would seriously reduce earnings and batter the company's stock; or that senior managers at Enron grossly manipulated sales and expenses to make their company look highly profitable when it was actually losing money. All these executives' compensation packages were heavy with options. Their actions were heavy with options. Their action consistent with a reward system that provided huge payoffs for executives who could make their companies look profitable for at least long enough for them to execute their stock options and make hundreds of millions of dollars for themselves.

Meanwhile, Krispy Kreme's CEO – Stephen Cooper – is paid by the hour. That's right, he's paid \$760 an hour for running the company. You might think that's quite a wage rate, but his \$1.52 million salary (based on a 40-hour work-week) pales in comparison to the \$475 million Bernie Ebbers or the \$325 million Ken Lay earned.

Based on G. Colvin, "Will CEO's Find Their Inner Choirboy?" *Forbes*, April 28, 2003, p.45; and A. Sloan, "A New Way on CEO Pay," *Newsweek*, February 7, 2005.

**Schedules of Reinforcement:** The two major types of reinforcement schedules are *continuous* and *intermittent*. A **continuous reinforcement** schedule reinforces the desired behavior each and every time it is demonstrated. Take, for example, the case of someone who historically has had trouble arriving at work on time. Every time he is not tardy his manager might compliment him on his desirable behavior. In an intermittent schedule, on the other hand, not every instance of the desirable behavior is reinforced, but reinforcement is given often enough to make the behavior worth repeating. This latter schedule can be compared to the workings of a slot machine, which people will continue to play even when they know that it is adjusted to give a considerable return to the casino. The intermittent payoffs occur just often enough to reinforce the behavior of slipping in coins and pulling the handle. Evidence indicates that the intermittent, or varied form of reinforcement tends to promote more resistance to extinction than does the continuous form.

An **intermittent reinforcement** can be of a ratio or interval type. *Ratio schedules* depend on how many responses the subject makes. The individual is reinforced after giving a certain number of specific types of behavior. *Interval schedules* depend on how much time has passed since the previous reinforcement. With interval schedules,



the individual is reinforced on the first appropriate behavior after a particular time has elapsed. Reinforcement can also be classified as fixed or variable.

When rewards are spaced at uniform time intervals, the reinforcement schedule is of the **fixed-interval** type. The critical variable is time, and it is held constantly. This is the predominant schedule for most salaried workers in North America. When you get your paycheck on a weekly, semimonthly, monthly, or other predetermined time basis, you're rewarded on a fixed-interval reinforcement schedule.

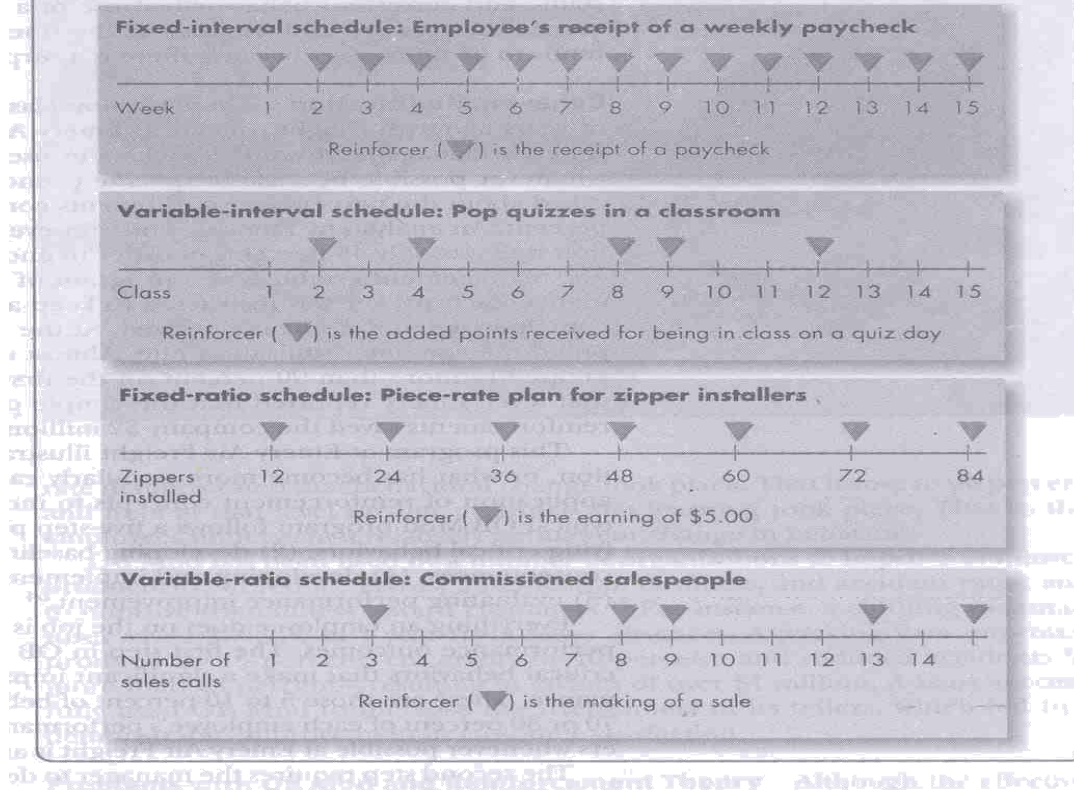
If rewards are distributed in time so that reinforcements are unpredictable, the schedule is of the **variable-interval** type. When an instructor advises her class that pop quizzes will be given during the term (the exact number of which is unknown to the students) and the quizzes will account for 20 percent of the term grade, she is using a variable-interval schedule. Similarly, a series of randomly timed unannounced visits to a company office by the corporate audit staff is an example of a variable-interval schedule.

In a **fixed-ratio** schedule, after a fixed or constant number of responses are given, a reward is initiated. For example, a piece-rate incentive plan is a fixed-ratio schedule; the employee receives a reward based on the number of work pieces generated. If the piece rate for a zipper installer in a dressmaking factory is \$5.00 a dozen, the reinforcement (money in this case) is fixed to the number of zippers sewn into garments. After every dozen is sewn in, the installer has earned another \$5.00.

When the reward varies relative to the behavior of the individual, he or she is said to be reinforced on a **variable-ratio** schedule. Salespeople on commission are examples of individuals on such a reinforcement schedule. On some occasions, they may make a sale after only 2 calls on a potential customer. On other occasions, they might need to make 20 or more calls to secure a sale. The reward, then, is variable in relation to the number of successful calls the salesperson makes. Exhibit 2-4 summarizes the schedules of reinforcement.

<b>Exhibit 2-4</b>		<b>Schedules of Reinforcement</b>	
<b>Reinforcement Schedule</b>	<b>Nature of Reinforcement</b>	<b>Effect on Behavior</b>	<b>Example</b>
Continuous	Reward given after each desired behavior	Fast learning of new behavior but rapid extinction	Compliments
Fixed-interval	Reward given at fixed time intervals	Average and irregular performance with rapid extinction	Weekly paychecks
Variable-interval	Reward given at variable time intervals	Moderately high and stable performance with slow extinction	Pop quizzes
Fixed ratio	Reward given at fixed amounts of output	High and stable performance attained quickly but also with rapid extinction	Piece-rate pay
Variable-ratio	Reward given at variable amounts of output	Very high performance with slow extinction	Commissioner sales

## Exhibit 2-5 Intermittent Schedules of Reinforcement



**Reinforcement Schedules and Behavior:** Continuous reinforcement schedules can lead to early satiation, and under this schedule behavior tends to weaken rapidly when reinforcers are withheld. However, continuous reinforcers are appropriate for newly emitted, unstable, or low-frequency responses. In contrast, intermittent reinforcers preclude early satiation because they don't follow every response. They are appropriate for stable or high-frequency responses.

In general, variable schedules tend to lead to higher performance than fixed schedules (see Exhibit 1-5). For example, as noted previously, most employees in organizations are paid on fixed-interval schedules. But such a schedule does not clearly link performance and rewards. The rewards are given for time spent on the job rather than for a specific response (performance). In contrast, variable-interval schedules generate high rates of response and more stable and consistent behavior because of a high correlation between performance and reward and because of the uncertainty involved – the employee tends to be more alert because there is a surprise factor.

**Behavior Modification:** There is now a classic study that took place a number of years ago with freight packers at Emery Air Freight (not part of FedEx). Emery's management wanted packers to use freight containers for shipments whenever possible because of specific economic savings. When packers were asked about the percentage of shipments contained, the standard reply was 90 percent. An analysis by Emery found, however, that the actual container utilization rate was only 45 percent. In order to encourage employees to use containers, management established a program of feedback and positive reinforcements. Each packer was instructed to keep a checklist of daily packings, both containerized and noncontainerized. At the end of each day, the packer computed the container utilization rate. Almost unbelievably, container utilization jumped to more than 90 percent on the first day of the program of feedback and positive reinforcements saved the company \$2 million over a 3-year period.

This program at Emery Air Freight illustrates the use of behavior modification, or what has become more popularly called **OB Mod**. It represents the application of reinforcement concepts to individuals in the work setting.

The typical OB Mod program follows a five-step problem-solving model: (1) identifying critical behaviors; (2) developing baseline data; (3) identifying behavioral consequences; (4) developing and implementing an intervention strategy; and (5) evaluating performance improvement.

Everything an employee does on the job is not equally important in terms of performance outcomes. The first step in OB Mod, therefore, is to identify the critical behaviors that make a significant impact on the employee's job performance. These are those 5 to 10 percent of behaviors that may account for up to 70 or 80 percent of each employee's performance. Freight packers using containers whenever possible at Emery Air Freight is an example of a critical behavior.

The second step requires the manager to develop some baseline performance data. This is obtained by determining the number of times the identified behavior is occurring under present conditions. In our freight-packing example at Emery, this would have revealed that 45 percent of all shipments were containerized.

The third step is to perform a functional analysis to identify the behavioral contingencies or consequences of performance. This tells the manager the antecedent cues that emit the behavior and the consequences that are currently maintaining it. At Emery Air Freight, social norms and the greater difficulty in packing containers were the antecedent cues. This encouraged the practice of packing items separately. Moreover, the consequences for continuing the behavior, prior to the OB Mod intervention, were social acceptance and escaping more demanding work.

Once the functional analysis is complete, the manager is ready to develop and implement an intervention strategy to strengthen desirable performance behaviors and weaken undesirable behaviors. The appropriate strategy will entail changing some elements of the performance-reward linkage-structure, processes, technology, groups, or the task – with the goal of making high-level performance more rewarding. In the Emery example, the work technology was altered to require the keeping of a checklist. The checklist plus the computation, at the end of the day, of a container-utilization rate acted to reinforce the desirable behavior of using containers.

The final step in OB Mod is to evaluate performance improvement. In the Emery intervention, the immediate improvement in the container-utilization rate demonstrated that behavioral change took place. That it rose to 90 percent and held at that level further indicates that learning took place. That is the employees underwent a relatively permanent change in behavior.

OB Mod has been used by a number of organizations to improve employee productivity; to reduce errors, absenteeism, tardiness, and accident rates, and to improve friendliness toward customers. For instance, a clothing manufacturer saved \$60,000 in 1 year from fewer absences. A packing firm improved productivity 16 percent, cut errors by 40 percent, and reduced accidents by more than 43 percent – resulting in savings of over \$1million. A bank successfully used OB Mod to increase the friendliness of its tellers, which led to a demonstrable improvement in customer satisfaction.

**Problems with OB Mod and Reinforcement Theory:** Although the effectiveness of reinforcements in the form of rewards and punishments has a lot of support in the literature, that doesn't necessarily mean that Skinner was right or that OB Mod is the best way to reward people. What if the power of reinforcements isn't due to operant conditioning or behaviorism? One problem with behaviorism is research showing that thoughts and feelings immediately follow environmental stimuli, even those explicitly meant to shape behavior. This is contrary to the assumptions of behaviorism and OB Mod, which assume that people's innermost thoughts and feelings in response to the environment are irrelevant..

Think about praise from a supervisor. For example, assume your course instructor compliments you for asking a good question. A behaviorist would argue that this shapes our behavior because we find the stimulus (the compliment) pleasant and therefore respond by attempting to ask other questions that will generate the same reward. However, imagine, for example, that you had to weigh the pleasant feelings produced by your professor's praise against the snickers of jealous classmates who whispered "brown noser." Your choice of what to do would likely be dictated by weighing the value of these stimuli, which may be a rather complex mental process involving thinking and feeling.

Also, is it really shaping if the compliment was given without any intention of molding behavior? Isn't it perhaps overly restrictive to view all stimuli as motivated to obtain a particular response? Is the only reason we tell someone we love them because we wish to obtain a reward or to mold their behavior?

Because of these problems, among others, operant conditioning and behaviorism have been superseded by other approaches that emphasize cognitive processes. There is no denying, though, the contribution of these theories to our understanding of human behavior.

## Summary and Implications for Managers

This chapter looked at three individual variables – ability, biographical characteristics, and learning. Let's now try to summarize what we found and consider to their importance for the manager who is trying to understand organizational behavior.

**Ability:** Ability directly influences an employee's level of performance and satisfaction through the ability-job fit. Given management's desire to get a compatible fit, what can be done?

First, an effective selection process will improve the fit. A job analysis will provide information about jobs currently being done and the abilities that individuals need to perform the jobs adequately. Applicants can then be tested, interviewed, and evaluated on the degree to which they possess the necessary abilities.

Second, promotion and transfer decisions affecting individuals already in the organization's employ should reflect the abilities of candidates. As with new employees, care should be taken to assess critical abilities that incumbents will need in the job and to match those requirements with the organization's human resources.

Third, the fit can be improved by fine-tuning the job to better match an incumbent's abilities. Often modifications can be made in the job that while not having a significant impact on the job's basic activities, better adapts it to the specific talents of a given employee. Examples would be to change some of the equipment used or to reorganize tasks within a group of employees.

**Biographical Characteristics:** Biographical characteristics are readily observable to managers. However, just because they're observable doesn't mean they should be explicitly used in management decisions.

**Learning:** Any observable change in behavior is prima facie evidence that learning has taken place.

We found that positive reinforcement is a powerful tool for modifying behavior. By identifying and rewarding performance-enhancing behaviors, management increases the likelihood that they will be repeated. Our knowledge about learning further suggests that reinforcement is a more effective tool than punishment. Although punishment eliminates undesired behavior more quickly than negative reinforcement does, punished behavior tends to be only temporarily suppressed rather than permanently changed. And punishment may produce unpleasant side effects such as lower morale and higher absenteeism or turnover. In addition, the recipients of punishment tend to become resentful of the punisher. Managers, therefore, are advised to use reinforcement rather than punishment.

## **Attitudes and Job Satisfaction**

After studying this chapter, you should be able to:

1. Contrast the three components of an attitude
2. Identify the role consistent plays in attitudes
3. Summarize the relationship between attitudes and behavior
4. Discuss similarities and differences between job satisfaction and the other job attitudes discussed
5. Summarize the main cause of job satisfaction
6. Identify four employee responses to dissatisfaction

## **LEARNING OBJECTIVES**

## VSP: Putting Employees' Job Satisfaction First

VSP is the largest provider of eye care benefits in the United States. It has contracts with 20,000 employers and provides eye care benefits to their 37 million employees and dependents. The majority of VSP's staff is located at the company's headquarters, near Sacramento, California, but it also has people working at a call center in Ohio and at 25 regional offices around the United States.

In spite of increased competition, VSP has grown and prospered. In the past decade, for instance, its workforce has nearly tripled, from 868 to 2,100 employees. To ensure that it's meeting the needs of this growing labor force, VSP relies on regular surveys of employee satisfaction.

VSP's internal human resources group, led by Elaine Leuchars (see photo), annually surveys every employee in the company – one-fourth of the staff each quarter. In addition, the company uses an outside consulting firm to conduct an all-employee survey every other year. Together, these surveys provide Leuchars and the VSP executive team with a reading on the company's "temperature" and insights into areas that can be improved. When these surveys indicate a negative trend in a division or department, focus groups are created to gain more insight into the problem and to get employees input on suggestions for improvement. VSP's human resource group then offers assistance in creating specific programs to make these improvements.

Leuchars believes that conducting regular surveys of employee attitudes conveys an important message to VSP employees: the company wants to hear what they have to say and values their opinions. Moreover, the fact that the company actively uses this information to improve the workplace has paid dividends. In the past 5 years, overall employee satisfaction responses of good, very good, and excellent have risen from 93 percent to 98 percent. And during this same period, annual turnover has declined from 23 percent to 12 percent. VSP has also recently been on Fortune magazine's list of the "100 Best Companies to Work For" for 3 years in a row.

As we see in the case of VSP, it is important that companies monitor employee attitudes. In this chapter, we look at attitudes, their link to behavior, and how employees' satisfaction or dissatisfaction with their jobs impacts the workplace.

## Attitudes

**Attitudes** are evaluative statements – either favorable or unfavorable – concerning objects, people, or events. They reflect how one feels about something. When I say "I like my job," "I am expressing my attitude about work.

Attitudes are complex. If you ask people about their attitude toward religion, George W. Bush, or the organization they work for, you may get a simple response, but the reasons underlying the response are probably complex. In order to fully understand attitudes, we need to consider their fundamental properties. In the material that follows, we'll answer six questions about attitudes that will help you understand them better:

1. What are the main components of attitudes?
2. How consistent are attitudes?
3. Does behavior always follow from attitudes?
4. What are the major job attitudes?
5. How are employee attitudes measured?
6. What is the importance of attitudes to workplace diversity?

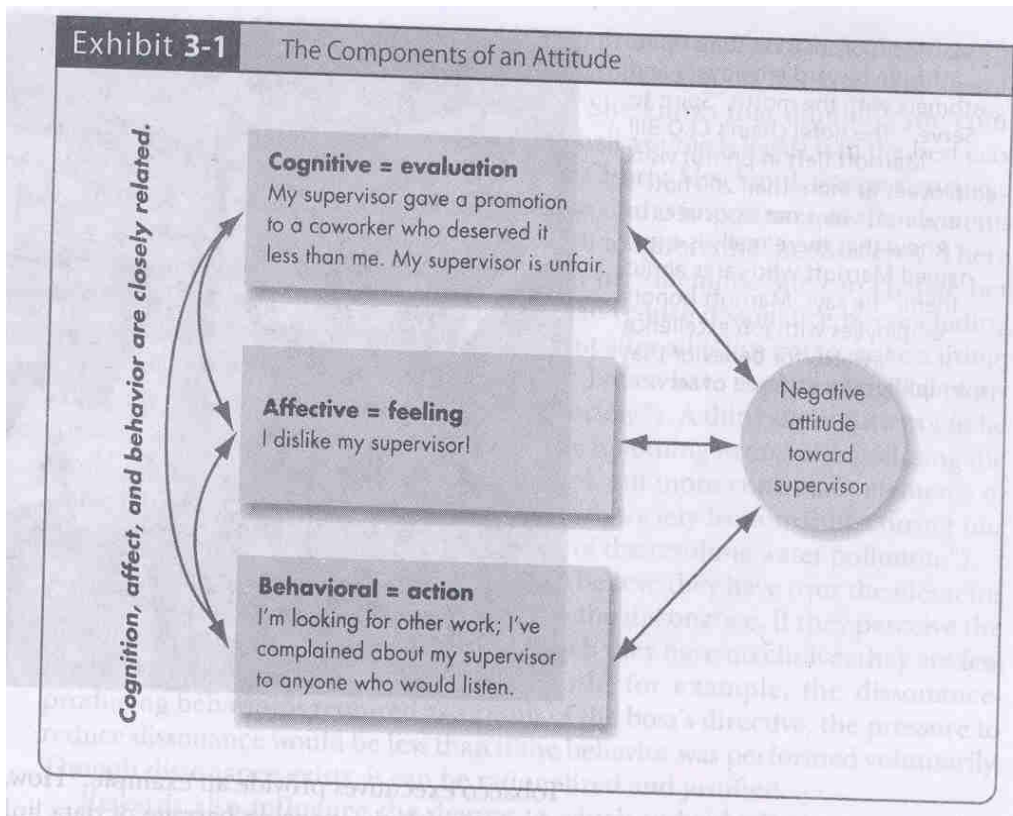
## What are the Main components of Attitudes?

Typically, researchers have assumed that attitudes have three components: cognition, affect, and behavior. Let's look at each of these components.

The belief that "discrimination is wrong" is an evaluative statement. Such an opinion is the **cognitive component** of an attitude. It sets the stage for the more critical part of an attitude – its **affective component**. Affect is the emotional or feeling segment of an attitude and is reflected in the statement "I don't like Jon because he discriminates against minorities." Finally, and we'll discuss this issue at considerable length later in this section, affect can lead to behavioral outcomes. The **behavioral component** of an attitude refers to an intention to behave in a certain way toward someone or something. So, to continue our example, I might choose to avoid Jon because of my feelings about him.

Viewing attitudes as made up of three components – cognition, affect, and behavior – is helpful in understanding their complexity and the potential relationship between attitudes and behavior. Keep in mind that these components are closely related. In particular, in many ways cognition and affect are inseparable. For example, imagine that you concluded that someone had just treated you unfairly. Aren't you likely to have feelings about that, occurring virtually instantaneously with the thought? Thus, cognition and affect are intertwined.

Exhibit 3-1 illustrates how the three components of an attitude are related. In this example, an employee didn't get a promotion he thought he deserved; a coworker got it instead. The employee's attitude toward his supervisor is illustrated as follows: cognition (the employee thought he deserved the promotion), affect (the employee strongly dislikes his supervisor), and behavior (the employee is looking for another job). As we previously noted, although we often think that cognition causes affect which then causes behavior, in reality these components are often difficult to separate.



In organizations, attitudes are important because of their behavioral component. If workers believe, for example, that supervisors, auditors, bosses, and time-and-motion engineers are all in conspiracy to make employees

work harder for the same or less money, It makes sense to try to understand how these attitudes were formed, their relationship to actual job behavior, and how they might be changed.

## How Consistent Are Attitudes?

Did you ever notice how people change what they say so it doesn't contradict what they do? Perhaps a friend of yours has consistently argued that the quality of American cars isn't up to that of the import brands and that he'd never own anything but a Japanese or German car. But his dad gives him a late-model Ford Mustang, and suddenly American cars aren't so bad. Or, when going through sorority rushes, a new freshman believes that sororities are good and that pledging a sorority is important. If she fails to make a sorority, however, she may say, "I recognized that sorority life isn't all it's cracked up to be, anyway."

Research has generally concluded that people seek consistency among their attitudes and between their attitudes and their behavior. This means that individuals seek to reconcile divergent attitudes and align their attitudes and behavior so they appear rational and consistent. When there is an inconsistency, forces are initiated to return the individual to an equilibrium state in which attitudes and behavior are again consistent. This can be done by altering either the attitudes or the behavior, or by developing a rationalization for the discrepancy.

Tobacco executives provide an example. How, you might wonder, do these people cope with the ongoing barrage of data linking cigarette smoking and negative health outcomes? They can deny that any clear caution between smoking and cancer, for instance, has been established. They can brainwash themselves by continually articulating the benefits of tobacco; they can acknowledge the negative consequences of smoking but rationalize that people are going to smoke and that tobacco companies merely promote freedom of choice. They can accept the research evidence and begin actively working to make more healthy cigarettes or at least reduce their availability to more vulnerable groups, such as teenagers. Or they can quit their job because the dissonance is too great.

Can we also assume from this consistency principle that an individual's behavior can always be predicted if we know their attitude on a subject? If Mr. Jones views the company's pay level as too low, will a substantial increase in his pay change his behavior, that is, make him work harder? The answer to this question is, unfortunately, more complex than merely a "Yes" or "No".

In the late 1950s, Leon Festinger proposed the theory of cognitive dissonance. This theory sought to explain the linkage between attitudes and behavior. Dissonance means an inconsistency. Cognitive dissonance refers to any incompatibility that an individual might perceive between two or more attitudes, or between behavior and attitudes. Festinger argued that any form of inconsistency is uncomfortable and that individuals will attempt to reduce the dissonance and, hence, the discomfort. Therefore, individuals will seek a stable state, in which there is a minimum of dissonance.

No individual, of course, can completely avoid dissonance. You know that cheating on your income tax is wrong, but you "fudge" the numbers a bit every year and hope you're not audited. Or you tell your children to floss their teeth every day, but you don't. So how do people cope? Festinger would propose that the desire to reduce dissonance would be determined by the *importance* of the elements creating the dissonance, the degree of *influence* the individual believes he or she has over the elements, and the *rewards* that may be involved in dissonance.

If the elements creating the dissonance are relatively unimportant, the pressure to correct this imbalance will be low. However, say that a corporate manager – Mrs. Smith – believes strongly that no company should pollute the air or water. Unfortunately, Mrs. Smith, because of the requirements of her job, is placed in the position of having to make decisions that would trade off her company's profitability against her attitudes on pollution. She knows that dumping the company's sewage into the local river (which we shall assume is legal) is in the best economic interest of her firm. What will she do? Clearly, Mrs. Smith is experiencing a high degree of cognitive dissonance. Because of the importance of the elements in the example, we cannot expect Mrs. Smith to ignore the inconsistency. There are several paths she can follow to deal with her dilemma. She can change her behavior (stop polluting the river). Or she can reduce dissonance by concluding that the dissonant behavior is not so important after all ("I've got to make a living, and in my role as a corporate decision maker, I often have to place the good of my company above that of the environment or society"). A third alternative would be for Mrs. Smith to change her



attitude (“There is nothing wrong with polluting the river”). Still another choice would be to seek out more consonant elements to outweigh the dissonant one (the benefits to society from manufacturing our products more than offset the cost to society of the resulting water pollution”).

The degree of influence that individuals believe they have over the elements will have an impact on how they will react to the dissonance. If they perceive the dissonance to be due to something over which they have no choice, they are less likely to be receptive to attitude change. If, for example, the dissonance producing behavior is required as a result of the boss’s directive, the pressure to reduce dissonance would be less than if the behavior was performed voluntarily. Though dissonance exists, it can be rationalized and justified.

Rewards also influence the degree to which individuals are motivated to reduce dissonance. High rewards accompanying high dissonance tend to reduce the tension inherent in the dissonance. The rewards act to reduce dissonance by increasing the consistency side of the individual’s balance sheet.

These moderating factors suggest that just because individuals experience dissonance they will not necessarily move directly toward reducing it. If the issues underlying the dissonance are of minimal importance, if individuals perceive that the dissonance is externally imposed and is substantially uncontrollable by them, or if rewards are significant enough to offset the dissonance, the individual will not be under great tension to reduce the dissonance.

What are the organizational implications of the theory of cognitive dissonance? It can help to predict the propensity to engage in attitude and behavioral change. For example, if individuals are required by the demands of their job to say or do things that contradict their personal attitude, they will tend to modify their attitude in order to make it compatible with the cognition of what they have said or done. In addition, the greater the dissonance – after it has been moderated by importance, choice, and reward factors – the greater the pressures to reduce it.

## Does Behavior Always Follow from Attitudes?

We have mentioned that attitudes affect behavior. Early research on attitudes assumed that they were causally related to behavior; that is, the attitudes that people hold determine what they do. Common sense, too, suggests a relationship. Isn’t it logical that people watch television programs that they say they like or that employees try to avoid assignments they find distasteful?

However, in the late 1960s, this assumed relationship between attitudes and behavior was challenged by a review of the research. Based on an evaluation of a number of studies that investigated the attitudes-behavior relationship, the reviewer concluded that attitudes were unrelated to behavior or, at best, only slightly related. More recent research has demonstrated that attitudes significantly predict future behavior and confirmed Festinger’s original belief that the relationship can be enhanced by taking moderating variables into account.

**Moderating Variables:** The most powerful moderators of the attitudes behavior relationship have been found to be the *importance* of the attitude, its *specificity*, its accessibility, whether there exist social pressures, and whether a person has *direct experience* with the attitude.

Important attitudes are ones that reflect fundamental values, self-interest, or identification with individuals or groups that a person values. Attitudes that individuals consider important tend to show a strong relationship to behavior. The more specific the attitude and the more specific the behavior, the stronger the link between the two. For instance, asking someone specifically about her intention to stay with the organization for the next 6 months is likely to better predict turnover for that person than if you asked her how satisfied she was with her pay.

Attitudes that are easily remembered are more likely to predict behavior than attitudes that are not accessible in memory. Interestingly, you’re more likely to remember attitudes that are frequently expressed. So the more you talk about your attitude on a subject, the more you’re likely to remember it, and the more likely it is to shape your behavior

Discrepancies between attitudes and behavior are more likely to occur when social pressures to behave in certain ways hold exceptional power. This tends to characterize behavior in organizations. This may explain why an employee who holds strong anti-union attitudes attends pro-union organizing meetings; or why tobacco executives, who are not smokers themselves and who tend to believe the research linking smoking and cancer, don't actively discourage others from smoking in their offices.

Finally, the attitude – behavior relationship is likely to be much stronger if an attitude refers to something with which the individual has direct personal experience. Asking college students with no significant work experience how they would respond to working for an authoritarian supervisor is far less likely to predict actual behavior than asking that same question of employees who have actually worked for such an individual.

**Self-Perception Theory:** Although most attitudes-behavior studies yield positive results, researchers have achieved still higher correlations by pursuing another direction – looking at whether or not behavior influences attitudes. This view, called **self-perception theory**, has generated some encouraging finding. Let's briefly review the theory.

When asked about an attitude toward some object, individuals often recall their behavior relevant to that object and then infer their attitude from their past behavior. So if an employee was asked her feelings about being a training specialist at Marriott, she would likely think, "I've had this same job with Marriott as a trainer for 10 years. Nobody forced me to stay on this job. So I must like it!" Self-perception theory, therefore, argues that attitudes are used, after the fact, to make sense out of an action that has already occurred rather than as devices that precede and guide action. And contrary to cognitive dissonance theory, attitudes are just casual verbal statements. When people are asked about their attitudes and they don't have strong convictions or feelings, self-perception theory says they tend to create plausible answers.

Self-perception theory has been well supported. While the traditional attitude-behavior relationship is generally positive, the behavior-attitude relationship is just as strong. This is particularly true when attitudes are vague and ambiguous. When you have had few experiences regarding an attitude issue or have given little previous thought to it, you'll tend to infer your attitudes from your behavior. However, when your attitudes have been established for a while and are well defined, those attitudes are likely to guide your behavior.

## What Are the Major Job Attitudes?

A person can have thousands of attitudes, but OB focuses our attention on a very limited number of work-related attitudes. These work-related attitudes tap positive or negative evaluations that employees hold about aspect of their work environment. Most of the research in OB has been concerned with three attitudes: job satisfaction, job involvement, and organizational commitment. A few other attitudes are attracting attention from researchers, including perceived organizational support and employee engagement; we'll also briefly discuss these.

**Job Satisfaction:** The term **job satisfaction** can be defined as a positive feeling about one's job resulting from an evaluation of its characteristics. A person with a high level of job satisfaction holds positive feelings about the job, while a person who is dissatisfied holds negative feelings about the job. When people speak of employee attitudes, more often than not they mean job satisfaction. In fact, the two are frequently used interchangeable. Because of the high importance OB researchers have given to job satisfaction, we'll review this attitude in considerable detail later in this chapter.

**Job Involvement:** Although much less studied than job satisfaction, a related concept is job involvement. Job involvement measures the degree to which people identify psychologically with their job and consider their perceived performance level important to self-worth. Employees with a high level of job involvement strongly identify with and really care about the kind of work they do. A closely related concept is psychological empowerment, which is employees' beliefs in the degree to which they impact their work environment, their competence, the meaningfulness of their job, and the perceived autonomy in their work. For example, one study of nursing managers in Singapore found that good leaders empower their employees by involving them in decisions, making them feel that their work is important, and giving them discretion to "do their own thing."

High levels of job involvement and psychological empowerment are positively related to organizational citizenship and job performance. In addition, high job involvement has been found to be related to fewer absences and lower resignation rates.

**Organizational Commitment:** The third job attitude we will discuss is organizational commitment, which is defined as a state in which an employee identifies with a particular organization and its goals and wishes to maintain membership in the organization. So, high job involvement means identifying with one's employing organization.

There are three separate dimensions to organizational commitment.

1. **Affective Commitment** – an emotional attachment to the organization and a belief in its values. For example, a Petco employee may be affectively committed to the company because of its involvement with animals.
2. **Continuance Commitment** – the perceived economic value of remaining with an organization compared to leaving it. An employee may be committed to an employer because she is paid well and feels it would hurt her family to quit.
3. **Normative Commitment** – an obligation to remain with the organization for moral or ethical reason. For example, an employee who is spearheading a new initiative may remain with an employer because he feels it would "leave the employer in a lurch" if he left.

## JOB

### Chinese Employees and Organizational Commitment

ARE EMPLOYEES FROM DIFFERENT CULTURES COM – committed to their organizations in similar ways? A 2003 study explored this question and compared the organizational commitment of Chinese employees to the commitment of Canadian and South Korean workers. Although results revealed that the three types of commitment – normative, continuance, and affective are present. In all three cultures, results also showed that there are some differences among the three countries in how important each type of commitment is.

Normative commitment, an obligation to remain with the organization for moral or ethical reasons, was higher in the Chinese sample of employees than in the Canadian and South Korean sample. Affective commitment, an emotional attachment to the organization and a belief in its values was also stronger in China compared to Canada and South Korea, Chinese culture may explain why. The Chinese emphasize loyalty to one's group, and in this case one's group may be the organization that one works for, so employees may feel a certain loyalty from the start and may become more emotionally attached as their time with the organization grows. To the extent that the Chinese view their organization as part of their group and become emotionally attached to that group, they will be more committed to their organization. Perhaps as a result of this emphasis on loyalty, the normative commitment of Chinese employees strongly predicted intentions to maintain employment with the organization.

Continuance commitment, the perceived economic value of remaining with an organization compared to leaving it, was lower in the Chinese sample than in the Canadian and South Korean sample. One reason for the lower degree of continuance commitment is that Chinese workers value loyalty towards the group more than individual concerns.

It appears that although all three countries experience normative, continuance, and affective commitment, the degree to which each form of commitment is important differs across countries.

Source: Based on Y. Chenge and M.S. Stockdale, "The Validity of the Three – component Model of Organizational Commitment in a Chinese Context," *Journal of Vocational Behavior*, June 2003, pp.465-489

There appears to be a positive relationship between organizational commitment and job productivity, but the relationship is modest. And, as with job involvement, the research evidence demonstrates negative relationships between organizational commitment and both absenteeism and turnover. In general, it seems that affective commitment is more strongly related to organizational outcomes like performance and turnover than the other two commitment dimensions. One study found that affective commitment was a significant predictor of various outcomes (perception of task characteristics, career satisfaction, and intent to leave) in 72 percent of the cases, compared to only 36 percent for normative commitment and 7 percent for continuance commitment. The weak results for continuance commitment make sense in that it really isn't a strong commitment at all. Rather than an allegiance (affective commitment) or an obligation (normative commitment) to an employer, a continuance

commitment describes an employee who is “tethered” to an employer simply because there isn’t anything better available.

There is reason to believe that the concept of commitment may be less important to employers and employees than it once was. The unwritten loyalty contract that existed 30 years ago between employees and employers has been seriously damaged, and the notion of employees staying with a single organization for most of their career has become increasingly obsolete. As such, “measures of employee – firm attachment, such as commitment, are problematic for new employment relations. This suggests that *organizational commitment* is probably less important as a work-related attitude than it once was. In its place we might expect something akin to *occupational* commitment to become a more relevant variable because it better reflects today’s fluid workforce.

**Other Job Attitudes:** Perceived organizational support (POS) is the degree to which employees believe the organization values their contribution and cares about their well-being (for example, an employee believes that his organization would accommodate him if he had a child-care problem or would forgive an honest mistake on his part). Research shows that people perceive their organization as supportive when rewards are deemed fair, when employees have a voice in decisions, and when their supervisors are seen as supportive.

A very new concept is **employee engagement**, which can be defined as individual’s involvement with, satisfaction with, and enthusiasm for, the work they do. For example, one might ask employees about the availability of resources and the opportunities to learn new skills, whether they feel their work is important and meaningful, and whether their interactions with their coworkers and supervisors were rewarding. A recent study of nearly 8,000 business units in 36 companies found that business units whose employees had high-average levels of engagement had higher levels of customer satisfaction, were more productive, had higher profits, and had lower levels of turnover and accidents. Because the concept is so new, we don’t know how engagement relates to other concepts like job satisfaction, organizational commitment, job involvement, or intrinsic motivation to do one’s job well.

Engagement may be broad enough that it captures the intersection of these variables. In other words, engagement may be what these attitudes have in common.

**Are These Job Attitudes Really All That Distinct?** You might wonder whether these job attitudes are really distinct. After all, if people feel deeply involved in their job (high job involvement), isn’t probable that they like it (high job satisfaction)? Similarly, won’t people who think their organization is supportive (high perceived organizational support) also feel committed to it (strong organizational commitment)? Evidence suggests that these attitudes are highly related, perhaps to a troubling degree. For example, the correlation between perceived organizational support and affective commitment is very strong. The problem is that a strong correlation means that the variables may be redundant (so, for example, if you know someone’s affective commitment, you basically know her perceived organizational support). But why is this redundancy so troubling? Well, why have two steering wheels on a car when you only need one? Why have two concepts – going by different labels- when you only need one? This redundancy is inefficient and confusing, although we OB researchers like proposing new attitudes, often we haven’t been good at showing how each attitude compares and contrasts to the others. There is some measure of distinctiveness among these attitudes – they are not exactly the same- but they overlap greatly. The overlap may exist for various reasons, including the employee’s personality. Some people are predisposed to be positive or negative about almost everything. If someone tells you she loves her company, it may not mean a lot if she is positive about everything else in her life. Or the overlap may mean that some organizations are just eager to know someone’s level of job satisfaction, you know most of what you need to know about how the person sees the organization.

## How Are Employee Attitudes Measured?

As we have seen, knowledge of employee attitudes can be helpful to managers in attempting to predict employee behavior. But how does management get information about employee attitudes? As suggested by the chapter-opening example at VSP, the most popular method is through the use of **attitude surveys**.

The typical attitude survey presents the employee with a set of statements or questions with a rating scale indicating the degree of agreement. Some examples might include: “This organization’s wage rates are competitive with those of other organizations;” “My job makes the best use of my abilities;” and “I know what my boss expects

of me.” Ideally, the items should be tailored to obtain the specific information that management desires. An individual’s attitude score is achieved by summing up responses to the questionnaire items. These scores can then be averaged for work groups, teams, departments, divisions, or the organization as a whole.

Results from attitude surveys can frequently surprise management. For instance, managers at the Heavy-Duty Division of Springfield Remanufacturing thought everything was great. Because employees were actively involved in division decisions and profitability was the highest within the entire company, management assumed morale was high. They confirm their beliefs, they conducted a short attitude survey. Employees were asked if they agreed or disagreed with the following statements: (1) At work, your opinions count; (2) Those of you who want to be a leader in this company have the opportunity to become one; and (3) In the past 6 months, someone has talked to you about your personal development. In the survey, 43 percent disagreed with the first statement, 48 percent with the second? And 62 percent with the third. Management was astounded. How could this be? The division had been holding shop floor meetings to review the numbers every week for more than 12 years. And most of the managers had come up through the ranks. Management responded by creating a committee made up of representatives from every department in the division and all there shifts. The committee quickly found that there were lots of little things the division was doing that were alienating employees. Out of this committee came a large number of suggestions that, after implementation, significantly improved employees’ perception of their decision-making influence and their career opportunities in the division.

Using attitude surveys on a regular basis provides managers with valuable feedback on how employees perceive their working conditions. Policies and practices that management views as objective and fair may be seen as inequitable by employees in general or by certain groups of employees. If distorted perceptions lead to negative attitudes about the job and organization, it’s important for management to know about it. Why? Because, as we’ll elaborate later that employee behaviors are based on perceptions, not reality. This use of regular attitude surveys can alert management to potential problems and employees’ intentions early so that action can be taken to prevent negative repercussions.

## **What is the Importance of Attitudes to Workplace Diversity?**

Managers are increasingly concerned with changing employee attitudes to reflect shifting perspectives on racial, gender, and other diversity issue. A comment to coworker of the opposite sex that 20 years ago might have been taken as a compliment – for instance, a male telling a female colleague that he thinks her outfit is sexy – can today become a career-limiting episode. As such, organizations are investing in training to help reshape the attitudes of employees.

The majority of large U.S. employers and a substantial proportion of medium-sized and smaller ones sponsor some sort of diversity training. Some examples: Police officers in Escondido, California, receive 36 hours of diversity training each year. The Federal Aviation Administration sponsors a mandatory 8-hour diversity seminar for employees of its Western Pacific region. Denny’s restaurants put all its managers through 2 days of intensive diversity training, with each day lasting 7 to 9 hours.

What do these diversity programs look like and how do they address attitude change they almost all include a self-evaluation phase. People are pressed to examine themselves and to confront ethnic and cultural stereotypes they might hold. Then participants typically take part in group discussions or panels with representatives from diverse groups. So, for instance, a Hmong man might describe his family’s life in Southeast Asia and explain why they resettled in California; or a lesbian might describe how she discovered her sexual identity and the reaction of her friends and family when she came out.

### **JOB IN THE NEWS**

#### **Job Satisfaction Hits Record Lows**

There is increasing evidence that job satisfaction levels in the United States are dropping. It’s hard to know for sure why this is true, but some recent evidence provides some intriguing suggestions. This decline is found among workers of all ages, across all income brackets, and in all regions of the country.

What are the strongest areas of dissatisfaction? Only one in five employees is satisfied with his

company's promotions and bonus plans. Surprisingly, satisfaction has dropped the most among those making highest incomes (although they still have somewhat higher satisfaction than those with relatively low earnings).

But why are so many Americans unhappy at work? One reason may be that many companies are downsizing, leaving the workers overburdened. Downsizing also lowers the morale of layoff survivors. Why? Because not only are the survivors saddled with the duties of their coworkers but they often miss their coworkers and also wonder if they'll be next.

**Based on: "Special Consumer Survey Report: Job Satisfaction," The Conference Board – September 2003, Executive Action Report #68; and T.D. Allen, D.M. Freeman, and J.E.A. Russell, "Survivor Reactions to Organizational Downsizing: Does Time Ease the Pain?" Journal of Occupational and Organizational Psychology, June 2001, pp.145-164**

Additional activities designed to change attitudes include arranging for people to do volunteer work in community or social service centers in order to meet face to face with individuals and groups from diverse backgrounds and using exercises that let participants feel what it's like to be different. For example, when people participate in the exercise Blue Eyes-Brown Eyes, in which people are segregated and stereotyped according to their eye color, participants see what it's like to be judged by something over which they have no control. Evidence suggests this exercise reduces negative attitudes toward individuals different from participants.

## Job Satisfaction

We have already discussed job satisfaction briefly – earlier in this chapter. In this section, we want to dissect the concept more carefully. How do we measure job satisfactions? How satisfied are employees in their jobs? What causes and employee to have a high level of job satisfaction? How do dissatisfied and satisfied employees affect and organization?

### Measuring Job Satisfaction

We've previously defined job satisfaction as a positive feeling about one's job resulting from and evaluation of its characteristics. This definition is clearly a very broad one. Yet this is inherent in the concept.

Remember, a person's job is more than just the obvious activities of shuffling papers, writing programming code, waiting on customers, or driving a truck. Jobs require interaction with coworkers and bosses, following organizational rules and policies, meeting performance standards, living with working conditions that are often less than ideal, and the like. This means that an employee's assessment of how satisfied or dissatisfied he or she is with the job is a complex summation of a number of discrete job elements. How, then, do we measure the concept?

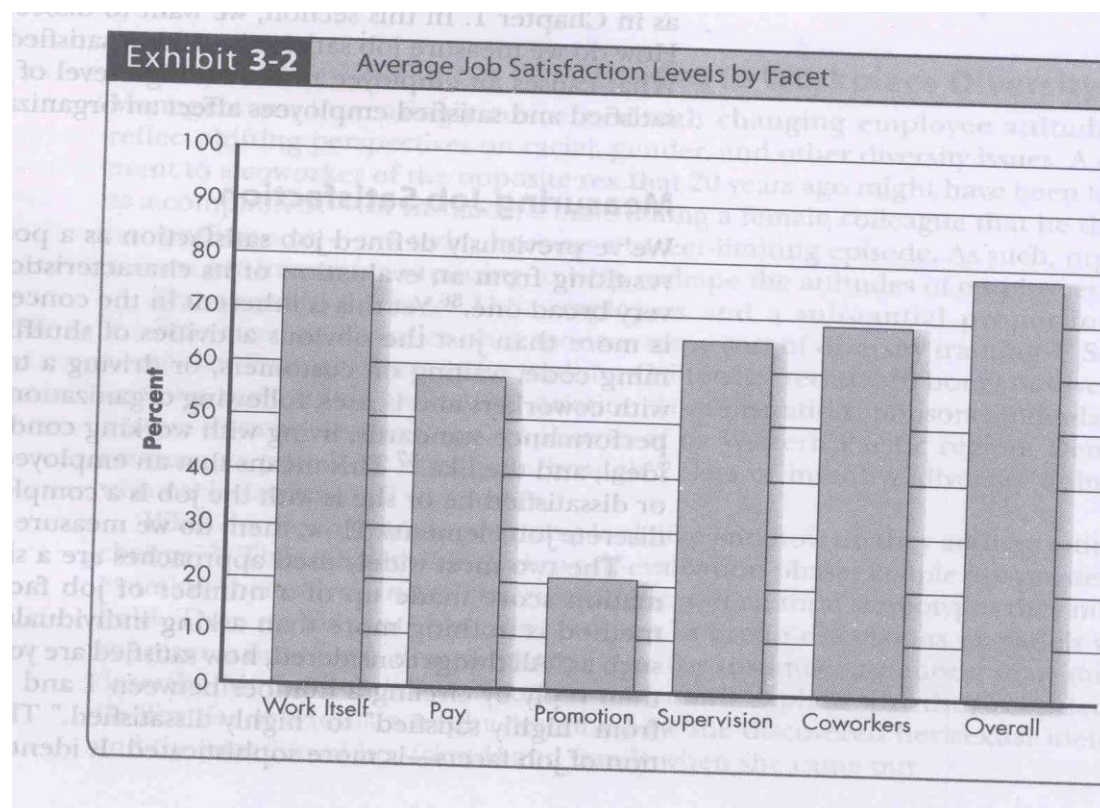
The two most widely used approaches are a single global rating and a summation score made up of a number of job facets. This single global rating method is nothing more than asking individuals to respond to one question, such as "All things considered, how satisfied are you with your job?" Respondents then reply by circling a number between 1 and 5 that corresponds to answers from "highly satisfied" to "highly dissatisfied." The other approach – a summation of job facets – is more sophisticated. It identifies key elements in a job and asks for the employee's feelings about each. Typical factors that would be included are the nature of the work, supervision, present pay, promotion opportunities, and relations with coworkers. These factors are rated on a standardized scale and then added up to create an overall job satisfaction score.

Is one of the foregoing approaches superior to the other? Intuitively, it would seem that summing up responses to a number of job factors would achieve a more accurate evaluation of job satisfaction. The research, however, doesn't support this intuition. This is one of those rare instances in which simplicity seems to work as well as complexity. Comparisons of one-question global ratings with the more lengthy summation-of-job-factors method indicate that the former is essentially as valid as the latter. The best explanation for this outcome is that the concept of job satisfaction is inherently so broad that the single question captures its essence. Another explanation may be that some important facets are left out of the summation of job facets. Both methods are helpful. For example, the single global rating method isn't very time consuming, which frees up managers so they can address other workplace issues and problems. And the summation of job facets helps managers where problems exist, making it easier to deal with unhappy employees and solve problems faster and more accurately.

## How Satisfied Are People in Their Jobs?

Are most people satisfied with their jobs? The answer seems to be a qualified “yes” in the United States and in most developed countries. Independent studies, conducted among U.S. workers over the past 30 years, generally indicate that the majority of workers are satisfied with their jobs. Although the percentage range is wide, more people report that they’re satisfied than not. Moreover, these results generally apply to other developed countries. For instance, comparable studies among workers in Canada, Mexico, and Europe indicate more positive than negative results.

Research shows that satisfaction levels vary a lot depending on which facet of job satisfaction you’re talking about. As shown in Exhibit 3-2, people are on average satisfied with their jobs overall, with the work itself, and with their supervisors and coworkers. However, they tend to be less satisfied with their pay and with promotion opportunities. It’s not really clear why people dislike their pay and promotion possibilities more than other aspects of their jobs.



### HOW SATISFIED AM I WITH MY JOB?

*In the Self-Assessment Library (available on CD, online, and in print) take assessment I.B.3(How Satisfied Am I with My Job?) and answer the following questions. If you currently do not have a job, answer the questions for your most recent job.*

1. *How does your job satisfaction compare to others in your class who have taken the assessment?*
2. *Why do you think your satisfaction is higher than average?*

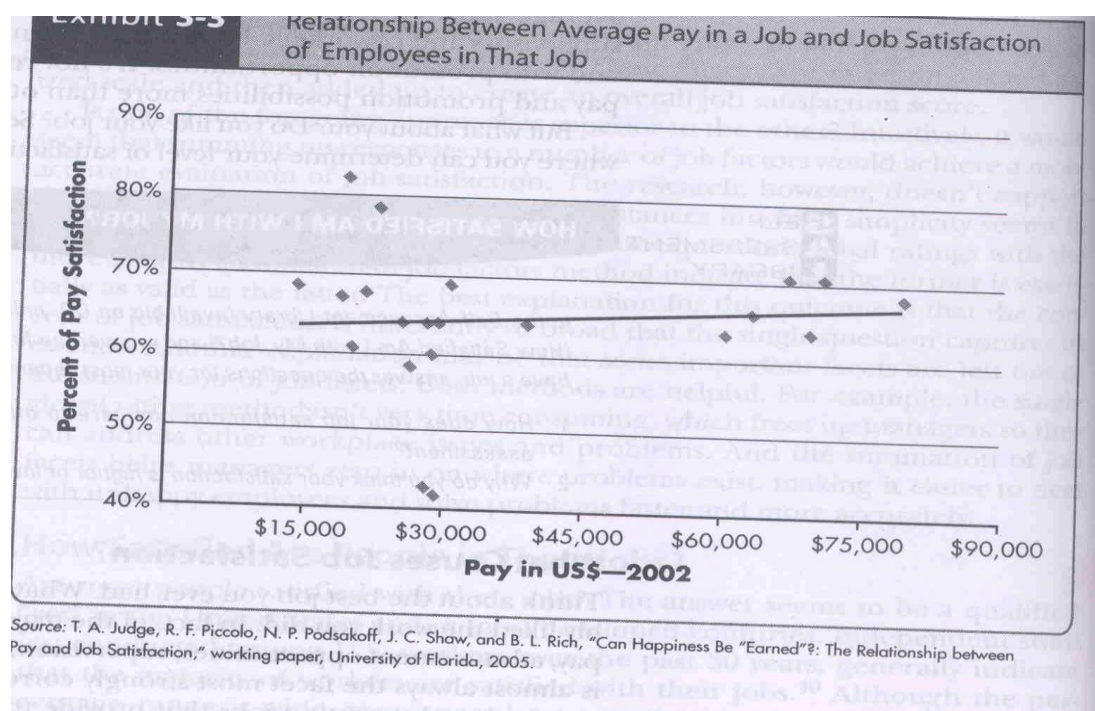
## What Causes Job Satisfaction?

Think about the best job you ever had. What made it so? Chances are you probably liked the work you did. In fact, of the major job-satisfaction facets (work itself, pay advancement opportunities, supervision, coworkers), enjoying



the work itself is almost always the facet most strongly correlated with high levels of overall job satisfaction. Interesting jobs that proved training, variety, independence, and control satisfy most employees. In other words, most people prefer work that is challenging and stimulating over work that is predictable and routine.

You have probably noticed that pay comes up often when discussing job satisfaction. Let's explore this topic some more. There is an interesting relationship between salary and job satisfaction. For people who are poor (for example, living below the poverty line), or who live in poor (for example, living below the poverty line), or who live in poor countries, pay does correlate with job satisfaction and with overall happiness. But, once an individual reaches a level of comfortable living (in the United States, that occurs at about \$40,000 a year, depending on the region and family size), the relationship virtually disappears. In other words, people who earn \$80,000 are, on average, no happier with their jobs than those who earn close to \$40,000. Take a look at Exhibit 3-3. It shows the relation. As you can see, there isn't much of a relationship there. Jobs that are compensated handsomely have average job satisfaction levels no higher than those that are paid much less. To further illustrate this point, one researcher even found no significant difference when he compared the overall well-being of the richest people on the Forbes 400 list with Maasai Herdsmen in East Africa.



Now money does motivate people. But what motivates us is not necessarily the same as what makes us happy. A recent poll by UCLA and the American Council on Education found that entering freshmen becoming "very well off financially" first on a list of 19 goals, ahead of choices such as helping others, raising a family, or becoming proficient in an academic pursuit. May be your goal isn't to be happy. But if it is, money's probably not going to do much to get you there.

Job satisfaction is not just about job conditions. Personality also plays a role. For example, some people are predisposed to like almost anything, and others are unhappy even in the seemingly greatest jobs. Research has shown that people who have a negative personality (for example, those who tend to be grumpy, critical, and negative) are usually less satisfied with their jobs. See Exhibit 3-4. The Neutral Objects Satisfaction Questionnaire is a measure for understanding the link between personality and job satisfaction. For example, one study showed that nurses who were dissatisfied with the majority of the items on the list were also dissatisfied with their jobs. This isn't surprising – after all, If someone dislikes his first name, his telephone service, and even 8 1/2 "X 11" paper, you'd expect him to dislike most things in his life – including his job.

### Exhibit 3-4

### Neutral Objects Satisfaction Questionnaire



Instructions: Circle whether you are on average satisfies, neutral, or dissatisfies with each item below.			
The city in which you live	Satisfied	Neutral	Dissatisfied
The neighbors you have	Satisfied	Neutral	Dissatisfied
The high school you attended	Satisfied	Neutral	Dissatisfied
The climate where you live	Satisfied	Neutral	Dissatisfied
Movies being produced today	Satisfied	Neutral	Dissatisfied
The quality of food you buy	Satisfied	Neutral	Dissatisfied
Today's cars	Satisfied	Neutral	Dissatisfied
Local newspapers	Satisfied	Neutral	Dissatisfied
Your first name	Satisfied	Neutral	Dissatisfied
The people you know	Satisfied	Neutral	Dissatisfied
Telephone service	Satisfied	Neutral	Dissatisfied
8 1/2 "X 11" paper	Satisfied	Neutral	Dissatisfied
Restaurant food	Satisfied	Neutral	Dissatisfied
Modern art	Satisfied	Neutral	Dissatisfied

Source: T.A. Judge and C.L. Hulin, "Job Satisfaction as a Reflection of Disposition: A Multiple-Source Causal Analysis," *Organizational Behavior and Human Decision Processes*, 1993, vol. 56, PP.1388-421.

## Myth or Science?

### "Happy Workers Are Productive Workers"

This statement is generally true. The idea that "happy workers are productive workers" developed in the 1930s and 1940s, largely as a result of findings drawn by researchers conducting the Hawthorne studies at Western Electric. Based on those conclusions, managers worked to make their employees happier by focusing on working conditions and the work environment. Then, in the 1980s, an influential review of the research suggested that the relationship between job satisfaction and job performance was not particularly high. The authors of this review even went so far as to label the relationship as "illusory."

More recently, a review of more than 300 studies corrected some errors in this earlier review. It estimated that the correlation between job satisfaction and job performance is moderately strong. This conclusion also appears to be generalizable across international contexts. The correlation is higher for complex jobs that provide employees with more discretion to act on their attitudes.

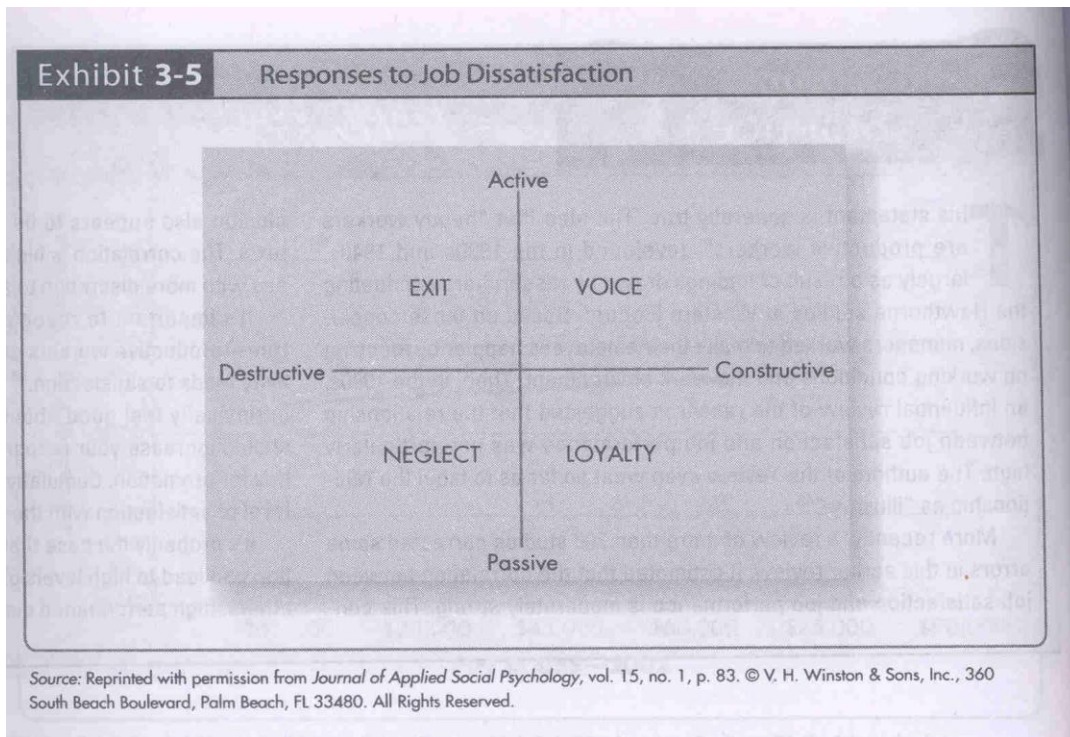
It's important to recognize that the reverse causality might be true – productive workers are likely to be happy workers, or productivity leads to satisfaction. In other words, if you do a good job, you intrinsically feel good about it. In addition, your higher productivity should increase your recognition, your pay level, and your probabilities for promotion. Cumulatively, these rewards, in turn, increase your level of satisfaction with the job.

It's probably the case that both arguments are right: That satisfaction can lead to high levels of performance for some people, while for others, high performance may cause them to be satisfied.

## The Impact of Dissatisfied and Satisfied Employees on the Workplace

There are consequences when employees like their jobs, and there are consequences when employees dislike their jobs. One theoretical framework – the exit-voice-loyalty-neglect framework – is helpful in understanding the consequences of dissatisfaction. Exhibit 3-5 illustrates the framework's four responses, which differ from one another along two dimensions: constructive/destructive and active/passive. The responses are defined as follows:

- **Exit:** Behavior directed toward leaving the organization, including looking for a new position as well as resigning.
- **Voice:** Actively and constructively attempting to improve conditions, including suggesting improvements, discussing problems with superiors, and some forms of union activity.
- **Loyalty:** Passively but optimistically waiting for conditions to improve, including speaking up for the organization in the face of external criticism and trusting the organization and its management to “do the right thing.”
- **Neglect:** Passively allowing conditions to worsen, including chronic absenteeism or lateness, reduced effort, and increased error rate.



Exit and neglect behaviors encompass our performance variables – productivity, absenteeism, and turnover. But this model expands employee response to include voice and loyalty – constructive behaviors that allow individuals to tolerate unpleasant situations or to revive satisfactory working conditions. It helps us to understand situations, such as those sometimes found among unionized workers, for whom low job satisfaction is coupled with low turnover. Union members often express dissatisfaction through the grievance procedure or through formal contract negotiations. These voice mechanisms allow union members to continue in their jobs while convincing themselves that they are acting to improve the situation.

As helpful as this framework is in presenting the possible consequences of job dissatisfaction, it's quite general. We now discuss more specific outcomes of job satisfaction and dissatisfaction in the workplace.

**Job Satisfaction and Job Performance:** As the “Myth or Science?” box concludes, happy workers are more likely to be productive workers, although it's hard to tell which way the causality runs. However, some researchers used to believe that the relationship between job satisfaction and job performance was a management myth. But a review of 300 studies suggested that the correlation is pretty strong. As we move from the individual level to that of the organization, we also find support for the satisfaction-performance relationship. When satisfaction and productivity data are gathered for the organization as a whole, we find that organizations with more satisfied employees tend to be more effective than organizations with fewer satisfied employees.

**Job Satisfaction and OCB:** It seems logical to assume that job satisfaction should be a major determinate of an employee's organizational citizenship behavior (OCB). Satisfied employees would seem more likely to talk positively about the organization, help others, and go beyond the normal expectations in their job. Moreover, satisfied employees might be more prone to go beyond the call of duty because they want to reciprocate their positive experiences. Consistent with this thinking, early discussions of OCB assumed that it was closely linked with satisfaction. More recent evidence, however, suggests that satisfaction influences OCB, but through perceptions of fairness.

There is a modest overall relationship between job satisfaction and OCB. But satisfaction is unrelated to OCB when fairness is controlled for. What does this mean? Basically, job satisfaction comes down to conceptions of fair outcomes, treatment, and procedures. If you don't feel that your supervisor, the organization's procedures, or pay policies are fair, your job satisfaction is likely to suffer significantly. However, when you perceive organizational processes and outcomes to be fair, trust is developed. And when you trust your employer, you're more willing to voluntarily engage in behavior that go beyond your formal job requirements.

**Job Satisfaction and Customer Satisfaction:** As we noted earlier employees in service jobs often interact with customers. Since the management of service organizations should be concerned with pleasing those customers, it is reasonable to ask: is employee satisfaction related to positive customer outcomes? For frontline employees who have regular contact with customers, the answer is "Yes."

The evidence indicates that satisfied employees increase customer satisfaction and loyalty. Why? In service organizations, customer retention and defection are highly dependent on how frontline employees deal with customers. Satisfied employees are more likely to be friendly, upbeat, and responsive – which customers appreciate. And because satisfied employees are less prone to turnover, customers are more likely to encounter familiar faces and receive experienced service. These qualities build customer satisfaction and loyalty. In addition, the relationship seems to apply in reverse: Dissatisfied customers can increase an employee's job dissatisfaction. Employees who have regular contact with customers report that rude, thoughtless, or unreasonably demanding customers adversely affect the employees' job satisfaction.

A number of companies are acting on this evidence. Service-oriented businesses such as FedEx, Southwest Airlines, Four Seasons Hotels, American Express, and Office Depot obsess about pleasing their customers. Toward that end, they also focus on building employee satisfaction-recognizing that employee satisfaction will go a long way toward contributing to their goal of having happy customers. These firms seek to hire upbeat and friendly employees, they train employees in the importance of customer service, they reward customer service, they provide positive employee work climates, and they regularly track employee satisfaction through attitude surveys.

**Job Satisfaction and Absenteeism:** We find a consistent negative relationship between satisfaction and absenteeism, but the correlation is moderate to weak. While it certainly makes sense that dissatisfied employees are more likely to miss work, other factors have an impact on the relationship and reduce the correlation coefficient. For example, organizations that provide liberal sick leave benefits are encouraging all their employees – including those who are highly satisfied – to take days off. Assuming that you have a reasonable number of varied interests, you can find work satisfying and yet still take off work to enjoy a 3-day weekend or tan yourself on a warm summer day if those days come with no penalties.

An excellent illustration of how satisfaction directly leads to attendance, when there is a minimum impact from other factors, is a study done at Sears, Roebuck. Satisfaction data were available on employees at Sears' two headquarters in Chicago and New York. In addition, it is important to note that Sears' policy was not to permit employees to be absent from work for avoidable reasons without penalty. The occurrence of a freak April 2 snowstorm in Chicago office with attendance in New York, where the weather was quite nice. The interesting dimension in this study is that the snowstorm gave the Chicago employees a built-in excuse not to come to work. The storm crippled the city's transportation, and individuals knew they could miss work this day with no penalty. This natural experiment permitted the comparison of attendance records for satisfied and dissatisfied employees at two locations- one where you were expected to be at work (with normal pressures for attendance) and the other where you were free to choose with no penalty involved. If satisfaction leads to attendance, when there is an absence of out-side factors, the more satisfied employees should have come to work in Chicago, while

dissatisfied employees should have stayed home. The study found that on this particular April 2, absenteeism rates in New York were just as high for satisfied groups. But in Chicago, the workers with high satisfaction scores had much higher attendance than did those with lower satisfaction levels. These findings are exactly what we would have expected if satisfaction is negatively correlated with absenteeism.

**Job Satisfaction and Turnover:** Satisfaction is also negatively related to turnover, but the correlation is stronger than what we found for absenteeism. Yet, again, other factors such as labor-market conditions, expectations about alternative job opportunities, and length of tenure with the organization are important constraints on the actual decision to leave one's current job.

Evidence indicates that an important moderator of the satisfaction-turnover relationship is the employee's level of performance. Specifically, level of satisfaction is less important in predicting turnover for superior performers. Why? The organization typically makes considerable efforts to keep opportunities, and so forth. Just the opposite tends to apply to poor performers. Few attempts are made by the organization to retain them. There may even be subtle pressures to encourage them to quit. We would expect, therefore, that job satisfaction is more important in influencing poor performers to stay than superior performers. Regardless of level of satisfaction, the latter are more likely to remain with the organization because the receipt of recognition, praise, and other rewards gives them more reasons for staying.

**Job Satisfaction and Workplace Deviance:** Job dissatisfaction predicts a lot of specific behavior, including unionization attempts, substance abuse, stealing at work, undue socializing, and tardiness. Researchers argue that these behaviors are indicators of a broader syndrome that we would term deviant behavior in the workplace (or employee withdrawal). The key is that if employees don't like their work environment, they'll respond somehow. It is not always easy to forecast exactly *how* they'll respond. One worker's response might be to quit. But another may respond by taking work time to surf the Internet, taking work supplies home for personal use, and so on. If employers want to control the undesirable consequences of job dissatisfaction, they had best attack the source of the problem – the dissatisfaction – rather than trying to control the different responses.

## Summary and Implications for Managers

Managers should be interested in their employees' attitudes because attitudes give warnings of potential problems and because they influence behavior. Satisfied and committed employees, for instance, have lower rates of turnover, absenteeism, and withdrawal behaviors. They also perform better on the job. Given that managers want to keep resignations and absences down – especially among their more productive employees – they will want to do the things that will generate positive job attitudes.

The most important thing managers can do to raise employee satisfaction is to focus on the intrinsic parts of the job, such as making the work challenging and interesting. Although paying employees poorly will likely not attract high-quality employees to the organization, or keep high performers, managers should realize that high pay alone is unlikely to create a satisfying work environment. Managers should also be aware that employees will try to reduce cognitive dissonance. More important, dissonance can be managed. If employees are required to engage in activities that appear inconsistent to them or that are at odds with their attitudes, the pressures to reduce the resulting dissonance are lessened when employees perceive that the dissonance is externally imposed and is beyond their control or if the rewards are significant enough to offset the dissonance.

# Groups and Teams

## Learning Objectives

**Describe** the basic nature of groups: the dynamics of group formation and the various types of groups.

**Discuss** the implications that research on groups has for the practice of management.

**Explain** the important dynamics of informal groups and organizations.

**Analyze** the impact of groupthink.

**Present** the newly emerging team concept and practice.

# Starting with Best Practice Leader's Advice

## Continental Airlines' CEO Gordon Bethune on the Value of Teams

*Continental Airlines has the distinction of going from one of the worst to one of the most admired companies in the world. Continental has recently received many awards in its industry, including Airline of the Year and Best Managed U.S. Carrier. Continental has also been ranked first in customer service in recent years in the J. D. Power Airline Customer Satisfaction study. CEO and then Chairman of the Board Gordon Bethune was named one of the top 25 global managers by Business Week and was ranked sixth among the top 50 CEOs in 1999 by Worth Magazine. In this interview, Bethune discusses his experience with teams in the success of Continental.*

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Q1: Continental's Working Together program involves a lot of teamwork. How do you view teams?

Bethune: Running an airline is the biggest team sport there is. It's not an approach, it's not reorganization, and it's not a daily team plan. We are like a wristwatch--- lots of different parts, but the whole has value only when we all work together, It has no value when any part fails. So we are not a cross-functional team, we're a company of multifunctions that has value when we all work cooperatively ----pilots, flight attendants, gate agents, airport agents, mechanics, reservation agents. And not to understand that about doing business means you're going to fail. Lots of people have failed because they don't get it. It's like basic human nature: if you take someone for granted or treat them like they have less value than someone else, they'll go to extraordinary lengths to show you you're wrong. People who try to manage our business and ascribe various values to different functions and treat some with disdain because they are easy to replace might some day find the watch doesn't work—it might be the smallest part that's broken. But the whole watch doesn't work.

Q2: How do you get teams working in a great way?

Bethune: we are analogous to a football team. Everyone has a different assignment but that is the game. In a larger sense we are all on a team, and we instill that down to the head of departments. We have a fairly collegial style of management. I have four or five people I work with closely--- our president, and chief operating officer, the chief financial officer, the head of legal and public relations, and the head of operations. We collectively agree on things or we just don't do them because each one of them sees things in their knothole from their functional perspective. If we

all say yes, it's probably OK. I read once that four or five really smart guys working together could beat any one guy. And 14 or so are too many and you might go the wrong way. So we have four or five of us who, each in our definition of smart brings smarts to the table. And we've got the best management team in the United States. It works; it shows in the records, it's not me being a proud parent. Just look at the data.

Q3: What do you see as some of the challenges of teams?

Bethune: We all have to identify and agree on the definition of success. The biggest disconnect in any enterprise is when people have different definitions of success. Let's take organized labor and the corporate office. How does organized labor define success --- number of dues collected, number of jobs? Is that the way you write the income statement? No, that's not a definition, so it's not unusual, then, to have different viewpoints and different directions you want to go in when you don't decide on how you keep score. So here's the big issue: you define how you keep score and define success and how you reward employees, and that's what you're going to get. Before I became CEO, Continental said: "We are going to be the lowest cost airline." So we had a mantra of low cost is everything, it's the Holy Grail. It's like having only one instrument like an air speed indicator on an airplane--- air speed is important but it isn't the only thing. So, you're doing pretty well when you hit the mountain, right? When that happens, you say, wait a minute, cost isn't everything. Let's say we're in the pizza business. If I'm rewarded by the making the product cost less. I'll take the cheese off the pizza and get paid. That's not what you wanted.

I was on a panel at Texas A&M University with Roger Clemens. Roger is one of the world's best pitchers. The students were asking: "How do you get people to change their behavior and do things you want them to do?" I said: "Why do you think Roger throws strikes?" Because that's how you keep score, that's how you win the game, that's how Roger gets paid. If you change the rules to four balls you're out, three strikes you walk, what do you think Roger's going to do? He isn't going to do the same thing as before because people want to win. You tell them what the metric is--- how you keep score, how you get paid---- and you get out of the way.

Q4: Are most of your teams of a permanent nature whereas others are temporary?

Bethune: We are all permanent.

Q5: You have had great success turning around Continental. What strategies do you have to sustain that success, particularly with regard to your Working Together program?

Bethune: The Working Together program says that you've got to have people work as a team. And every person on the team has to know what's going on. So we started

telling all our employees what's going on every day--- how our stock did, our on-time performance. Baggage handling, and so on. Everybody knows every day. Every Friday evening. I put out a voice mail that's also e-mailed all around the company. It's from the CEO's perspective--- what happened and where we're going. Every month in Houston we have an open house, and every month we send employees a newsletter to their home. Every six months the president and I go to seven major domestic cities and give a formal presentation. It is also available on videotape for employees to take home. At Continental, we spend 100 percent of our time working together as a team, trying to figure out how to beat our competitors.

Q6: What do you see as your greatest current challenge as CEO of Continental?

Bethune: I suspect it's the sustainability of our winning team and how to keep the focus and discipline of 48,000 men and women who are probably the best at what they do and keeping them the best. That's a challenge for me.

This chapter approaches organizational behavior dynamics from the perspective of the group—both informal and formal--- and the increasingly popular team concept and practice. The first section examines the way groups are formed, the various types of groups, some of the dynamics and functions of groups, and the findings of research on groups. The next section explores the dynamics of informal roles and organization. This discussion is followed by an analysis of the impact of groupthink. The balance of the chapter is devoted specifically to teams. The distinction is made between work groups and teams, and specific attention is devoted to self managed and cross functional teams. The way to make these teams more effective through training and evaluation is discussed.

## THE NATURE OF GROUPS

The group is widely recognized as an important sociological unit of analysis in the study of organizational behavior. Studying groups is especially valuable when the dynamics are analyzed. Group dynamics are the interactions and forces among group members in social situations. When the concept is applied to the study of organizational behavior, the focus is on the dynamics of members of both formal or informal work groups and, now, teams in the organization.

The popularity of work groups and teams is soaring. Although they were first used in corporate giants such as Toyota, Motorola, General Mills, and General Electric, recent surveys indicate that the great majority of American manufacturers now utilize teams and that they are being widely used in the service sector as well. Yet, as with many other areas of organizational behavior, the study and application of groups is undergoing considerable controversy and change. For example, in a commentary about the status of groups in the field of organizational behavior, Alderfer noted:



Group and group dynamics are a little like the weather--- something that nearly everyone talks about and only a few do anything about. Research, practice, and education about group dynamics are currently in a state of ferment. In the world of practice, we hear leaders speaking out to encourage teamwork, to support empowering people, and to establish organizational cultures that promote total quality management. Each of the initiatives depends on understanding groups well and acting effectively with them.

In addition, today's social environment surrounding groups is changing. For example, there is the assumption that Generation Xers are difficult to manage in groups because they have low needs for group affiliation, high needs for individual achievement, and "doing their own thing". The solution may be found in the careful constructions of rewards and performance measures in order to obtain cooperation and collaboration.

## **The Meaning of a Group and Group Dynamics**

Instead of quickly moving to teams per se, the discussion begins with groups and their dynamics, an understanding of which is basic to the field of organizational behavior. The team group can be defined in a number of different ways, depending on the perspective that is taken. A comprehensive definition would say that if a group exists in an organization, its members:

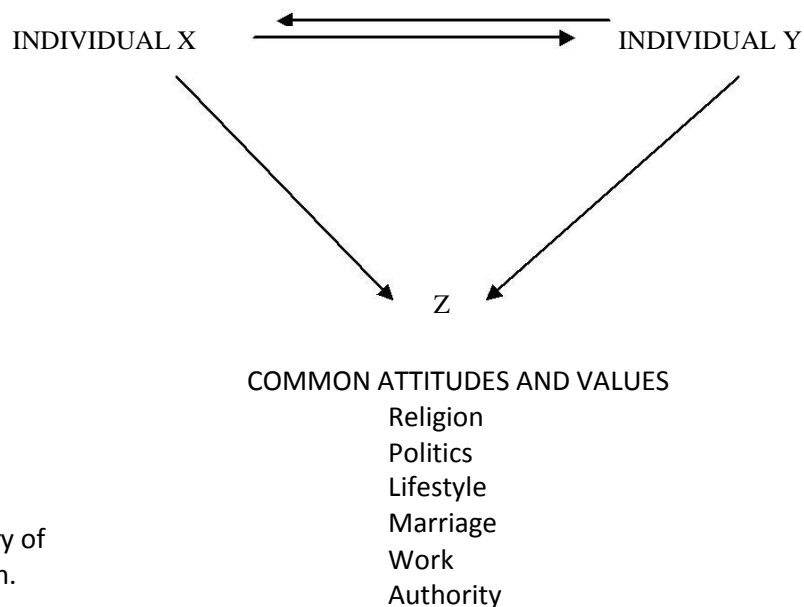
1. Are motivated to join
2. Perceive the group as a unified unit of interacting people
3. Contribute in various amounts to the group processes (that is, some people tribute more time or energy to the group than do others)
4. Reach agreements and have disagreements through various forms of interaction.

Just as there is no one definition of the term *group*, there is no universal agreement on what is meant by *group dynamics*. Although Kurt Lewin popularized the term in the 1930s. Through the years different connotations have been attached to it. One normative view is that group dynamics describes how a group should be organized and conducted. Democratic leadership, member participation, and overall cooperation are stressed. Another view of group dynamics is that it consists of a set of techniques. Here role playing, brainstorming, focus groups, leaderless groups, group therapy, sensitivity training, team building, transactional analysis, and the Johari window are traditionally equated with group dynamics, as are the emerging self-managed teams. A recent example of a new group technique is called "creative abrasion" which is the search for a clash of ideas rather than "personal abrasion" or the clash of people. The goal here is to develop greater creativity from the group. A third view is the closest to Lewin's original conception. Group dynamics are viewed from the perspective of the internal nature of groups, how they form, their structure and processes, and how they function and affect individual members, other groups, and the organization. The following sections are devoted to this third view of group dynamics and set the stage for the discussion of work teams.

## **The Dynamics of Group Formation**

Why do individuals form into groups? Before discussing some very practical reason it would be beneficial to examine briefly some of the classic social psychology theories of group formation, or why people affiliate with one another. The most basic theory explaining affiliation is propinquity. This interesting word means simply that individuals affiliate with one another because of spatial or geographical proximity. The theory would predict that students sitting next to one another in class, for example, are more likely to form into a group than are students sitting at opposite ends of the room. In an organization, employees who work in the same area of the plant or office or managers with offices close to one another would more probably form into groups than would those who are not physically located together. There is some research evidence to support the propinquity theory, and on the surface it has a great deal of merit for explaining group formation. The drawback is that it is not analytical and does not begin to explain some of the complexities of group formation. Some theoretical and practical reasons need to be explored.

*Theories of Group Formation.* A more comprehensive theory of group formation than mere propinquity comes from the classic theory of George Homans based on activities, interactions, and sentiments. These three elements are directly related to one another. The more activities persons share, the more numerous will be their interactions and the stronger will be their sentiments (how much the other persons are liked or disliked): the more interactions among persons, the more will be their shared activities and sentiments: and the more sentiments persons have for one another, the more will be their shared activities and interactions. This theory lends a great deal to the understanding of group formation and process. The major element is interaction. Persons in a group interact with one another not just in the physical propinquity sense, but also to accomplish many group goals through cooperation and problem solving.



**FIGURE 14.1**  
A balance theory of  
group formation.

There are many other theories that attempt to explain group formation. Most often they are only partial theories, but they are generally additive in nature. One of the more comprehensive is Theodore Newcomb's balance theory of group formation. The theory states that persons are attracted to one another on the basis of similar attitudes toward commonly relevant objects and goals. Figure 14.1 shows this balance theory. Individual X will interact and form a relationship/group with individual Y because of common attitudes and values (Z). Once this relationship is formed, the participants strive to maintain a symmetrical balance between the attraction and the common attitudes. If an imbalance occurs, an attempt is made to restore the balance. If the balance cannot be restored, the relationship dissolves. Both propinquity and interaction play a role in balance theory.

Still another theoretical approach to group formation from social psychology is exchange theory. Similar to its functioning as a work-motivation theory, discussed in Chapter 8, exchange theory of groups is based on reward-cost outcomes of interaction. A minimum positive level (rewards greater than costs) of an outcome must exist in order for attraction or affiliation to take place. Rewards from interactions gratify needs, whereas costs incur anxiety, frustration, embarrassment, or fatigue. Propinquity, interaction, and common attitudes all have roles in exchange theory.

Besides these more established social psychology explanations for group formation there are also some generally recognized identifiable stages of group development. These stages can be briefly summarized as follows:

1. *Forming*. This initial stage is marked by uncertainty and even confusion. Group members are not sure about the purpose, structure, task, or leadership of the group.
2. *Storming*. This stage of development, as indicated by the term, is characterized by conflict and confrontation. (In the usually emotionally charged atmosphere, there may be considerable disagreement and conflict among the members about roles and duties.)
3. *Norming*. Finally, in this stage the members begin to settle into cooperation and collaboration. They have a "we" feeling with high cohesion, group identity, and camaraderie.
4. *Performing*. This is the stage where the group is fully functioning and devoted to effectively accomplishing the tasks agreed on in the norming stage.
5. *Adjourning*. This represents the end of the group, which in ongoing, permanent groups will never be reached. However, for project teams or task forces with a specific objective, once the objective is accomplished, the group will disband or have a new composition, and the stages will start over again.

*Practicalities of Group Formation.* Besides the conceptual explanations for group formation and development, there are some very practical reasons for joining and/or forming a group. For instance, employees in an organization may form a group for economic, security, or social reasons. Economically, workers may form a group to work on a project that is paid for on a group-incentive plan such as gainsharing, or they may form a union to demand higher wages. For security, joining a group provides the individual with a united front in combating indiscriminant, unilateral treatment. The adage that there is strength in numbers applies in this case. The most important practical reason individuals join or form groups is, however, that groups tend to satisfy the very intense social needs of most people. Workers, in particular, generally have a very strong desire for affiliation. This need is met by belonging to a group or becoming a member of a team.

Research going as far back as the Hawthorne studies revealed that the affiliation motive has a major impact on human behavior in organizations. Chapter 8 also discusses this motive.

An alternative model that has most recently been proposed as an explanation for group formation processes is called the punctuated equilibrium model. According to this approach, groups form in a first phase in which a target or mission is set and then are not altered very easily, due to a process called inertia, or systematic resistance to change. At some midpoint, the second phase begins. This phase commences when group members suddenly recognize that if they don't change tactics, the group's goal or mission will not be accomplished. This "midlife crisis" in the group's existence is exemplified by changes made in tactics followed by bursts of activity and energy designed to complete the task. The name of the model is derived from the equilibrium that exists in the first half of the group's life and the punctuated efforts and behavioral modification in the second phase. Although there is just preliminary research on the punctuated equilibrium model, it has considerable intuitive appeal based on the common experiences most people have had in working on group projects.

Models of the dynamics of group formation and functioning should progress further when issues such as demographic diversity and globalization are incorporated. One recent analysis noted that "fault lines" within groups may form around individual member characteristics and lead to subgroup conflicts among members. Diversity is the primary source of differences in member characteristics leading to such conflict. On the international front, another study notes that group efficacy, or the group's belief in its ability to perform effectively, as well as actual performance, may be impacted by intercultural variables such as collectivism and task uncertainty. Further, there may be a relationship between personal efficacy (see Chapter 9) and collective efficacy. For example, one recent study by Bandura and his colleagues revealed that socioeconomic status enhanced perceived personal efficacy, which in turn contributed substantially to a sense of collective efficacy to effect social change through unified action.

## Types of Groups

There are numerous types of groups. The theories of group formation that were just discussed are based partly on the attraction between two persons—the simple dyad group.

Of course, in the real world groups are usually much more complex than the dyad. There are small and large groups, primary and secondary groups, coalitions, membership and reference groups, in and out-groups, and formal and informal groups. Each type has different characteristics and different effects on its members.

*Primary Groups.* Often the terms small group and primary group are used interchangeably. Technically, there is a difference. A small group has to meet only the criterion of small size. Usually no attempt is made to assign precise numbers, but the accepted criterion is that the group must be small enough for face-to-face interaction and communication to occur. In addition to being small, a primary group must have a feeling of comradeship, loyalty, and a common sense of values among its members. Thus all primary groups are small groups, but not all small groups are primary groups.

Two examples of a primary group are the family and the peer group. Initially, the primary group was limited to a socializing group, but then a broader conception was given impetus by the results of the Hawthorne studies. Work groups definitely have primary group qualities. Research findings point out the tremendous impact that the primary group has on individual behavior,

regardless of context or environmental conditions. An increasing number of companies, such as General Mills, FedEx, Chaparral Steel, and 3M, have begun to use the power of primary groups by organizing employees into self-managed teams. Importantly, these teams are natural work groups with all the dynamics described so far. The team members work together to perform a function or produce a product or service. Because they are self-managing, they also perform functions such as planning, organizing, and controlling the work. For example, at 3M self-managed teams are empowered to take corrective actions to resolve day-to-day problems: they also have direct access to information that allows them to plan, control, and improve their operations. The last part of the chapter discusses this team concept and practice in detail.

*Coalitions.* Although recent research indicates that the social structure will affect the increasingly popular strategic alliance formation patterns between organizations, at a more micro level, coalitions of individuals and groups within organizations have long been recognized as an important dimension of group dynamics. Although the concept of coalition is used in deferent ways by different theorists, a comprehensive review of the coalition literature suggests that the following characteristics of a coalition be included:

1. Interacting group of individuals
2. Deliberately constructed by the members for a specific purpose
3. Independent of the formal organization's structure
4. Lacking a formal internal structure
5. Mutual perception of membership
6. Issue-oriented to advance the purposes of the members
7. External forms
8. Concerted member action, act as a group

Although the preceding have common characteristics with other types of groups, coalitions are separate, usually very powerful, and often effective entities in organizations. For example, a study found that employees in a large organization formed into coalitions to overcome petty conflicts and ineffective management in order to get the job done.

*Other Types of Groups.* Besides primary groups and coalitions, there are also other classifications of groups that are important to the study of organizational behavior. Two important distinctions are between membership and reference groups and between in-groups and out-groups. These differences can be summarized by noting that membership groups are those to which the individual actually belongs. An example would be membership in a craft union. Reference groups are those to which an individual would like to belong---those he or she identifies with. An example would be a prestigious social group. In-groups are those who have or share the dominant values, and out-groups are those on the outside looking in. All these types of groups have relevance to the study of organizational behavior, but the formal and informal types are most directly applicable.

There are many formally designated work groups, such as committees, in the modern organization. The functional departmental committees (finance, marketing, operations, and human resources) and now cross-functional teams are examples, as are standing committees such as the public affairs committee, grievance committee, or executive committee. Teams, however, have emerged as the most important type of group in today's organizations.

Informal groups form for political, friendship, or common interest reasons. For political purposes, the informal group may form to attempt to get its share of rewards and/or limited resources. Friendship groups may form on the job and carry on outside the workplace. Common interests in sports or ways to get back at management can also bind members into an informal group. The dynamics of these informal groups are examined in more detail in an upcoming section.

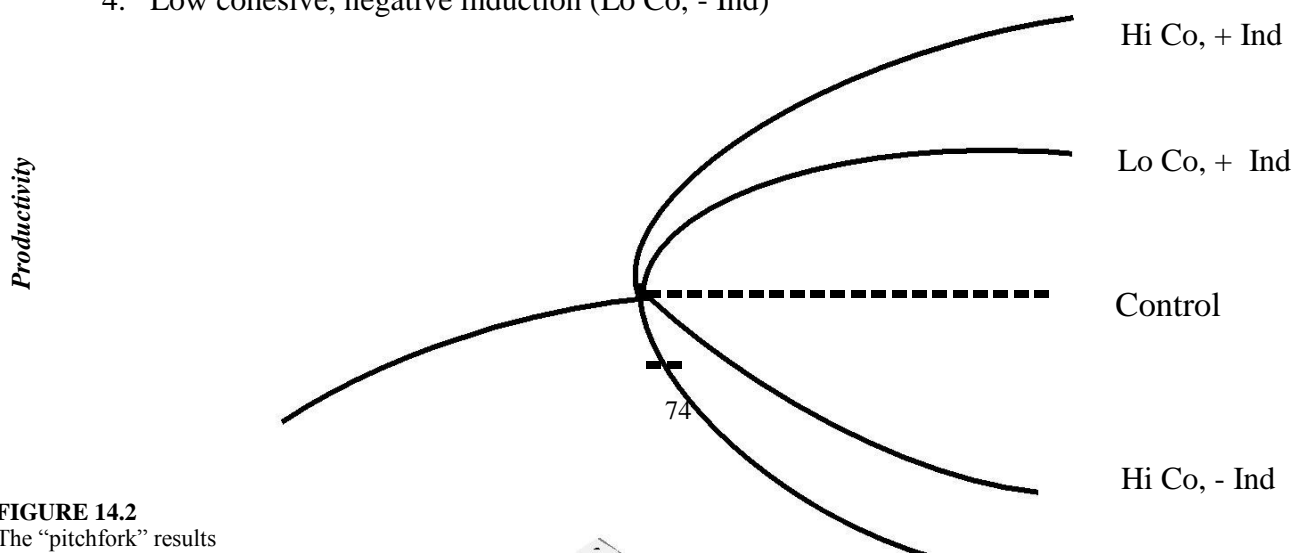
## Implications from Research on group Dynamics

Starting with the Hawthorne studies discussed in Chapter 1, there has been an abundance of significant research on groups that has implications for organizational behavior and performance. Besides the Hawthorne studies, there are numerous research studies on group dynamics that indirectly contribute to the better understanding of organizational behavior. In general, it can be concluded from research over the years that groups have a positive impact on both individual employee effectiveness (help learn about the organization and one's self, gain new skills, obtain rewards not available to individuals, and fulfill important social needs) and organizational effectiveness (strength in numbers of ideas and skills, improved decision making and control, and facilitating change as well as organizational stability).

In addition to the somewhat general conclusions, there are some specific studies in social psychology that seem to have particular relevance to organizational behavior. The seminal work of social psychologist Stanley Schachter seems especially important for the application of group dynamics research to human resource management.

*The Schachter Study.* In a classic study, Schachter and his associates tested the effect of group cohesiveness and induction (or influence) on productivity under highly controlled conditions. Cohesiveness was defined as the average resultant force acting on members in a group. Through the manipulations of cohesiveness and induction, the following experimental groups were created:

1. High cohesive, positive induction (Hi Co, + Ind)
2. Low cohesive, positive induction (Lo Co, + Ind)
3. High cohesive, negative induction (Hi Co, - Ind)
4. Low cohesive, negative induction (Lo Co, - Ind)



**FIGURE 14.2**  
The “pitchfork” results

The independent variables in the experiment were cohesiveness and induction, and the dependent variable was productivity. Figure 14.2 summarizes the results. Although Schachter's experiment did not obtain a statistically significant difference in productivity between the high and low cohesive groups that were positively induced, a follow-up study that use a more difficult task did.

*Implications of the Schachter Study.* The results of this classic study contain some very interesting implications for group/team performance in today's organizations. The "pitchfork" productivity curves in Figure 14.2 imply that highly cohesive groups have very powerful dynamics, both positive and negative, for group performance. On the other hand, the low-cohesive groups are not so powerful. A meta-analysis of a number of studies over the years found that group cohesiveness had a highly significant positive effect on performance. However, of even more importance to group performance is the variable of induction. The findings of this study indicate that performance depends largely on how the high or low-cohesive group is induced.

At least for illustrative purposes, leadership may be substituted for induction. If this is done, the key variable for the subjects' performance in the Schachter experiment becomes leadership. A highly cohesive group that is given positive leadership will have the highest possible productivity. On the other side of the coin, a highly cohesive group that is given poor leadership will have the lowest possible productivity. A highly cohesive group is analogous to a time bomb in the hands of management. The direction, in which the highly cohesive group goes, breaking production records or severely restricting output, depends on how it is led. The low-cohesive group is much safer in the hands of management. Leadership will not have a serious negative or positive impact on this group. However, the implication is that if management wishes to maximize productivity, it must build a cohesive group and give it proper leadership and, importantly, over time this highly cohesive group may become self-managing.

This discussion does not imply that subjects doing a simple task in a laboratory setting can be made equivalent to managing human resources in modern, complex organizations. This, of course, cannot and should not be attempted. On the other hand, there are some interesting insights and points of departure for organizational behavior analysis that can come out of laboratory investigations such as Schachter's. For instance, the results of Schachter's study can be applied in retrospect to the pioneering work on scientific management of Frederick W. Taylor or to the Hawthorne studies. Taylor accounted only for the Hi Co, -- Ind productivity curve when he advocated "breaking up the group." If his scientific management methods could be considered + Ind, the best productivity he could obtain would be that of Lo Co, + Ind. In other words, in light of the Schachter study, Taylor's methods could yield only second-best productivity.

In the Hawthorne studies, both the relay room operatives and the bank wirers were highly cohesive work groups. As is brought out in Chapter 1, a possible explanation of why one highly cohesive work group (the relay room workers) produced at a very high level and the other highly cohesive group (the bank wirers) produced at a very low rate is the type of induction (supervision) that was applied. Both leadership and group dynamics factors, such as cohesiveness, can have an important impact on group performance in organizations. Table 14.1 briefly summarizes some of the major factors that can increase and decrease group cohesiveness.

**Table 14.1** Factors That Increase and Decrease Group Cohesiveness

Factors That Increase Group Cohesiveness	Factors That Decrease Group Cohesiveness
Agreement on group goals	Disagreement on goals
Frequency of interaction	Large group size
Personal attractiveness	Unpleasant experiences
Intergroup competition	Intergroup competition
Favorable evaluation	Domination by one or more members.

Source: Andrew D. Sxilagyi, Jr. and Marc J. Wallace, Jr. *Organizational Behavior and Performance*, 5<sup>th</sup> ed. Scott. Foresman/Little, Brown, Glenview, Ill., 1990, pp. 282-283

In addition, there are some recent research findings regarding the effects of time on group cohesion. In one study, a longer time together gave group members the opportunity to engage in meaningful interactions. Importantly, for today's environment for groups, surface-level diversity issues (age, gender, race differences) were found to weaken over time, whereas deep level diversity differences (attitudes and values) became stronger.

## Group/Team Effectiveness

Besides the basic research coming out of social psychology, a more specific focus on the impact that groups/teams have on employee behavior, especially the contribution to satisfaction and performance, has also received attention. The following is an overall summary of the way to use groups to enhance satisfaction and performance.

1. Organizing work around intact groups
2. Having groups charged with selection, training, and rewarding of members
3. Using groups to enforce strong norms for behavior, with group involvement in off the job as well as on the job behavior.
4. Distributing resources on a group rather than an individual basis
5. Allowing and perhaps even promoting intergroup rivalry so as to build within group solidarity

A review of the research literature determined three factors that seem to play the major role in determining group effectiveness: (1) task interdependence (how closely group members work together): (2) outcome interdependence (whether, and how, group performance is rewarded): and (3) potency (members' belief that the group can be effective).

To assess group or team effectiveness first requires careful specification of criteria. Effective groups are characterized as being dependable, making reliable connections between the parts, and targeting the direction and goals of the organization. This is accomplished when members "buy in" achieve coordination, have the desired impact, and exhibit the kind of vitality that sustains the organization over time as the environment shifts or changes. Factors that affect the success level of any given group include the type of task being performed and the



composition of the group itself. Teams with self leadership have been found to have varying levels of success, depending on whether the group's task is primarily conceptual or primarily behavioral in nature. The composition of the group has been found to be optimal when there is a mix of member types. Groups with only one type. Such as task "shapers" (those who define group tasks) are less successful than those with shapers, coordinators, completer-finishers, and team players.

Well known leadership guru Warren Bennis argues that effective groups have shared dreams and manage conflict by abandoning individual egos in the pursuit of a dream. They also are protected from the "suits" or corporate leaders, have real or invented enemies. See themselves as underdogs who are winning, and pay a personal price to succeed. Their leaders provide direction, meaning, trust, hope and display a bias towards action, risk taking, and urgency. Others suggest that "hot groups", those that accomplish breakthrough performance, are ones in which members see distinction and importance in their work, that the tasks captivate members, and that the tasks take priority over interpersonal relationships. Building hot groups requires less micromanaging, more informal (as opposed to formal) feedback, and role modeling of successful hot group behaviors by experienced members working with other new groups. Leadership in this approach is less intrusive and emphasizes group rather than individual rewards, and as a result, groups can "turn on a dime" and get things done more quickly.

Some aspects of effectiveness may be influenced by how groups form. When they are established, social comparisons and competition exists between members. These may have an impact on the organization citizenship behaviors (see Chapter 7) exhibited by group members.

Citizenship behaviors include altruism conscientiousness (or being a "good soldier") courtesy, sportsmanship, and civic virtue, which are also involved in looking out for the welfare of the group and the organization. Perceptions of fairness in group practices, may impact such citizenship behaviors. Which in turn help maintain the group's performance levels.

Group effectiveness may also be influenced by the conditions of adaptation to nonroutine events. Previous group literature suggested three behaviors as keys to adapting to unusual circumstances or events: (1) information collection and transfer, (2) task prioritization, and (3) task distribution. In one recent study of airline crews using flight simulations, it was found that the timing of key adaptive group behaviors was more strongly associated with performance than the behaviors themselves. In other words, information must be collected at the right time, prioritized properly, and tasks divided in a frame that allows for successful adaptation to unusual events.

## **THE DYNAMICS OF INFORMAL GROUPS**

Besides the formally designated groups and teams, informal groups in the work place play a significant role in the dynamics of organizational behavior. The major difference between formal and informal groups is that the formal group has officially prescribed goals and relationships, whereas the informal one does not. Despite this distinction, it is a mistake to think of formal and informal groups as two distinctly separate entities. The two types of groups coexist and are inseparable. Every formal organization has informal groups, and every informal organization eventually evolves some semblance of formal groups.

## **Norms and Roles in informal Groups**

With the exception of a single social act such as extending a hand on meeting, the smallest units of analysis in group dynamics are norms and roles. Many behavioral scientists make a point of distinguishing between the two units, but conceptually they are very similar. Norms are the “oughts” of behavior. They are prescriptions for acceptable behavior determined by the group. Norms will be strongly enforced by work groups if they:

1. Aid in group survival and provision of benefits
2. Simplify or make predictable the behavior expected of group members
3. Help the group avoid embarrassing interpersonal problems
4. Express the central values or goals of the group and clarify what is distinctive about the group's identity.

A role consists of a pattern of norms: the use of the term in organizations is directly related to its theatrical use. A role is a position that can be acted out by an individual. The content of a given role is prescribed by the prevailing norms. Probably role can best be defined as a position that has expectations evolving from established norms.

## **Informal Roles and the Informal Organization**

Informal roles vary widely and are highly volatile. An example of informal roles found in today's teams would include the following:

1. *Contributor*: This task-oriented team member is seen as very dependable. He or she enjoys providing the team with good technical information and data, is always prepared, and pushes the team to set high performance goals.
2. *Collaborator*: This team member focuses on the “big picture.” He or she tries to remind others of the vision, mission, or goal of the team but is flexible and open to new ideas, is willing to work outside the defined role, and is willing to share the glory with other team members.
3. *Communicator*: This positive, people-oriented team member is process-driven and is an effective listener. He or she plays the role of facilitator of involvement, conflict resolution, consensus building, feedback, and building an informal relaxed atmosphere.
4. *Challenger*: Known for candor and openness, this member questions the team's goals, methods, and even ethics. He or she is willing to disagree with the leader or higher authority and encourages well-conceived risk taking.

Like the formal organization, the informal organization has both functions and dysfunctions. In contrast to formal organization analysis, the dysfunctional aspects of informal organization have received more attention than the functional ones. For example conflicting objectives, restriction of output, conformity, blocking of ambition, inertia, and resistance to change are frequently mentioned dysfunctions of the informal organization. More recently, however,

organizational analysis has begun to recognize the functional aspects as well. For example, the following list suggests some practical benefits that can be derived from the informal organization.

1. Makes for a more effective total system
2. Lightens the workload on management
3. Fills in gaps in a manager's abilities
4. Provides a safely valve for employee emotions
5. Improves communication.

Because of the inevitability and power of the informal organization the functions should be exploited in the attainment of objectives rather than futilely combated by management. As one analysis of leadership points out: "Informal social networks exert an immense influence which sometimes overrides the formal hierarchy..... Leadership goes beyond a person's formal position into realms of informal, hidden or unauthorized influence.

## **THE DYSFUNCTIONS OF GROUPS AND TEAMS**

So far, the discussion has been mostly about the positive impact and the functional aspects of groups and teams. However, there are a number of recognized dysfunctions that should also be recognized. Of particular interest in work groups and teams are norm violation and role ambiguity/conflict, groupthink, risky shift, and social loafing.

### **Norm Violation and Role Ambiguity/Conflict**

Group norms that are violated can result in antisocial behaviors. At the extreme, these include sexual harassment and theft. Others include lying, spreading rumors, withholding effort, and absenteeism. A recent study found group members who are chronically exposed to antisocial behaviors are more likely to engage in them, and dissatisfaction with coworkers may also rise, especially when those coworkers exhibit more antisocial activities than the person in question.

There may also be gaps between the prescribed role as dictated by norms and the individual's reaction to the role. Role ambiguity occurs when the individual employee is unclear about the dictates of a given situation, or, in more common terms, "doesn't know what he's supposed to be doing." Unclear job descriptions, incomplete order given by a manager, and inexperience all contribute to role ambiguity. Such ambiguity can affect the person's ability to function effectively in a group or team. Also, role conflict occurs when the employee or team member is: (1) asked to perform conflicting tasks or (2) required to perform a task that conflicts with his or her own personal values. In group settings, the odds of role conflicts increase, especially when the group engages in unethical or antisocial behaviors and when the members of the group stress one set of norms while the leader and rules of the formal organization emphasize others.

### **The Groupthink, Conformity Problem**

A dysfunction of highly cohesive groups and teams that has received a lot of attention has been called groupthink by well-known social psychologist Irving Janis. He defines it as “a deterioration of mental efficiency, reality testing, and moral judgment that results from in group pressures. Essentially, groupthink results from the pressures on individual members to conform and reach consensus. Groups and teams that are suffering from groupthink are so bent on reaching consensus that there is no realistic appraisal of alternative courses of action in a decision and deviant. Minority or unpopular views are suppressed.

Janis has concluded that a number of historic fiascos by government policy making groups (for example, Britain’s do-nothing policy toward Hitler prior to World War II, the unpreparedness of U.S. forces at Pearl Harbor, the Bay of Pigs invasion at Cuba, and the escalation of the Vietnam war) can be attributed to groupthink. The Watergate affair during the Nixon administration. The Iran-Contra affair during the Reagan administration. And the Whitewater affair in the Clinton administration are also examples. The decision process by which NASA launched the space shuttle Challenger on its fateful mission can be analyzed in terms of the characteristics of groupthink. For example, conformity pressures were in evidence when NASA officials complained to the contractors about delays. Other symptoms of groupthink shown in Table 14.2 illusions of invulnerability and unanimity and mindguarding--- were played out in the challenger disaster by management’s treatment and exclusion of input by the engineers.

Although historically notorious news events can be used to dramatically point out the pitfalls of groupthink, it may also occur in committees and work group in business firms or hospitals or any other type of organization. Initially, there was at least some partial support of the groupthink model when applied to areas such as leader behavior and decision making. However recently there have been criticisms of the groupthink model coming from the organizational behavior literature. First of all, there has been very little research conducted to test the propositions of groupthink, most notably because it is so difficult to incorporate all of the items mentioned as the indicators of the phenomenon into one study. Further some of the results provide only very limited evidence for the model, and the continued uncritical acceptance of groupthink may be an example of groupthink itself. At this point, some organizational behavior theorists’ researchers are calling for either elimination of the groupthink model, reformulation of how it works, or revitalization of the approach used. One such approach would be to integrate the assumptions into the general group decision-making and problem-solving literature to see if they would provide support for conformity/groupthink. . These analyses suggest that the popularity of the groupthink model may come from its intuitive appeal rather than research support. Studies should be used to replicate the research in order to confirm previous finding, and these studies should be cumulative over time. Without this type of research rigor, unconditional acceptance of any model or theory may exist, even when empirical findings are sketchy at best.

**Table 14.2 Symptoms of Groupthink**

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1. There is the illusion of invulnerability. There is excessive optimism and risk taking.
2. There are rationalizations by the members of the group to discount warnings.
3. There is an unquestioned belief in the group’s inherent morality. The group ignores questionable ethical or moral issues or stances.
4. Those who oppose the group are stereotyped as evil. Weak or stupid.
5. There is direct pressure on any member who questions the stereotypes. Loyal members don’t question the direction in which the group seems to be heading.
6. There is self-censorship of any deviation from the apparent group consensus.

7. There is the illusion of unanimity. Silence is interpreted as consent.
8. There are self-appointed mindguards who protect the group from adverse information.

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Source: Adapted from Irving L. Janis, *Groupthink*, 2d ed, Houghton Mifflin, Boston. 1982. pp. 174-175

## **Risky Shift Phenomenon**

Even before excessive risk taking was brought out by groupthink, the so-called “risky shift phenomenon” of groups was recognized. Research going back many years has shown that, contrary to popular belief, a group may make more risky decisions than the individual members would on their own. This conclusion, of course, must be tempered by the values attached to the outcomes, but most of the research over the years finds that group discussion enhances the initial tendency of individual members in a given direction. Called group-induced attitude polarization, this means that, for example, if an employee has a prounion (or antiunion) attitude before group discussion, the group discussion results in an even more extreme attitude in the same direction.

## **Dysfunctions in Perspective**

Such symptoms as risky shift, polarization, and the others found in groupthink should make groups take notice and be very careful of the dysfunctions of groups. To help overcome the potentially disastrous effects, free expression of minority and unpopular viewpoints should be encouraged and legitimized. Companies such as General Electric, Bausch & Lomb, Apple Computer, Ford, Johnson & Johnson, and United Parcel Service are known for not only tolerating, but formally encouraging, conflict and debate during group/team work and committee meeting.

Although many studies show that successful companies advocate such open conflict and healthy debate among group members, other studies point to the value of consensus. This apparent contradiction may be resolved by recognizing the following:

Consensus may be preferred for smaller, non-diversified, privately, held firms competing in the same industry while larger firms dealing with complex issues of diversification may benefit from the dissent raised in open discussions. Larger firms in uncertain environments need dissent while smaller firms in more simple and stable markets can rely on consensus.

## **Social Loafing**

Another more recently recognized dysfunction associated with groups and teams is called social loafing. This problem occurs when members reduce their effort and performance levels when acting as part of a group. Primary causes include lack of performance feedback within the group, tasks that are not intrinsically motivating, situations in which the performances of others will cover for the reduced effort given by some members, and the “sucker effect” of not wanting to do more than the perception of effort being given by others. There is a cultural component inherent in such social loafing. Research has found that

cultures dominated by individual, self-interest values are more likely to have groups that experience loafing. On the other hand, more collectivist cultures, which are dominated by a “we feeling” and group goals lead to a stronger focus on the collective good and therefore endure less loafing by group members.

Social loafing is more likely to appear in large teams, where individual contributions are more difficult to identify. To reduce the impact of members shirking their duties and ensure that they are fully contributing members of the team, it has been suggested to keep teams smaller in size, specialize tasks so that individual member contributions are identifiable, measure individual performance, and select only motivated employees when building teams.

## **TEAMS IN THE MODERN WORKPLACE**

The discussion so far on group dynamics serves as the background and foundation for teams, and the terms groups and teams have been used interchangeably. However, teams have become so popular in today’s organizations that they deserve special attention. The term *team*, of course, is not new to organizations, and teamwork has been stressed throughout the years. For example, the well-known quality guru Joseph Juran first took his “Team Approach to Problem Solving” to the Japanese in the 1950s and then in the 1980s to the United States. Today, teams are becoming increasingly popular. Estimates of the prevalence and type of teams among Fortune 1000 companies are as follows:

1. Almost all use project teams (diverse managerial/professional employees working on projects for a defined, but typically extended, period of time).
2. A large majority use parallel teams (employees working on problem-solving or quality teams in parallel to the regular organizational structure).
3. A majority use permanent work teams (self-contained work units responsible for manufacturing products or providing services).

After first defining what is meant by a team and critically analyzing self-managed teams found in today’s organizations, the ways to train self-managed teams and make them more effective are discussed.

### **The Nature of a Team**

Although the term team is frequently used for any group, especially to get individuals to work together and to motivate them, some team experts make a distinction between teams and traditional work groups. For example, the authors of a book on the use of teams for creating high-performance organizations note that the difference between a work group and a team relates to performance results. They note:

A working group’s performance is a function of what its members do as individuals.

A team’s performance includes both individual results and what we call “collective work-products.” A collective work-product is what two or more members must work on together... [it] reflects the joint, real contribution of team members.

They go on to note these specific differences between work groups and teams:

1. The work group has a strong, clearly focused leader; the team has shared leadership roles.
2. The work group has individual accountability; the team has individual and mutual accountability.
3. The work group's purpose is the same as the organizations; the team has a specific purpose.
4. The work group has individual work-products; the team has collective work-products.
5. The work group runs efficient meetings; the team encourages open-ended, active problem-solving meetings.
6. The work group measures effectiveness indirectly (for example, financial performance of the overall business); the team measures performance directly by assessing collective work-products.
7. The work group discusses, decides, and delegates; the team discusses, decides, and does real work.

The point is that teams do go beyond traditional formal work groups by having a collective, synergistic (the whole is greater than the sum of its parts) effect.

The use of teams to produce products started in well-known, quality-conscious corporate giants, such as Toyota in Japan and Motorola and General Electric in the United States, and has quickly spread. Companies as different as Xerox (office equipment), Monsanto (chemicals), Hewlett-Packard (computers), and Johnsonville Sausage use self-managed, sometimes called autonomous, teams. As with other popular management approaches, such as MBO (management by objectives) or TQM (total quality management), after the initial excitement, it has now become clear that although self-managed teams are important, they are not the answer. There is increasing attention being given to the dynamics of groups/teams (already discussed) and the emergence of cross-functional, virtual, and self-managed teams.

## **Cross-Functional teams**

As part of the movement toward horizontal designs (see Chapter 4) and the recognition of dysfunctional bureaucratic functional autonomy, the focus has shifted to the use of cross-function teams. These teams are made up of individuals from various departments of functional specialties. For example, the U.S. Navy discovered that it was able to improve productivity by establishing cross-functional teams to manage and improve the core processes that affect both external customers and mission performance. At Massachusetts General, one of the nation's most prominent hospitals, doctors on the emergency-trauma team have created a "seamless" approach between the various functions for treating critical patients who are brought in with life-threatening gunshot and knife wounds. The accompanying Application Example: Greater Productivity through Cross-Functional Teams provides details on these and other examples.

The key to ensuring successful performance of cross-functional teams is found in two sets of criteria: one inside the team and one in the organization at large. To improve coordination with cross-functional teams, organizations at large. To improve coordination with cross-functional teams, organizations must carry out five steps. These include (1) choosing the membership carefully, (2) clearly establishing the purpose of the team, (3) ensuring that everyone understands how the group will function, (4) conducting intensive team building up front so that everyone learns how to interact effectively, and (5) achieving noticeable results so that morale remains high and the members can see the impact of their efforts.

## **Virtual teams**

With the advent of advanced information technology, the requirement that groups be made up of members in face-to-face interaction is no longer necessary. Members can now communicate at a distance through electronic means, such as e-mail, chat rooms, phone conferencing, faxes, satellite transmission, and websites. Knowledge-based tasks

performed by members in remote locations can become members of so-called virtual teams. Also, those performing in telecommuting jobs often include responsibilities to serve on virtual teams. Virtual teams are increasingly evident in global and partnered operations.

One key to effective use of virtual teams is called *synchronous technologies*, which allow members to interact at the same time, or in real time. Audio and videoconferencing are examples of synchronous technologies, whereas asynchronous technologies, such as e-mail, chat rooms, group calendars, bulletin boards, and Web pages may be used when delayed interaction is acceptable. The low cost of e-mail makes it an excellent candidate for collecting dates, generating ideas, and something for negotiating technical and interpersonal conflicts. Virtual teams can be effective because they are **flexible and are driven by information and skills rather than time and location**. However, caution must be paid when assembling a virtual group. They should match the task at hand. Internet chat rooms, for example, may create more work and result in poorer decisions than face-to-face meetings and telephone conferences unless there is adequate training and some experience with the technology.

## Self-Managed Teams

As evident from the term, as part of the empowerment movement and more egalitarian cultural values in an increasing number of organizations, teams are being set up or are evolving into being self-managed. A self-managed work team can be defined as “a group of employees who are responsible for managing and performing technical tasks that result in a product or service being delivered to an internal or external customer.” For example, at Hewlett-Packard and Harley-Davidson, self-managed teams are empowered to hire, organize, and purchase equipment without management direct approval. The results from these teams have reportedly been very positive.

Although there has been considerable such testimonial evidence of the value of self-managed teams, supporting research and documented experience are now starting to emerge. To date, both the research and practice literature has been quite favorable to self-managed teams. For example, recent studies of the empowerment of self-managed teams found increased job satisfaction, customer service, and team organizational commitment, and a comprehensive meta-analysis covering 70 studies concluded that self-managed teams had a positive impact on productivity is impressive, and more recent studies also find a more favorable impact on attitudes as well, but there are still practical problems to overcome. For example, an in-depth interview survey of 4500 teams at 500 organizations uncovered a host of individual and organizational factors behind self-managed team ineffectiveness. Individual problems included the following:

### Application Example

#### Greater Productivity through Cross-Functional Teams

Over the last five years, cross-functional teams have become increasingly popular – and for good reason. Research shows that by combining the abilities and skills of individuals, all of whom can contribute different inputs to the team, it is possible to reduce the time needed to get things done while simultaneously driving up productivity and profit.

Hewlett-Packard is a good example of the use of effective teams. Although the firm has long been admired as one of the best companies in America, its distribution organization was second rate. On average, it took 26 days for an H-P product to reach the customer, and employees had to shuttle information through a tangle of 70 computer systems. This is when the firm decided to reorganize the distribution process and reduce delivery time. Two H-P managers who assumed responsibility for the project assembled a team of 35 people from H-P and two other firms and then began examining the work flow. First, they looked at the way things were being done currently and began noting ways of eliminating work steps and shortening the process. Next, the team completed a two-week training and orientation program to familiarize team members with the current process. Then the team redesigned the entire work process and got everyone on the cross-functional team to buy in. Finally, they implemented the process and then made changes to correct errors remaining the



system. In the process, they were allowed to empower the workforce and managed to get delivery time down to eight days. This enabled the firm to cut its inventories by nearly 20 percent while increasing service levels to customers.

Another good example of cross-functional teams is provided by the emergency-trauma team at Massachusetts General Hospital. On an average day, about 200 patients show up at the emergency room, and about one-third of them end up in the trauma center. At the center there is a group of doctors, nurses, and technicians who come together and work as a “seamless” team. Each person begins a task – checking out a wound, running an IV, hooking up a machine. Then someone takes the lead and decides the strategy for treatment. Usually this is a doctor, but the direction can come from an intern or a nurse who is well versed in the applicable field. As an attending physician puts it, “Nobody bosses everybody around. If someone has a thought that’s useful, we are open to suggestions.” The job is intense, but it is also rewarding, and the personnel enjoy a high degree of professionalism and an environment in which they are able to use their abilities to deal with situations that require rapid and skilled decisions if lives are to be saved.

A third example is the U.S. Navy SEALs (the acronym refers to the commando’s all-terrain expertise: sea, air, land). These individuals are put through months of rigorous physical training in which each is taught how to use his skills to contribute to the team effort. Commenting on those who fail to measure up to the rigorous demand, one SEAL officer notes, “If you are the sort of person who sucks all the energy out of the group without giving anything back, then you are going to go away.” The result of the effort is a high performance team that is able to fulfill a host of different functions from teaching Namibian game wardens how to track down poachers to training Singaporean army regulars to combat potential terrorists.

In each case, the contribution of each team member greatly influences the success of the group effort. And by submerging their own identities in the group’s activities, each individual is able to achieve both personal and group goals.

1. Team members aren’t willing to give up past practices or set aside power and position.
2. Not all team members have the ability, knowledge, or skill to contribute to the group. Team functioning slows because some members shoulder more responsibility than others.
3. As team members, workers often face conflicts or challenges to their own personal beliefs. What works for the group often does not work for the individual.

Organizational-level problems uncovered by this survey included compensation and reward systems that still focused solely on individual performance: thus there was little incentive for teams to perform well. A survey of 300 large companies found that only 9 percent of them were pleased with their team-based compensation. The next and final section explores how to make all types of teams more effective.

## **How to Make Teams More Effective**

The effectiveness of teams may be measured based on the extent to which the team achieves its objectives and performs on behalf of the overall organization. Previous research has, at times, failed to note the ways in which teams are embedded in overall organizations. Consequently, studies of team effectiveness may not have revealed a complete picture of the nature of team success.

For teams to be more effective, they must overcome some of the problems and dysfunctions that groups in general encounter. Long-standing models of team effectiveness include creating the right environment where support, commitment, reward systems, communication systems, and physical space are all in sync to allow the team to work in a productive atmosphere. Tasks should be designed to be interdependent, team size should be kept small (10 members or less), and members should be selected based on both being

motivated and competent. Further, team cohesion should be built by either establishing homogenous groups or overcoming potential problems associated with diversity, by encouraging interaction and contact, and by making the group seem somewhat “exclusive,” so that the members are happy to be included. Also, team success naturally<sup>6</sup> tends to build greater cohesion, as does the presence of external competition and challenges. In particular, there is now enough research evidence and practical experience to indicate the following ways to enhance team effectiveness: (1) team building, (2) collaboration, (3) leadership, and (4) understanding of cultural issues in global situation.

*Team Building.* Team building begins with the understanding that work groups require time and training before they develop into productive and cohesive units. There is a definite learning curve in building an effective team. At first, some employees may be unwilling to join or but into the group. Only when they see success and team member satisfaction will this feeling change. Once established, some form of accountability must be present. Managers should expect to see some uncertainty in the team, which may last for up to two years, and during that time there may even be a dip in productivity. As the team matures, members learn the basics of team work, understand their roles more clearly, make more effective group decisions, and pursue group goals.

Effective team building establishes a sense of partnership and allows members to see the team as a unit and as an attractive work arrangement. Team building succeeds when individuals share collective intelligence and experience a sense of empowerment. Team building involves rapid learning, which takes place when there is a free-flowing generation of ideas. Quality team-building programs must fit with the corporate culture, have well-designed goals, allow members to translate skills to the workplace, often take place in a separate environment, and may even move employees outside of a comfort zone, but not so much that they cannot learn. Programs such as rope climbing and even cooking classes may help members of some teams bond and learn to work together.

An example of an effective team training approach would be the 10-step model shown in Table 14.3 GE, in its Electrical Distribution and Control division, has successfully used this training model. According to the trainers, the trained GE teams “are made up of dedicated people who enjoy working together, who maintain high standards, and who demonstrate high productivity and commitment to excellence.”

Besides going through the steps of training, teams also must be monitored and evaluated on a continuous basis. Five key areas that should be monitored and measured include: (1) the team’s mission, (2) goal achievements, (3) feelings of empowerment, (4) communications, and (5) roles and norms that are positive.

Team-building processes can take place in levels as high as corporate boards. To do so, members should be emotionally intelligent (see Chapter 9), rather than just have arisen requiring interdependent tasks. Members must learn to do what they promise, even when it means a personal sacrifice may be involved. Boards that function as effective teams can create a major competitive advantage for the firm.

*Collaboration.* Effective group leaders do not act alone. They assemble a group of highly talented people and figure out how to get the most creative efforts out of everyone by effectively organizing their collaborative efforts. The process of collaboration involves learning how to improve interpersonal interaction in group settings while committing to a common agenda.

Various developmental milestones may indicate that these collaborative skills are being learned and effectively applied.

TABLE 14.3 Training Guidelines for Developing Effective Self Managed Teams

Steps of training	Summary
1. Establish credibility.	The trainers must first establish their Knowledge and believability.
2. Allow ventilation.	The trainees must have their anxieties and and unresolved issues cleared before starting.
3. Provide an orientation.	The trainers should give specific verbal directions and provide clear expectations and models of behavior.
4. Invest in the process.	Early on, have the team identify its problems and concerns.
5. Set group goals.	The trainees create through consensus, their own mission statement and then set goals and specific activities and behaviors to accomplish these goals.
6. Facilitate the group process.	The trainees are taught about how groups function and are given techniques, such as nominal grouping and paired comparison.
7. Establish intragroup procedure.	This involves setting up a meeting format that might include reporting minutes, making announcements, discussing problems and issues, proposing solutions, taking action, and making new assignments.
8. Establish intergroup process.	Although the team is self-managed, leaders must be selected in order to interact with others, such as supervisors, managers, and other team.
9. Change the role of the trainers.	As the team becomes more experienced and empowered, the trainers take on a more passive roll.
10. End the trainers involvement.	At this point, the team is on its own and is self- managing.

Source: Adapted from Paul E. Brauchle and David W. Wright. "training Work team." *Training and Development*.

**Group Leadership.** Whether the assigned head of the team or the emergent leader in self-managed teams, there are two key ways in which leaders may affect performance of groups: (1) how they select members and (2) the tactics they use to affect those reducing special offices for the group heads, major differences in perks and privileges, and a decline in the use of designated leader titles. At the same time, leaders need to continue to be clear and decisive even as they work with different people, different teams, and different environments. Effective leaders known both how to teach and how to share the glory by acknowledging group success.

**Cultural/global issues.** There is evidence suggesting that certain cultures contain values that lead to resistance to teams. For example in one study of manager from Mexico, the great majority of leaders indicated they believe there would be significant problems if their companies adopted self-directed work teams. Clearly such cultural obstacles must be overcome to build effective teams. As revealed I a recent study of a German-Japanese joint venture, national culture remains a key factor in explaining patterns of relationships exhibited in teams. To facilitate such group efforts, recent research indicates that creating a "hybrid" team culture can be linked to improved performance. In this study, a U-shaped relationship existed between team heterogeneity and team effectiveness, where homogeneous and highly heterogeneous teams outperformed moderately heterogeneous groups in the long run. Therefore, as noted in the preceding leadership discussion, selection of group members seems to play an important role in the effectiveness of the group.

To help overcome some of the problems associated with more individualistic cultures, it is advisable to allow groups to form voluntarily or for members to join volunteers, it is advisable to allow groups to form voluntarily or for members to join voluntarily. Those who volunteer are more likely to be cooperative and experience greater satisfaction, motivation, and fewer disciplinary problems. Further, group goal-setting processes may also serve to increase motivation and satisfaction when they build group or collective efficacy.

As the review of these four processes indicates, there is a great deal left to be learned about how to build more effective teams. At the same time, the use of teams to accomplish tasks

continues to grow. This makes the study of teams and performance remains as an important area for more organizational behavior research.

## **Summary**

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Groups represent an important dynamic in the study and application of organizational behavior. Group formation, types, and process; the dynamics of informal roles and organization; and the dysfunctions of work groups and teams are all of particular relevance to the study of organizational behavior. Group formation can be theoretically explained by propinquity; as a relationship among activities, interactions, and sentiments” as a symmetrical balance between attraction and common attitudes: and as a reward- cost exchange. Participants in an organization also form into groups for very practical economic, security, and social reasons. Many different types of groups for very practical economic, security, and social reasons. Many different types of groups are found in modern organizations. Conceptually, there are primary groups, coalitions, and others such as membership and reference groups. Groups have been researched over the years, and findings from classic social psychology studies, such as the one conducted by Schachter, have implications for organizational behavior.

The last half of the chapter discusses and analyzes the dynamics of informal groups and teams. Informal norms and roles and the informal organization have been emphasized. More recently, the functional aspects have also been recognized.

The dynamics of the dysfunctions of groups and teams were examined in terms of norm violation resulting in antisocial behaviors, role ambiguity/conflict, group think conformity, the risky shift phenomenon, and social loafing. The remainder of the chapter focused on teams per se. Initially, most publicity was given to quality circles, but now self-managed teams are in the spotlight. Self-managed teams are beginning to be found in both manufacturing and service organizations. To date, self-managed teams have a quite successful track record. In addition to self-managed teams are beginning to be found in both manufacturing and service organizations. To date, self-managed teams have a quite successful track record. In addition to self-managed teams, cross-functional and effective teams requires long-standing principles regarding the creation of the proper environment in which support commitment, rewards, communication, physical space, group size, membership, and cohesion are emphasized. Then, team effectiveness may be enhanced using team-building programs, collaboration, and effective leadership and by accounting for cultural and global issues when teams are formed.

## Motivation Concepts

After studying this chapter you should be able to:

1. Outline the motivation process
2. Describe Maslow's needs hierarchy
3. Differentiate motivators from hygiene factors
4. List the characteristics that high achievers prefer in a job
5. Summarize the types of goals that increase performance
6. Discuss ways self-efficacy can be increased
7. State the impact of under rewarding employees
8. Clarify the key relationships in expectancy theory
9. Explain how the contemporary theories of motivation complement each other

## What Makes This Man Tick?

Kim Jong II-or “Dear Leader” as he prefers to be called- is commonly thought to be crazy. After all, he kidnapped a South Korean film director and his wife so they could film his biography. This bizarre behavior is scary for someone who claims to own nuclear weapons. But what motivates Kim Jong II to act in such a way?

Hedonism is one motivator. Kim scoots from palace to palace amidst a convoy of black Mercedes. He has all the latest toys and gadgets. He sends his chef to Tokyo for the world’s finest sushi, to Iran for caviar, to Singapore for papayas, and to Copenhagen for bacon. His wine cellar has a collection of 10,000 bottles. His daily rice is inspected grain-by-grain for chipped or defective pieces. Kim also hosts parties that screen the latest Hollywood films, and he is believed to own 20,000 movies. (The producers of Team America: World Police, which spoofed Kim, sent him a copy for his collection).

Kim also appears to be motivated by fear. He moves from palace to palace often, in Saddam Hussein-like fashion, to avoid assassination. He is “desperately worried” about his survival. He is reported to have said, “Without nuclear weapons, we will be attacked”. “Kim Jong II does not live in illusion,” said Hwang Jang-Yop, a former aide who defected to the United States. “If he thinks he can win, he will never hesitate to attack. He can’t stage a war because he knows only too well that he could not win. He will do whatever is best for him.” Hedonism and fear. Quite the package of motivators.

Motivation is one of the most frequently research topics OB. One reason for its popularity is revealed in a recent Gallup Poll, which found that a majority of U.S. employees-55 percent to be exact-have no enthusiasm for their work. Clearly, this suggests a problem, at least in the United States. The good news is that all this research provides us with considerable insights into how to improve motivation.

In this chapter, we’ll review the basics of motivation, asses a number of motivation theories, and provide an integrative model that shows how the best of these theories fit together.

### Defining Motivation

What is motivation? May be the place to begin is to say what motivation isn’t. Many people incorrectly view motivation as a personal trait-that is, some have it and others don’t. In practice, inexperienced managers often label employees who seem to lack motivation as lazy. Such a label assumes that an individual is always lazy or is lacking in motivation. Our knowledge of motivation tells us that this just isn’t true. Think about Kim Jong II. The man is highly motivated, just not motivated in the same direction as you and me. The question, then, is not usually whether someone is motivated, but what are they motivated by?

What we know is that motivation is the result of the interaction of the individual and the situation. Certainly, individual differ in their basic motivational drive. But the same student who finds it difficult to read a textbook for more than 20 minutes may devour a Harry Potter book in one day. For this student, the change in motivation is driven by the situation. So as we analyze the concept of motivation, keep in mind that the level of motivation varies both between individuals and within individuals at different times.

We define motivation as the processes that account for an individual’s intensity, direction, and persistence of effort toward attaining a goal. While general motivation is concerned with effort toward any goal, we’ll narrow the focus to organizational goals in order to reflect our singular interest in work-related behaviour.

The three key elements in our definition are intensity, direction, and persistence. Intensity is concerned with how hard a person tries. This is the element most of us focus on when we talk about motivation. However, high intensity is unlikely to lead to favourable job-performance outcomes unless the effort is channeled in a direction that benefits the organization. Therefore, we have to consider the quality of effort as well as its intensity. Effort that is directed toward, and consistent with, the organization’s goals is the kind of effort that we should be

seeking. Finally, motivation has a persistence dimension. This is a measure of how long a person can maintain effort. Motivated individuals stay with a task long enough to achieve their goal.

## Early Theories of Motivation

The 1950s were a fruitful period in the development of motivation concepts. Three specific theories were formulated during this period, which although heavily attacked and now questionable in terms of validity, are probably still the best-known explanations for employee motivation. These are the hierarchy of needs theory, Theories X and Y, and the two-factor theory. As you'll see later in this chapter, we have since developed more valid explanations of motivation, but you should know these early theories for at least two reasons: (1) They represent a foundation from which contemporary theories have grown, and (2) practicing managers still regularly use these theories and their terminology in explaining employee motivation.

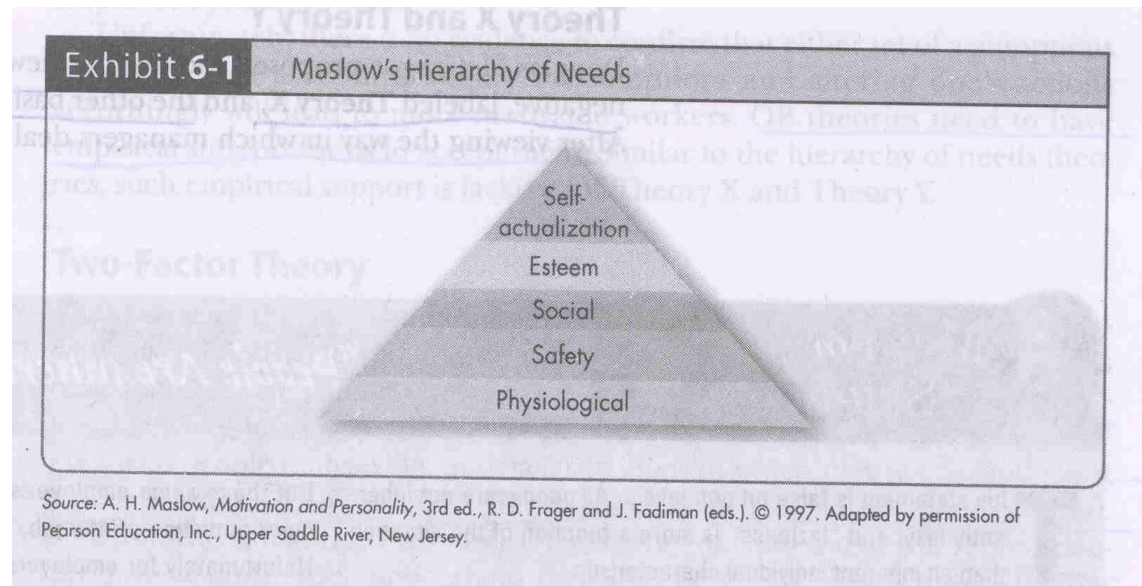
### Hierarchy of Needs Theory

It's probably safe to say that the most well-known theory of motivation is Abraham Maslow's hierarchy of needs. He hypothesized that within every human being there exists a hierarchy of five needs. These needs are:

1. **Physiological:** Includes hunger, thirst, shelter, sex and other bodily needs
2. **Safety:** Includes security and protection from physical and emotional harm
3. **Social:** Includes affection, belongingness, acceptance, and friendship
4. **Esteem:** Includes internal esteem factors such as self-respect, autonomy, and achievement; and external esteem factors such as status, recognition, and attention
5. **Self-actualization:** The drive to become what one is capable of becoming; includes growth, achieving one's potential, and self-fulfillment

As each of these needs becomes substantially satisfied, the next need becomes dominant. In terms of Exhibit 6-1, the individual moves up the steps of the hierarchy. From the standpoint of motivation, the theory would say that although no need is ever fully gratified, a substantially satisfied need no longer motivates. So if you want to motivate someone, according to Maslow, you need to understand what level of the hierarchy that person is currently on and focus on satisfying the needs at or above that level.

Maslow separated the five needs into higher and lower orders. Physiological and safety needs were described as **lower-order needs** and social, esteem, and self-actualization as **higher-order needs**. The differentiation between the two orders was made on the premise that higher-order needs are satisfied internally (within the person), whereas lower-order needs are predominantly satisfied externally (by things such as pay, union contracts, and tenure).



Maslow's needs theory has received wide recognition, particularly among practicing managers. This can be attributed to the theory's intuitive logic and ease of understanding. Unfortunately, however, research does not validate the theory. Maslow provided no empirical substantiation, and several studies that sought to validate the theory found no support for it.

Clayton Alderfer attempted to rework Maslow's need hierarchy to align it more closely with empirical research. His revised need hierarchy is labeled ERG theory. Alderfer argued that there are three groups of core needs-existence (similar to Maslow's physiological and safety needs), relatedness (similar to Maslow's social and status needs), and growth (similar to Maslow's esteem needs and self-actualization).

Unlike Maslow's theory, ERG does not assume that there exists a rigid hierarchy in which a lower need must be substantially gratified before one can move on. For example, ERG argues that a person can be working on growth needs even though existence or relatedness needs are unsatisfied. An individual could also be focusing on all three need categories simultaneously. Moreover, Alderfer believed that frustration in satisfying a higher-order need might lead to regression to a lower need. Despite these differences, empirical research hasn't been any more supportive of ERG theory than need hierarchy.<sup>8</sup>

Old theories, especially ones that are intuitively logical, apparently die hard. Although the need hierarchy theory and its terminology have remained popular with practicing managers, there is little evidence that need structures are organized along the dimensions proposed by Maslow or Alderfer, that unsatisfied needs motivate, or that a satisfied need activates movement to a new need level.

## **Theory X and Theory Y**

Douglas Mc Gregor proposed two distinct views of human beings: one basically negative, labeled Theory X, and the other basically positive, labeled Theory Y. After viewing the way in which managers dealt with employees, McGregor concluded that managers' views of the nature of human beings are based on a certain grouping of assumptions that they tend to mold their behavior toward employees according to these assumptions.

Under Theory X, the four assumptions held by managers are:

1. Employees inherently dislike work and, whenever possible, will attempt to avoid it.
2. Since employees dislike work, they must be coerced, controlled, or threatened with punishment to achieve goals.
3. Employees will avoid responsibilities and seek formal direction whenever possible.
4. Most workers place security above all other factors associated with work and will display little ambition.

## **Myth or Science?**

### **“People are inherently Laze”**

This statement is false on two levels. All people are not inherently lazy; and “laziness” is more a function of the situation than an inherent individual characteristics.

If this statement is meant to imply that all people are inherently lazy, the evidence strongly indicates the contrary. Many people today suffer from the opposite affliction-they're overly busy, overworked, and suffer from overexertion. Whether externally motivated or internally driven, a good portion of the labor force is anything but lazy.

Managers frequently draw the conclusion that people are lazy from watching some of their employees, who may be lazy at work. But these same employees are often quite industrious in one or more activities off the job.



People have different sets of needs. Unfortunately for employers, work often ranks low in its ability to satisfy individual needs. So the same employee who shirks responsibility on the job may work obsessively on reconditioning an antique car, maintaining an award-winning garden, perfecting bowling skills, or selling Amway products on weekends. Very few people are perpetually lazy. They merely differ in terms of the activities they most enjoy doing. And because work isn't important to everyone, they may appear lazy.

In contrast to these negative views about the nature of human beings, McGregor listed the four positive assumptions that he called Theory Y:

1. Employees can view work as being as natural as rest or play.
2. People will exercise self-direction and self-control if they are committed to the objectives.
3. The average person can learn to accept, even seek, responsibility,
4. The ability to make innovative decisions is widely dispersed throughout the population and is not necessarily the sole province of those in management positions.

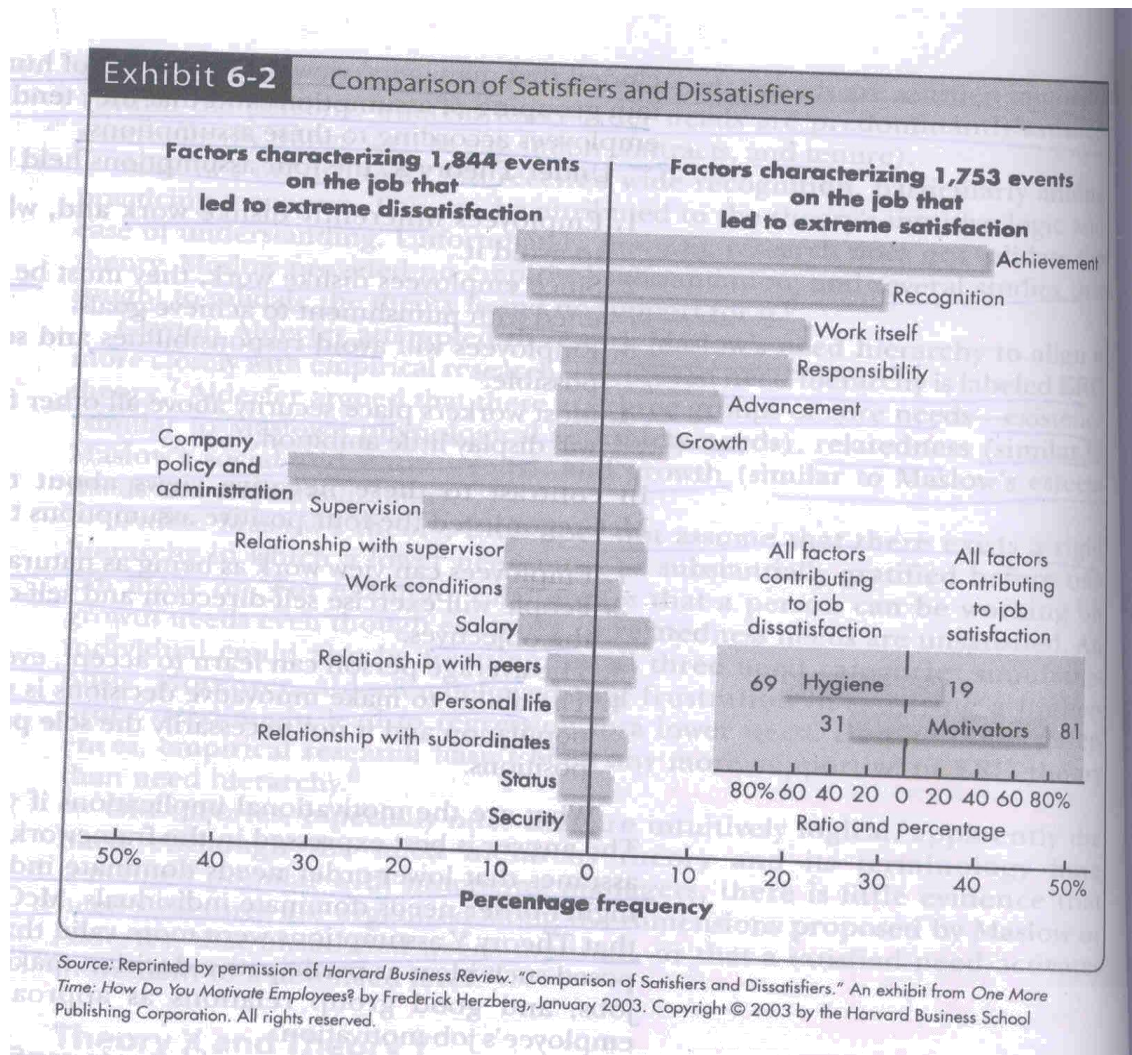
What are the motivational implications if you accept McGregor's analysis? The answer is best expressed in the framework presented by Maslow. Theory X assumes that lower-order needs dominate individuals. Theory Y assumes that higher-order needs dominate individuals. McGregor himself held to the belief that Theory Y assumptions were more valid than Theory X. Therefore, he proposed such ideas as participative decision making, responsible and challenging jobs, and good group relations as approaches that would maximize an employee's job motivation.

Unfortunately, there is no evidence to confirm that either set of assumptions is valid or that accepting Theory Y assumptions and altering one's actions accordingly will lead to more motivated workers. OB theories need to have empirical support for us to accept them. Similar to the hierarchy of needs theories, such empirical support is lacking for Theory X and Theory Y.

## **Two-Factor Theory**

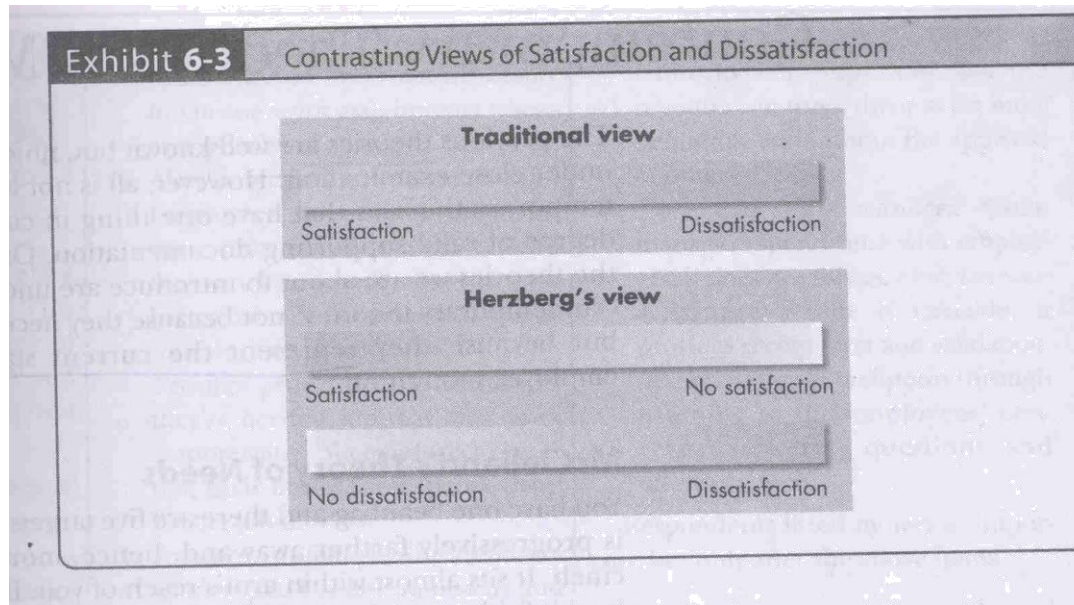
The two-factor theory-also called motivation-hygiene theory-was proposed by psychologist Frederick Herzberg.<sup>13</sup> In the belief that an individual's relation to work is basic and that one's attitude toward work can very well determine success or failure, Herzberg investigated the question, "What do people want from their jobs?" He asked people to describe, in detail, situations in which they felt exceptionally good or bad about their jobs. These responses were then tabulated and categorized.

From the categorized responses, Herzberg concluded that the replies people gave when they felt good about their jobs were significantly different from the replies given when they felt bad. As seen in Exhibit 6-2, certain characteristics tend to be consistently related to job satisfaction and others to job dissatisfaction. Intrinsic factors, such as advancement, recognition, responsibility, and achievement seem to be related to job satisfaction. Respondents who felt good about their work tended to attribute these factors to themselves. However, dissatisfied respondents tended to cite extrinsic factors, such as supervision, pay, company policies, and working conditions.



The data suggest, said Herzberg, that the opposite of satisfaction is not dissatisfaction, as was traditionally believed. Removing dissatisfying characteristics from a job does not necessarily make the job satisfying. As illustrated in Exhibit 6-3, Herzberg proposed that his findings indicated the existence of a dual continuum: The opposite of "Satisfaction" is "No satisfaction," and the opposite of "Dissatisfaction" is "No Dissatisfaction."

According to Herzberg, the factors leading to job satisfaction are separate and distinct from those that lead to job dissatisfaction. Therefore, managers who seek to eliminate factors that can create job dissatisfaction may bring about peace but not necessarily motivation. They will be placating their workforce rather than motivating them. As a result, conditions surrounding the job such as quality of supervision, pay, company policies, physical working conditions, relations with others, and job security were characterized by Herzberg as hygiene factors. When they're adequate, people will not be dissatisfied; neither will they be satisfied. If we want to motivate people on their jobs, Herzberg suggested emphasizing factors associated with the work itself or to outcomes directly derived from it, such as promotional opportunities, opportunities for personal growth, recognition, responsibility, and achievement. These are the characteristics that people find intrinsically rewarding.



The two-factor theory has not been well supported in the literature, and it has many detractors. The criticisms of the theory include the following:

- The procedure that Herzberg used is limited by its methodology. When things are going well, people tend to take credit themselves. Contrarily, they blame failure on the extrinsic environment.
- The reliability of Herzberg's methodology is questioned. Raters have to make interpretations, so they may contaminate the findings by interpreting one response in one manner while treating a similar response differently.
- No overall measure of satisfaction was utilized. A person may dislike part of a job yet still think the job is acceptable overall.
- The theory is inconsistent with previous research. The two-factor theory ignores situational variables.
- Herzberg assumed a relationship between satisfaction and productivity, but the research methodology he used looked only at satisfaction not at productivity. To make such research relevant, one must assume a strong relationship between satisfaction and productivity.

Regardless of criticism, Herzberg's theory has been widely read and few managers are unfamiliar with his recommendations.

It's important to realize that even though we may intuitively like a theory that does not mean that we should accept it. Many managers find need theories intuitively appealing, but remember at one time the world seemed intuitively flat. Sometimes science backs up intuition, and sometimes it doesn't. In the case of the two-factor theory-like need hierarchy-it didn't.

### **Contemporary Theories of Motivation**

The previous theories are well known but, unfortunately, have not held up well under close examination. However, all is not lost. There are a number of contemporary theories that have one thing in common-each has a reasonable degree of valid supporting documentation. Of course, this doesn't mean that the theories we are about to

introduce are unquestionably right. We call them “contemporary theories” not because they necessarily were developed recently, but because they represent the current state of thinking in explaining employee motivation.

### McClelland’s Theory of Needs

You have one beanbag and there are five targets set up in front of you. Each one is progressively farther away and, hence, more difficult to hit. Target A is a cinch. It sits almost within arm’s reach of you. If you hit it, you get \$2. Target B is a bit farther out, but about 80 per cent of the people who try can hit it. It pays \$4. Target C pays \$8, and about half the people who try can hit it. Very few people can hit Target D, but the payoff is \$16 if you do. Finally, Target E pays \$32 but it’s almost impossible to achieve. Which target would you try for? If you selected C, you’re likely to be a high achiever. Why? Read on.

McClelland’s theory of needs was developed by David McClelland and his associates. The theory focuses on three needs: achievement, power, and affiliation. They are defined as follows:

- **Need for achievement:** The drive to excel, to achieve in relation to a set of standards, to strive to succeed.
- **Need for power:** The need to make others behave in a way that they would not have behaved otherwise.
- **Need for affiliation:** The desire for friendly and close interpersonal relationships.

Some people have a compelling drive to succeed. They’re striving for personal achievement rather than the rewards of success per se. They have a desire to do something better or more efficiently than it has been done before. This drive is the achievement need (nAch). From research into the achievement need, McClelland found that high achievers differentiate themselves from others by their desire to do things better.<sup>16</sup> They seek situation in which they can attain personal responsibility for finding solutions to problems, in which they can receive rapid feedback on their performance so they can determine easily whether they are improving or not, and in which they can set moderately challenging goals. High achievers are not gamblers; they dislike succeeding by chance. They prefer the challenge of working at a problem and accepting the personal responsibility for success or failure rather than leaving the outcome to chance or the actions of others. Importantly, they avoid what they perceive to be very easy or very difficult tasks. They prefer tasks of intermediate difficulty.

High achievers perform best when they perceive their probability of success as being 0.5, that is, when they estimate that they have a 50-50 chance of success. They dislike gambling with high odds because they get no achievement satisfaction from happenstance success. Similarly, they dislike low odds (high probability of success) because then there is no challenge to their skills. They like to set goals that require stretching themselves a little.

The need for power (nPow) is the desire to have impact, to be influential and to control others. Individuals high in nPow enjoy being “in charge”, strive for influence over others, prefer to be placed into competitive and status oriented situations, and tend to be more concerned with prestige and gaining influence over others than with effective performance.

## JOB In the NEWS

### What Do Employees Want?

Believe it or not, money is rarely a prime motivator for employees. This was confirmed in a recent survey of 1,500 employees. Here are the top five things that employees considered important:

1. a learning activity and choice of assignment. Employees value learning opportunities in which they can gain skills to enhance their marketability. And they want to ability to choose work assignments whenever possible.

2. Flexible working hours and time off-Employees value their time and their time off. Flexibility around their work hours will allow them to better balance personal obligations with work responsibilities.
3. Personal praise. People like to feel they're needed and that their work is appreciated. Yet employees report that their bosses rarely thank them for the job they do.
4. Increased autonomy and authority in their job. Greater autonomy and authority tell employees that the organizations trusts them to act independently and without the approval of others.
5. Time with their manager. When managers spend time with employees, it does two things. First, because a manager's time is valuable, it provides recognition and validation. Second, it provides support through listening to the employees' concerns, answering questions, and offering advice.

Respondents listed money as important, but only after the above items.

The third need isolated by Mc Clelland is affiliation (nAff). This need has received the least attention from researchers. Individuals with a high affiliation motive strive for friendship, prefer cooperative situations rather than competitive ones, and desire relationships that involve a high degree of mutual understanding.

Relying on an extensive amount of research, some reasonably well-supported predictions can be made based on the relationship between achievement need and job performance. Although less research has been done on power and affiliation needs, there are consistent findings here, too.

First, as shown in Exhibit 6-4, individuals with a high need to achieve prefer job situations with personal responsibility, feedback, and an intermediate degree of risk. When these characteristics are prevalent, high achievers will be strongly motivated. The evidence consistently demonstrates, for instance, that high achievers are successful in entrepreneurial activities such as running their own businesses and managing a self-contained unit within a large organization.<sup>17</sup>

Second, a high need to achieve does not necessarily lead to being a good manager, especially in large organizations. People with a high achievement need are interested in how well they do personally and not in influencing others to do well. High-nAch salespeople do not necessarily make good sales managers, and the good general manager in a large organizations does not typically have a high need to achieve.<sup>18</sup>

Third, the needs for affiliation and power tend to be closely related to managerial success. The managers are high in their need for power and low in their need for affiliation. In fact, a high power motive may be a requirement for managerial effectiveness. Of course, what the cause is and what the effect is are arguable. It has been suggested that a high power need may occur simply as a function of one's level in a hierarchical organization. The latter argument proposes that the higher the level an individual rises to in the organization, the greater is the incumbent's power motive. As a result, powerful positions would be the stimulus to a high power motive.

Finally, employees have been successfully trained to stimulate their achievement need. Trainers have been effective in teaching individuals to think in terms of accomplishments, winning, and success, and then helping them to learn how to act in a high achievement way by preferring situations in which they have personal responsibility, feedback, and moderate risks. So if the job calls for a high achiever, management can select a person with a high nAch or develop its own candidate through achievement training.

### **Cognitive Evaluation Theory**

"It's strange," said Marcia. "I started work at the Humane Society as" a volunteer. I put in 15 hours a week helping people adopt pets. And I loved coming to work. Then, three months ago, they hired me full-time at \$11 an hour. I'm doing the same work I did before. But I'm not finding it near as much fun."

There's an explanation for Marcia's reaction. It's called cognitive evaluation theory and it proposes that the introduction of extrinsic rewards, such as pay, for work effort that was previously intrinsically rewarding due to the pleasure associated with the content of the work itself tends to decrease overall motivation. Cognitive evaluation theory has been extensively researched, and a large number of studies have been supportive. As we'll show, the major implications for this theory relate to the way in which people are paid in organizations, such as reinforcement theory.

Historically, motivation theorists generally assumed that intrinsic motivators such as achievement, responsibility, and competence were independent of extrinsic motivators such as high pay, promotions, good supervisor relations, and pleasant working conditions, but cognitive evaluation theory suggests otherwise. It argues that when extrinsic rewards are used by organizations as pay-offs for superior performance, the intrinsic rewards, which are derived from individuals doing what they like, are reduced. In other words, when extrinsic rewards are given to someone for performing an interesting task, it causes intrinsic interest in the task itself to decline.

Why would such an outcome occur? The popular explanation is that the individual experiences a loss of control over his or her own behavior so that the previous intrinsic motivation diminishes. Furthermore, the elimination of extrinsic rewards can produce a shift from an external to an internal explanation- in an individual's perception of causation of why he or she works on a task. If you're reading a novel a week because your English literature instructor requires you to, you can attribute your reading behavior to an external source. However, after the course is over, if you find yourself continuing to read a novel a week, your natural inclination is to say, "I must enjoy reading novels because I'm still reading one a week"

If the cognitive evaluation theory is valid, it should have major implications for managerial practices. It has been a truism among compensation specialists for years that if pay or other extrinsic rewards are to be effective motivators, they should be made contingent on an individual's performance. But, cognitive evaluation theorists would argue that this will only tend to decrease the internal satisfaction that the individual receives from doing the job. In fact, if cognitive evaluation theory is correct, it would make sense to make an individual's pay noncontingent on performance in order to avoid decreasing intrinsic motivation.

We noted earlier that the cognitive evaluation theory has been supported in a number of studies. Yet it has also been met with attacks, specifically on the methodology used in these studies<sup>25</sup> and in the interpretation of the findings. But where does this theory stand today. Can we say that when organizations use extrinsic motivators such as pay and promotions and verbal rewards to stimulate worker's performance they do so at the expense of reducing intrinsic interest and motivation in the work being done? The answer is not a simple "Yes" or "No".



## Exhibit 6-5



Source: From the Wall Street Journal, February 8, 1995. Reprinted with permission of Cartoon Features Syndicate.

Extrinsic rewards that are verbal (receiving praise from a supervisor or coworker) or tangible (money) can actually have different effects on people's intrinsic motivation. That is, verbal rewards increase intrinsic motivation, while tangible rewards undermine it. When people are told they will receive a tangible reward, they come to count on it and focus more on the reward than on the task. Verbal rewards, however, seem to keep people focused on the task and encourage them to do it better.

A more recent outgrowth of the cognitive evaluation theory is self-concordance, which considers the degree to which people's reason for pursuing goals are consistent with their interests and core values. For example, if individuals pursue goals because of an intrinsic interest, they are more likely to attain their goals and are happy even if they do not attain them. Why? Because the process of striving toward them is fun. In contrast, people who pursue goals for extrinsic reasons (money, status, or other benefits) are less likely to attain their goals and are less happy even when they do achieve them. Why? Because the goals are less meaningful to them. OB research suggests that people who pursue work goals for intrinsic reasons are more satisfied with their jobs, feel like they fit into their organizations better, and may perform better.

### How Managers Evaluate their Employees Depends on Culture

A RECENT STUDY FOUND INTERESTING DIFFERENCES in managers' perceptions of employee motivation. The study examined managers from three distinct cultural regions: North America, Asia, and Latin America. The results of the study revealed that North American managers perceive their employees as being motivated more by extrinsic factors (for example, pay) than intrinsic factors (for example, doing meaningful work). Asian managers perceive their employees as being motivated by both extrinsic and intrinsic factors, while Latin American managers perceive their employees as being motivated by intrinsic factors.

Even more interesting, these differences affected evaluations of employee performance. As expected, Asian managers focused on both types of motivation when evaluating their employees' performance, and Latin American managers focused on intrinsic motivation. Oddly, North American managers, though believing that

employees are motivated primarily by extrinsic factors, actually focused more on intrinsic factors when evaluating employee performance. Why the paradox? One explanation is that North Americans value uniqueness, so any deviation from the norm—such as being perceived to be unusually high in intrinsic motivation—is rewarded.

For Latin American managers, their focus on intrinsic motivation when evaluating employees may focus on a cultural norm termed *simpatia*, a tradition that compels employees display their internal feelings. Consequently, Latin American managers are more sensitized to these displays and can more easily notice their employees' intrinsic motivation.

So, from an employee perspective, the cultural background of your manager can play an important role in how you are evaluated.

What does all of this mean? It means choose your job carefully. Make sure that you're choosing to do something for reasons other than extrinsic rewards. For organizations, managers need to provide intrinsic rewards in addition to extrinsic incentive. In other words, make the work interesting, provide recognition, and support employee growth and development. Employees who feel that what they do is within their control and a result of free choice are likely to be more motivated by their work and committed to their employers.

### **Goal-Setting Theory**

Gene Broadwater, coach of the Hamilton High School cross-country team, gave his squad these last words before they approached the line for the league championship race: "Each one of you is physically ready. Now, get out there and do your best. No one can ever ask more of you than that."

You've heard the phrase a number of times yourself: "Just do your best. That's all anyone can ask for." But what does "do your best" mean? Do we ever know if we've achieved the vague goal? Would the cross-country runners have recorded faster times if Coach Broadwater had given each a specific goal to shoot for? Might you have done better in your high school English class if your parents had said, "You should strive for 85 percent or higher on all your work in English" rather than telling you to "do your best"? The research on goal-setting theory addresses these issues, and the findings, as you'll see, are impressive in terms of the effect that goal specificity, challenge, and feedback have on performance.

In the late 1960s, Edwin Locke proposed that intentions to work toward a goal are a major source of work motivation.<sup>31</sup> That is, goals tell an employee what needs to be done and how much effort will need to be expended. The evidence strongly supports the value of goals. More to the point, we can say that specific goals increase performance; that difficult goals, when accepted, result in higher performance than do easy goals; and that feedback leads to higher performance than does nonfeedback.

Specific goals produce a higher level of output than does the generalized goal of "do your best." Why? The specificity of the goal itself seems to act as an internal stimulus. For instance, when a trucker commits to making 12 round-trip hauls between Toronto and Buffalo, New York, each week, this intention gives him a specific objective to try to attain. We can say that, all things being equal, the trucker with a specific goal will outperform a counterpart operating with no goals or the generalized goal of "do your best".

If factors such as acceptance of the goals are held constant, we can also state that the more difficult the goal, the higher the level of performance. Of course, it's logical to assume that easier goals are more likely to be accepted. But once a hard task is accepted the employee can be expected to exert a high level of effort to try to achieve it.

But why are people more motivated by difficult goals? First, difficult goals direct our attention to the task at hand and away from irrelevant distractions. Challenging goals get our attention and thus tend to help us focus. Second, difficult goals energize us because we have to work harder to attain them. For example, think of your study habits. Do you study as hard for an easy exam as you do for a difficult one? Probably not. Third, when goals are difficult, people persist in trying to attain them. Finally, difficult goals lead us to discover strategies that help us perform the job or task more effectively. If we have to struggle for a way to solve a difficult problem, we often think of a better way to go about it.



People will do better when they get feedback on how well they are progressing toward their goals because feedback helps to identify discrepancies between what they have done and what they want to do; that is, feedback acts to guide behavior. But all feedback is not equally potent. Self-generated feedback-for which employees are able to monitor their own progress-has been shown to be a more powerful motivator than externally generated feedback.

If employees have the opportunity to participate in the setting of their own goals, will they try harder? The evidence is mixed regarding the superiority of participative over assigned goals. In some cases, participatively set goals elicited superior performance, while in other cases, individuals performed best when assigned goals by their boss. But a major advantage of participation may be in increasing acceptance of the goal itself as a desirable one toward which to work. As we'll note shortly, commitment's important. If participation isn't used, then the purpose and importance of the goal needs to be explained clearly by the individual assigning the goal.

Are there any contingencies in goal-setting theory, or can we take it as a universal truth that difficult and specific goals will always lead to higher performance? In addition to feedback, three other factors have been found to influence the goals-performance relationship. These are goal commitment, task characteristics, and national culture.

Goal-setting theory presupposes that an individual is committed to the goal; that is, an individual is determined not to lower or abandon the goal. Behaviourally, this means that an individual (a) believes he or she can achieve the goal and (b) wants to achieve it. Goal commitment is most likely to occur when goals are made public, when the individual has an internal locus of control (see Chapter 4), and when the goals are self-set rather than assigned.<sup>40</sup> Research indicates that goal-setting theory doesn't work equally well on all tasks. The evidence suggests that goals seem to have a more substantial effect on performance when tasks are simple rather than complex, well-learned rather than novel, and independent rather than interdependent. On interdependent tasks, group goals are preferable.

Finally, goal-setting theory is culture-bound. It's well adapted to countries like the United States and Canada because its key components align reasonably well with North American cultures. It assumes that employees will be reasonably independent (not too high a score on power distance), that managers and employees will seek challenging goals (low in uncertainty avoidance), and that performance is considered important by both (high in achievement). So don't expect goal setting to necessarily lead to higher employee performance in countries such as Portugal or Chile, where the opposite conditions exist.

Our overall conclusion is that intentions-as articulated in terms of difficult and specific goals-are a potent motivating force. The motivating power of goal-setting theory has been demonstrated on over 100 tasks involving more than 40,000 participants in many different kinds industries-from lumber, to insurance, to automobiles. Basically, setting specific, challenging goals for employees is the best thing managers can do to improve performance.

When it comes to your courses, what goals do you set for yourself? Do you want to prove yourself to your professor? Are you thinking about furthering your education? See the following Self-Assessment feature, and you can find out what drives you to study.

### **MBO Programs: Putting Goal-Setting Theory into Practice**

Goal-setting theory has an impressive base of research support. But as a manager, how do you make goal setting operation? One answer to that question is: Install a management by objectives (MBO) program. MTW Corp., a provider of software services mainly for insurance companies and state governments, has an MBO-type program.<sup>42</sup> Management attributes this program with helping the company average a 50 percent-a-year growth rate for 5 years in a row and cutting employee turnover to one-fifth of the industry norm.

Management by objectives emphasizes participatively set goals that are tangible, verifiable and measurable. MBO's appeal undoubtedly lies in its emphasis on converting overall organizational objectives into specific objectives for organizational units and individual members. MBO operationalizes the concept of objectives by devising a process by which objectives cascade down through the organization. As depicted in Exhibit 6-6, the organization's overall objectives are translated into specific objectives for each succeeding level (that is, divisional, departmental, individual) in the organization. But because lower-unit managers jointly participate in setting their own goals, MBO works from the "bottom up" as well as from the "top down." The result is a hierarchy that links objectives at one level to those at the next level. And for the individual employee, MBO provides specific personal performance objectives.



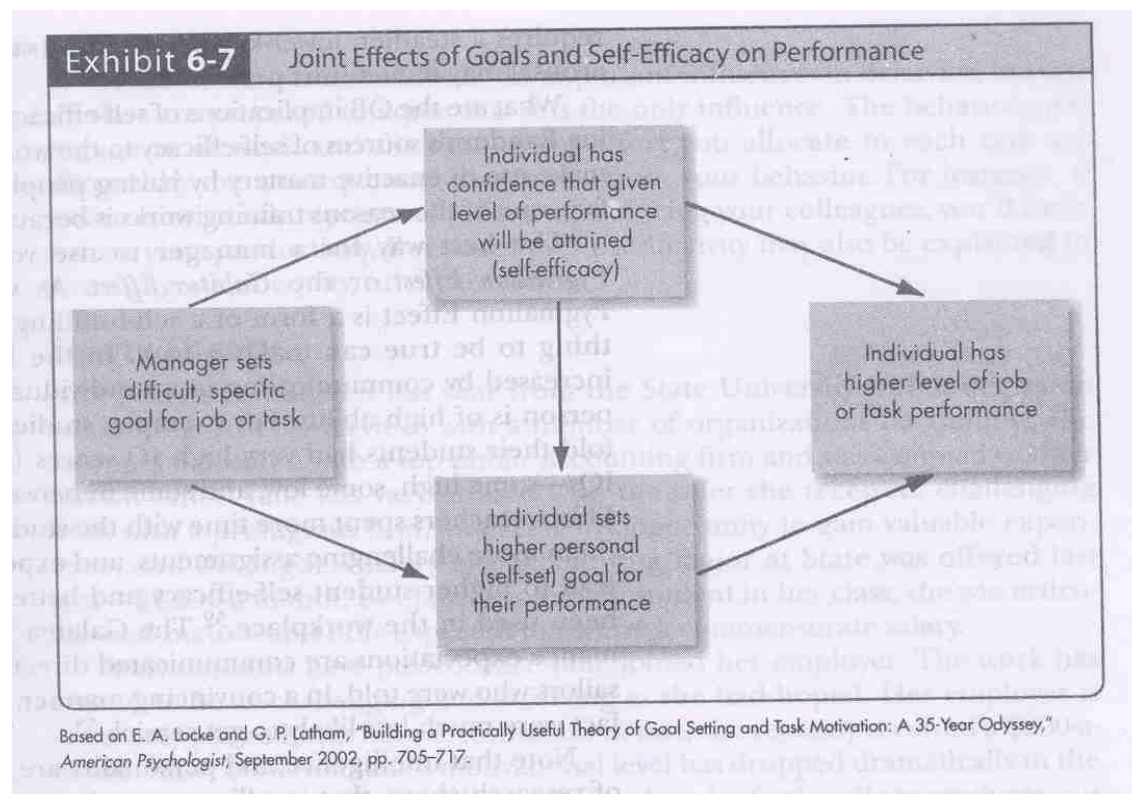
There are four ingredients common to MBO programmes. These are goal specificity, participation in decision making (including participation in the setting of goals or objectives), an explicit time period, and performance feedback. Many of the elements in MBO programs match goal-setting theory's propositions. For example, having an explicit time period to accomplish objectives matches goal-setting theory's emphasis on goal specificity. Similarly, we noted earlier that feedback about goal progress is a critical element of goal-setting theory. The only area of possible disagreement between MBO and goal-setting theory related to the issue of participation-MBO strongly advocates it, while goal-setting theory demonstrates that managers assigning goals is usually just as effective.

You'll find MBO programs in many business, health-care, educational, government, and nonprofit organizations. MBO's popularity should not be construed to mean that it always works. There are a number of documented cases in which MBO has been implemented but failed to meet management's expectations. When MBO doesn't work, the culprits tend to be factors such as unrealistic expectations regarding results, lack of commitment by top management, and an inability or unwillingness by management to allocate rewards based on goal accomplishment. Failures can also arise out of cultural incompatibilities. For instance, Fujitsu recently scrapped its MBO-type program because management found it didn't fit well with the Japanese culture's emphasis on minimizing risk and emphasizing long-term goals.

### Self-Efficacy Theory

Self-efficacy (also known as "social cognitive theory" or "social learning theory") refers to an individual's belief that he or she is capable of performing a task. The higher your self-efficacy, the more confidence you have in your ability to succeed in a task. So, in difficult situations, we find that people with low self-efficacy are more likely to lessen their effort or give up altogether, while those with high self-efficacy will try harder to master the challenge. In addition, individuals high in self-efficacy seem to respond to negative feedback with increased effort and motivation, while those low in self-efficacy are likely to lessen their effort when given negative feedback. How can managers help their employees achieve high levels of self-efficacy? By bringing together goal-setting theory and self-efficacy theory.

Goal-setting theory and self-efficacy theory don't compete with one another; rather, they complement each other. See Exhibit 6-7. As the exhibit shows, when a manager sets difficult goals for employees, this leads employees to have a higher level of self-efficacy and also leads them to set higher goals for their own performance. Why is this case? Research has shown that setting difficult goals for people communicates confidence. For example, imagine that your boss sets a high goal for you, and you learn it is higher than the goals she has set for your coworkers. How would you interpret this? As long as you don't feel you're being picked on, you probably would think, "Well, I guess my boss thinks I'm capable of performing better than others." This then sets into motion a psychological process where you're more confident in yourself (higher self-efficacy), and you set higher personal goals, causing you to perform better both in the workplace and outside it.



The researcher who developed self-efficacy theory, Albert Bandura, argues that there are four ways self-efficacy can be increased:<sup>49</sup>

1. enactive mastery
2. vicarious modeling
3. verbal persuasion
4. arousal

According to Bandura, the most important source of increasing self-efficacy is what he calls enactive mastery. Enactive mastery is gaining relevant experience with the task or job. If I've been able to do the job successfully in the past, then I'm more confident I'll be able to do it in the future.

The second source is vicarious modeling-or becoming more confident because you see someone else doing the task. For example, if my friend loses weight, then it increases my confidence that I can lose weight too. Vicarious modeling is most effective when you see yourself similar to the person you are observing. It doesn't increase my confidence in being able to play a difficult golf shot by watching Tiger Woods do it. But, if I watch a golfer with a handicap similar to mine, it's more persuasive.

The third source is verbal persuasion, which is becoming more confident because someone convinces you that you have the skills necessary to be successful. Motivational speakers use this tactic a lot.

Finally, Bandura argues that arousal increases self-efficacy. Arousal leads to an energized state, which drives a person complete the task. The person gets "psyched up" and performs better. But when arousal is not relevant, then arousal hurts performance. In other words, if the task is something that requires a steadier, lower-key perspective (say, carefully editing a manuscript), arousal may in fact hurt performance.

What are the OB implications of self-efficacy theory? Well, it's a matter of applying Bandura's sources of self-efficacy to the work setting. Training programs often make use of enactive mastery by having people practice and build their skills. In fact, one of the reasons training works is because it increases self-efficacy.

The best way for a manager to use verbal persuasion is through the Pygmalion Effect or the Galatea Effect. As we discussed, the Pygmalion Effect is a form of a self-fulfilling prophecy where believing something to be true can make it true. In the Pygmalion Effect, self-efficacy is increased by communicating to an individual's teacher or supervisor that the person is of high ability. For example, studies were done where teachers were told their students had very high IQ scores (when in fact they had a range of IQs-some high, some low, and some in between). Consistent with a Pygmalion Effect, teachers spent more time with the students they thought were smart, gave them more challenging assignments, and expected more of them-all of which lead to higher student self-efficacy and better student grades. This also has been used in the workplace. The Galatea Effect occurs when high performance expectations are communicated directly to the employee. For example, sailors who were told, in a convincing manner, that they would not get seasick in fact were much less likely to get seasick.

Note that intelligence and personality are absent from Bandura's list. A lot of research shows that intelligence and personality (especially conscientiousness and emotional stability) can increase self-efficacy. Those individual traits are so strongly related to self-efficacy (people who are intelligent, conscientiousness, and emotionally stable are much more likely to have high self-efficacy than those who score low on these characteristics) that some researchers would argue self-efficacy does not exist. What this means is that self-efficacy may simply be a byproduct of a smart person with a confident personality and the term self-efficacy is superfluous and unnecessary. Although Bandura strongly disagrees with this conclusion, more research on the issue is needed.

## **Reinforcement Theory**

A counterpoint to goal-setting theory is reinforcement theory. The former is a cognitive approach, proposing that an individual's purposes direct his or her action. In reinforcement theory, we have behavioristic approach, which argues that reinforcement conditions behavior. The two are clearly at odds philosophically. Reinforcement theorists see behavior as being environmentally caused. You need not be concerned, they would

argue, with internal cognitive events; what controls behavior are reinforcers-any consequence that, when immediately following a response, increase the probability that the behavior will be repeated.

Reinforcement theory ignores the inner state of the individual and concentrates solely on what happens to a person when he or she takes some action. Because it does not concern itself with initiating behaviour, it is not, strictly speaking, a theory of motivation. But it does provide a powerful means of analysis of what controls behavior, and it is for this reason that it is typically considered in discussions of motivation.

We have discussed the reinforcement process in detail. Although it's clear that so-called reinforcers like pay can motivate people, it's just as clear that for people the process is much more complicated than stimulus-response. In its pure form, reinforcement theory ignores feelings, attitudes, expectations, and other cognitive variables that are known to impact behavior. In fact, some researchers look at the same experiments that reinforcement theorists use to support their position and interpret the findings in a cognitive framework.<sup>57</sup>

Reinforcement is undoubtedly an important influence on behaviour, but few scholars are prepared to argue that it is the only influence. The behaviors you engage in at work and the amount of effort you allocate to each task are affected by the consequences that follow from your behavior. For instance, if you're consistently reprimanded for outproducing your colleagues, you'll likely reduce your productivity. But your lower productivity may also be explained in terms of goals, inequity, or expectancies.

### **Equity Theory**

Jane Pearson graduated from the State University with a degree in accounting. After interviews with a number of organizations on campus, she accepted a position with a top public accounting firm and was assigned to their Boston office. Jane was very pleased with the offer she received: challenging work with a prestigious firm, an excellent opportunity to gain valuable experience, and the highest salary any accounting major at State was offered last year-\$4,550 a month. But Jane was the top student in her class; she was articulate and mature and fully expected to receive a commensurate salary.

Twelve months have passed since Jane joined her employer. The work has proved to be as challenging and satisfying as she had hoped. Her employer is extremely pleased with her performance; in fact, she recently received a \$200-a month raise. However, Jane's motivational level has dropped dramatically in the past few weeks. Why?

Her employer has just hired a fresh college graduate out of State University, who lacks the 1-year experience Jane has gained, for \$4,800 a month-\$50 more than Jane now makes! It would be an understatement to describe Jane in any other terms than irate. Jane is even talking about looking for another job.

Jane's situation illustrates the role that equity plays in motivation. Employees make comparisons of their job inputs (for example, effort, experience, education, competence) and outcomes (for example, salary levels, raises, recognition) relative to those of others. We perceive that we get from a job situation (outcomes) in relation to what we put into it (inputs), and then we compare our outcome-output ratio with the outcome-input ratio of relevant others. This is shown in Exhibit 6-8. If we perceive our ratio to be equal to that of the relevant others with whom we compare ourselves, a state of equity is said to exist. We perceive our situation as fair-that justice prevails. When we see the ratio as unequal, we experience equity tension. When we see ourselves as underrewarded, the tension creates anger; when overrewarded, the tension creates guilt. J. Stacy Adams has proposed that this negative state of tension provides the motivation to do something to correct it.<sup>58</sup>

## Exhibit 6-8

## Equity Theory

### Ratio Comparisons\*

$$\frac{O_A}{I_A} < \frac{O_B}{I_B}$$

Inequity due to being underrewarded

$$\frac{O_A}{I_A} = \frac{O_B}{I_B}$$

Equity

$$\frac{O_A}{I_A} > \frac{O_B}{I_B}$$

Inequity due to being overrewarded

\*Where  $\frac{O_A}{I_A}$  represents the employee; and  $\frac{O_B}{I_B}$  represents relevant others.

The referent that an employee selects adds to the complexity of equity theory.<sup>59</sup> There are four referent comparisons that an employee can use:

1. Self-inside: An employee's experiences in a different position inside the employee's current organization
2. Self-outside: An employee's experiences in a situation or position outside the employee's current organization
3. Other-inside: Another individual or group of individuals inside the employee's organization
4. Other-outside: Another individual or group of individuals outside the employee's organization

Employees might compare themselves to friends, neighbors, coworkers, or colleagues in other organizations or compare their present job with past jobs they themselves have had. Which referent an employee chooses will be influenced by the information the employee holds about referents as well as by the attractiveness of the referent. This has led to focusing on four moderating variables—gender, length of tenure, level in the organizations, and amount of education or professionalism.

Research shows that both men and women prefer same-sex comparisons. The research also demonstrates that women are typically paid less than men in comparable jobs and have lower pay expectations than men for the same work. So a woman who uses another woman as a referent tends to calculate a lower comparative standard. This leads us to conclude that employees in jobs that are not sex segregated will make more cross-sex comparisons than those in jobs that are either male or female dominated. This also suggests that if women are tolerant of lower pay, it may be due to the comparative standard they use. Of course, employer's stereotypes about women (for example, the belief that women are less committed to the organization, or that "Women's work is less valuable") also may contribute to the pay gap.

Employees with short tenure in their current organizations tend to have little information about others inside the organization, so that rely on their own personal experiences. However, employees with long tenure rely more heavily on coworkers for comparison. Upper-level employees, those in the professional ranks, and those with higher amounts of education tend to have better information about people in other organizations. Therefore, these types of employees will make more other-outside comparisons.

Based on equity theory, when employees perceive inequity, they can be predicted to make one of six choices.

1. Change their inputs (for example, don't exert as much effort)
2. Change their outcomes (for example, individuals paid on a piece-rate basis can increase their pay by producing a higher quantity of units of lower quality)



3. Distort perceptions of self (for example, "I used to think I worked at a moderate pace but now I realize that I work a lot harder than everyone else.")
4. Distort perceptions of others (for example, "Mike's job isn't as desirable as I previously thought it was")
5. Choose a different referent (for example, "I may not make as much as my brother-in-law, but I'm doing a lot better than my Dad did when he was my age".)
6. Leave the field (for example, quit the job)

The theory establishes the following propositions relating to inequitable pay:

- A. Given payment by time, over rewarded employees will produce more than will equitably paid employees. Hourly and salaried employees will generate high quantity or quality of production in order to increase the input side of the ratio and bring about equity.
- B. Given payment by quantity of production, over rewarded employees will produce fewer, but higher - quality, units than will equitably paid employees. Individuals paid on a piece-rate basis will increase their effort to achieve equity, which can result in greater quality or quantity. However, increases in quantity will only increase inequity, since every unit produced results in further overpayment. Therefore, effort is directed toward increasing quality rather than increasing quantity.
- C. Given payment by time, under rewarded employees will produce less or poorer quality of output. Effort will be decreased, which will bring about lower productivity or poorer-quality output than equitably paid subjects.
- D. Given payment by quantity of production, under rewarded employees will produce a large number of low-quality units in comparison with equitably paid employees. Employees on piece-rate pay plans can bring about equity because trading off quality of output quantity will result in an increase in rewards with little or no increase in contributions.

Some of these propositions have been supported, but other ones haven't. First, inequities created by overpayment do not seem to have a very significant impact on behavior in most work situations. Apparently, people have a great deal more tolerance of overpayment inequities than of underpayment inequities or are better able to rationalize them. It's pretty damaging to a theory when one-half of the equation (how people respond to over reward) falls apart. Second, not all people are equity sensitive. For example, there is a small part of the working population who actually prefer that their outcome-input ratios be less than the referent comparison's. Predictions from equity theory are not likely to be very accurate with these "benevolent types".

It's also important to note that while most research on equity theory has focused on pay, employees seem to look for equity in the distribution of other organizational rewards. For instance, it has been shown that the use of high-status job titles well as large and lavishly furnished offices may function as outcomes for some employees in their equity equation.

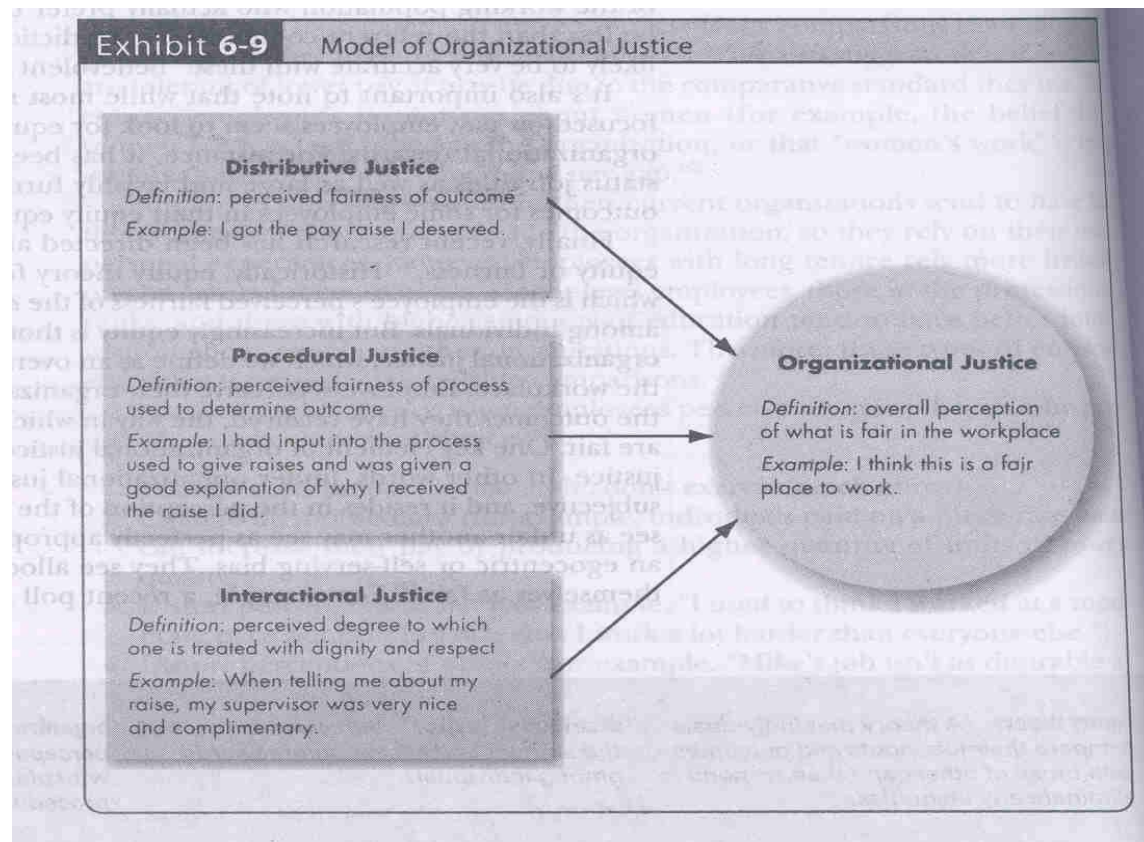
Finally, recent research has been directed at expanding what is meant by equity or fairness. Historically, equity theory focused on distributive justice, which is the employee's perceived fairness of the amount and allocation of rewards among individuals. But increasingly equity is thought of from the standpoint of organizational justice, which we define as an overall perception of what is fair in the workplace. Employees perceive their organizations as just when they believe the outcomes they have received, the way in which the outcomes were received, are fair. One key element of organizational justice is an individual's perception of justice. In other words, under organizational justice is an individual's perception of justice. In other words, under organizational justice, fairness or equity can be subjective, and it resides in the perception of the person. What one person may see as unfair another may see as perfectly appropriate. In general, people have an egocentric or self-serving bias. They see allocations or procedure favoring themselves as fair. For example, a recent poll showed that 61 per cent of all respondents say that they are personally paying their fair share of taxes, but an almost equal number (54 percent) of those polled feel the system as a whole is unfair, saying that some people skirt the system. Fairness often resides in the eye of the beholder, and we tend to be fairly self-serving about what we see as fair.

Beyond its focus on perceptions of fairness, the other key element of organizational justice is the view that justice is multidimensional. Organizational justice argues that distributive justice is important. For example, how much we get paid, relative to what we think we should be paid (distributive justice), is obviously important. But,

according to justice researchers, how we get paid is just as important. Exhibit 6-9 shows a model of organizational justice.

Beyond distributive justice, the key addition under organizational justice was procedural justice-which is the perceived fairness of the process used to determine the distribution of rewards. Two key elements of procedural justice are process control and explanation. Process control is the opportunity to present one's point of view about desired outcomes to decision makers. Explanations are clear reason given to a person by management for the outcome. Thus, for employees to see a process as fair, they need to feel they have some control over the outcome and feel they were given an adequate explanation about why the outcome occurred. Also for procedural fairness, it's important that a manager is consistent (across people and over time), is unbiased, makes decision based on accurate information, and is open to appeals.

Research shows that the effects of procedural justice become more important when distributive justice is lacking. This makes sense, if we don't get what we want, we tend to focus on why. For example, if your supervisor gives a cushy office to coworkers instead of you, you're much more focused on your supervisor's treatment of you than if you had gotten the office. Explanations are beneficial when they take the form of post-hoc excuses (admitting that the act is unfavorable but denying sole responsibility for it) rather than justifications (accepting full responsibility, but denying that the outcome is unfavorable or inappropriate). In the office example, an excuse would be, "I know this is bad. I wanted to give you the office but it was not my decision" and a justification would be, "Yes, I decided to give the office to Sam, but having the corner office is not that big of a deal."



A recent addition to research on organizational justice is interactional justice, which is the individual's perception of the degree to which he or she is treated with dignity, concern, and respect. When people are treated in an unjust manner (at least in their own eyes), they respond by retaliating (for example, badmouthing a supervisor). Because interactional justice or injustice is intimately tied to the conveyer of the information (usually one's supervisor), whereas procedural injustice often results from impersonal policies, one would expect perceptions of



injustice often results from impersonal policies, one would expect perceptions of injustice to be more closely related to one's supervisor. Generally, that's what the evidence suggests.

Of these three forms of justice, distributive justice is most strongly related to satisfaction with outcomes (for example, satisfaction with pay) and organizational commitment. Procedural justice relates most strongly to job satisfaction, employee trust, withdrawal from the organization, job performance, and citizenship behaviors. There is less evidence on interactional justice.<sup>74</sup>

Managers should consider openly sharing information on how allocation decisions are made, following consistent and unbiased procedures, and engaging in similar practices to increase the perception of procedural justice. By having an increased perception of procedural fairness, employees are likely to view their bosses and the organization positively even if they are dissatisfied with pay, promotions, and other personal outcomes.

In conclusion, equity theory predicts that, for most employees, motivation is influenced significantly by others' rewards as well as by one's own rewards. But some key issues are still unclear. For instance, how do employees handle conflicting equity signals, such as when unions point to other employee groups who are substantially better off, while management argues the opposite? How do employees define inputs and outcomes? How do they combine and weigh their inputs and outcomes to arrive at a judgment of equity across various outcomes? And when and how does the perception of the inputs and outcomes change over time? Because of these problems, most researchers today tend to focus solely on the perception of what's fair, rather than trying to figure out whether a person's outcome was objectively fair compared to the inputs. This is why, today, most researchers study organizational justice rather than equity theory per se.

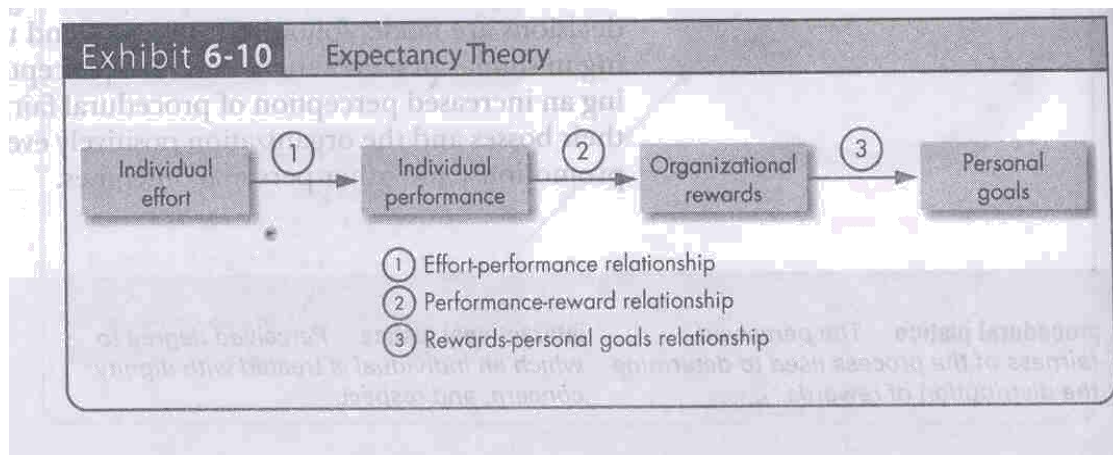
## **Expectancy Theory**

Currently, one of the most widely accepted explanations of motivation is Victor Vroom's expectancy theory. Although it has its critics, most of the evidence is supportive of the theory.<sup>77</sup>

Expectancy theory argues that the strength of a tendency to act in a certain way depends on the strength of an expectation that the act will be followed by a given outcome and on the attractiveness of that outcome of the individual. In more practical terms, expectancy theory says that employees will be motivated to exert a high level of effort when they believe that effort will lead to a good performance appraisal; that a good appraisal will lead to organizational rewards such as a bonus, a salary increase, or a promotion; and that the rewards will satisfy the employees' personal goals. The theory, therefore, focuses on three relationships.

1. Effort-performance relationship. The probability perceived by the individual that exerting a given amount of effort will lead to performance.
2. Performance-reward relationship. The degree to which the individual believes that performing at a particular level will lead to the attainment of a desired outcome.
3. Rewards-personal goals relationship. The degree to which organizational rewards satisfy an individual's personal goals or needs and the attractiveness of those potential rewards for the individual.

Expectancy theory helps explain why a lot of workers aren't motivated on their jobs and do only the minimum necessary to get by. This is evident when we look at the theory's three relationship in a little more detail. We present them as questions employees need to answer in the affirmative if their motivation is to be maximized.



First, if I give a maximum effort, will it be recognized in my performance appraisal? For a lot of employees, the answer is “No”. Why? Their skill level may be deficient, which means that no matter how hard they try, they’re not likely to be a high performer. The organization’s performance appraisal system may be designed to assess nonperformance factors such as loyalty, initiative, or courage, which means more effort won’t necessarily result in a higher evaluation. Still another possibility is that employees, rightly or wrongly, perceives that the boss doesn’t like them. As a result, they expect to get a poor appraisal regardless of level of effort. These examples suggest that one possible source of low employee motivation is the belief by employees that no matter how hard they work, the likelihood of getting a good performance appraisal is low.

Second, if I get a good performance appraisal, will it lead to organizational rewards? Many employees see the performance-reward relationship in their job as weak. The reason is that organizations reward a lot of things besides just performance. For example, when pay is allocated to employees based on factors such as seniority, being cooperative, or for “killing up” to the boss, employees are likely to see the performance-reward relationship as being weak and demotivating.

Finally, if I’m rewarded, are the rewards ones that I find personally attractive? The employee works hard in hope of getting a promotion but gets a pay raise instead. Or the employee wants a more interesting and challenging job but receives only a few words of praise. Or the employee puts in extra effort to be relocated to the company’s Paris office but instead is transferred to Singapore. These examples illustrate the importance of the rewards being tailored to individual employee needs. Unfortunately, many managers are limited in the rewards they can distribute, which makes it difficult to individualize rewards. Moreover, some managers incorrectly assume that all employees want the same thing, thus overlooking the motivational effects of differentiating rewards. In either case, employee motivation is submaximized.

In summary, the key to expectancy theory is the understanding of an individual’s goals and the linkage between effort and performance, between performance and rewards, and, finally, between the rewards and individual goal satisfaction. As a contingency model, expectancy theory recognizes that there is no universal principle for explaining everyone’s motivations. In addition, just because we understand what needs a person seeks to satisfy does not ensure that the individual perceives high performance as necessarily leading to the satisfaction of these needs.

Does expectancy theory work? Attempts to validate the theory have been complicated by methodological, criterion, and measurement problems. As a result, many published studies that purport to support or negate the theory must be reviewed with caution. Importantly, most studies have failed to replicate the methodology as it was originally proposed. For example, the theory proposes to explain different levels of effort from the same person under different circumstances, but almost all replication studies have looked at different people. Correcting for this flaw has greatly improved support for the validity of expectancy theory. Some critics suggest that the theory has only limited use, arguing that it tends to be more valid for predicting in situations in which effort-performance and performance-reward linkages are clearly perceived by the individual.<sup>80</sup> Because few individuals perceive a high correlation between performance and rewards in their jobs, the theory tends to be idealistic. If organizations actually

rewarded individuals for performance rather than according to such criteria as seniority, effort, skill level, and job difficulty, then the theory's validity might be considerably greater. However, rather than invalidating expectancy theory, this criticism can be used in support of the theory, because it explains why a significant segment can be used in support of the theory, because it explains why a significant segment of the workforce exerts low levels of effort in carrying out job responsibilities.

### **Integrating Contemporary Theories of Motivation**

We've looked at a lot of motivation theories in this chapter. The fact that a number of these theories have been supported only complicates the matter. How simple it would have been if, after presenting half-a-dozen theories, only one was found valid. But the theories we presented are not at all in competition with one another. Because one is valid doesn't automatically make the others invalid. In fact, many of the theories presented in this chapter are complementary. The challenge is now to tie these theories together to help you understand their interrelationships.

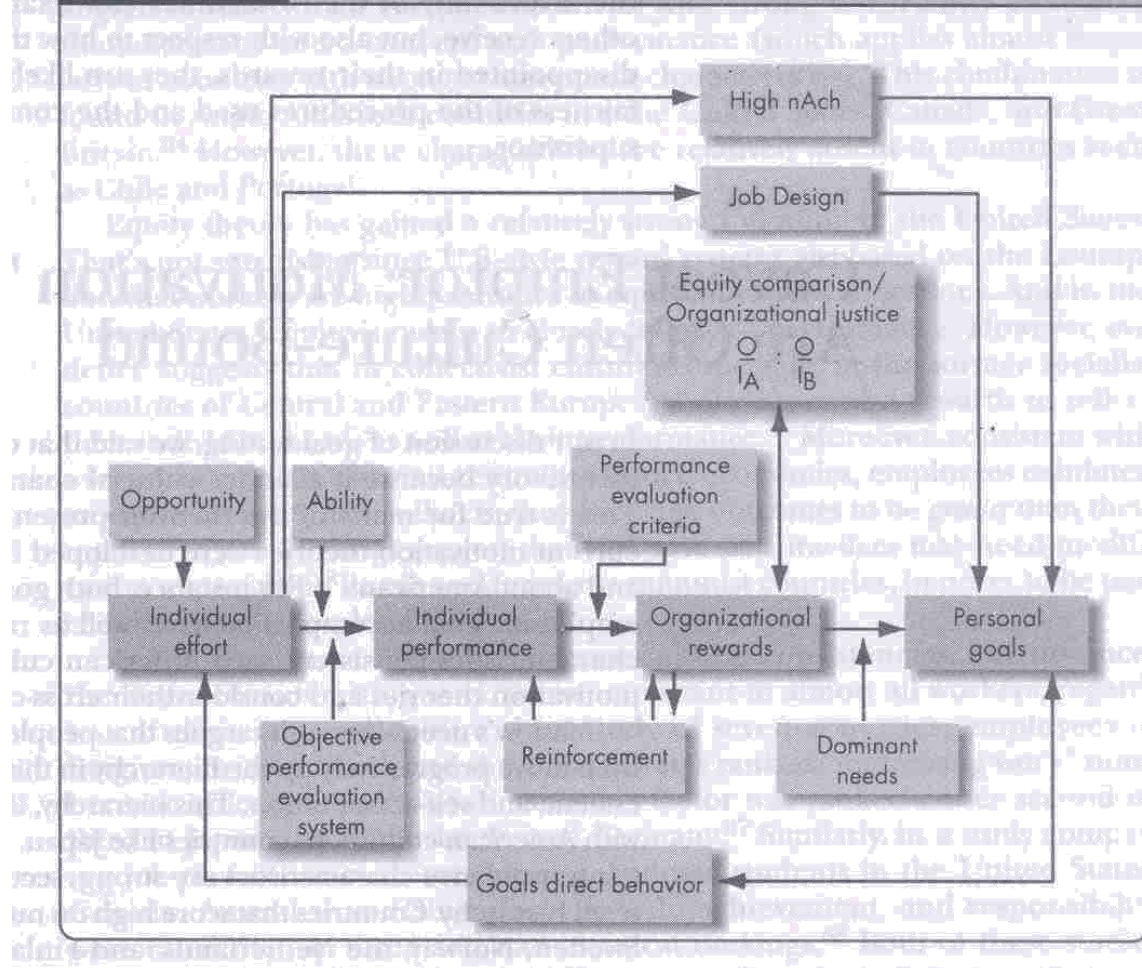
Exhibit 6-11 presents a model that integrates much of what we know about motivation. Its basic foundation is the expectancy model shown in Exhibit 6-10. Let's work through Exhibit 6-11.

We begin by explicitly recognizing that opportunities can either aid or hinder individual effort. The individual effort box also has another arrow leading into it. This arrow flows out of the person's goals. Consistent with goal-setting theory; this goals-effort loop is meant to remind us that goals direct behavior.

Expectancy theory predicts that employees will exert a high level of effort if they perceive that there is a strong relationship between effort and performance, performance and rewards, and rewards and satisfaction of personal goals. Each of these relationships, in turn, is influenced by certain factors. For effort to lead to good performance, the individual must have the requisite ability to perform, and the performance appraisal system that measures the individual's performance must be perceived as being fair and objective. The performance-reward relationship will be strong if the individual perceives that it is performance (rather than seniority, personal favorites, or other criteria) that is rewarded. If cognitive evaluation theory were fully valid in the actual workplace, we would predict here that basing rewards on performance should decrease the individual's intrinsic motivation. The final link in expectancy theory is the reward-goals relationship. Motivation would be high to the degree that the rewards-goals relationship. Motivation would be high to the degree that the rewards an individual received for high performance satisfied the dominant needs consistent with individual goals.

**Exhibit 6-11**

**Integrating Contemporary Theories of Motivation**



A closer look at Exhibit 6-11 will also reveal that the model considers achievement motivation, job design, reinforcement, and equity theories/organizational justice. The high achiever is not motivated by the organization's assessment of performance or organizational rewards, hence the jump from effort to personal goals for those with a high nAch. Remember, high achievers are internally driven as long as the jobs they are doing provide them with personal responsibility, feedback, and moderate risks. They are not concerned with the effort performance, performance-rewards, or rewards-goal linkages.

Reinforcement theory enters our model by recognizing that the organization's rewards reinforce the individual's performance. If management has designed a reward system that is seen by employees as "paying off" for good performance, the rewards will reinforce and encourage continued good performance. Rewards also play the key part in organizational justice research. Individuals will judge the favourability of their outcomes (for example, their pay) relative to what others receive, but also with respect to how they are treated-when people are disappointed in their rewards, they are likely to be sensitive to the perceived fairness of the procedures used and the consideration given to them by their supervisor.

**Caveat Emptor: Motivation Theories are often Culture-Bound**

In our discussion of goal setting, we said that care needs to be taken in applying this theory because it assumes cultural characteristics that are not universal. This is true for many of the theories presented in this chapter because most current motivation theories were developed in the United States by Americans and about Americans. For instance, both goal-setting and expectancy theories emphasize goal accomplishment as well as rational and

individual thought-characteristics consistent with American culture. Let's take a look at several motivation theories and consider their cross-cultural transferability.

Maslow's needs hierarchy argues that people start at the physiological level and then move progressively up the hierarchy in this order: physiological, safety, social esteem, and self-actualization. This hierarchy, if it has any application at all, aligns with American culture. In countries like Japan, Greece, and Mexico, where uncertainty avoidance characteristics are strong, security needs would be on top of the need hierarchy. Countries that score high on nurturing characteristics—Denmark, Sweden, Norway, the Netherlands, and Finland—would have social needs on top. We would predict, for instance, that group work will motivate employees more when the country's culture scores high on the nurturing criterion.

Another motivation concept that clearly has an American bias is the achievement need. The view that a high achievement need acts as an internal motivator presupposes two cultural characteristics—a willingness to accept a moderate degree of risk (which excludes countries with strong uncertainty avoidance characteristics) and a concern with performance (which applies almost singularly to countries with strong achievement characteristics). This combination is found in Anglo-American countries like the United States, Canada, and Great Britain. However, these characteristics are relatively absent in countries such as Chile and Portugal.

Equity theory has gained a relatively strong following in the United States. That's not surprising since U.S. style reward systems are based on the assumption that workers are highly sensitive to equity in reward allocations. And in the United States, equity is meant to closely tie pay to performance. However, evidence suggests that in collectivist cultures, especially in the former socialist countries of Central and Eastern Europe, employees expect rewards to reflect their individual needs as well as their performance.

Moreover, consistent with a legacy of communism and centrally planned economies, employees exhibited an entitlement attitude—that is, they expected outcomes to be greater than their inputs. These findings suggest that U.S. style pay practices may need modification, especially in Russia and former communist countries, in order to be perceived as fair by employees.

But don't assume there are no cross-cultural consistencies. For instance, the desire for interesting work seems important to almost all workers, regardless of their national culture. In a study of seven countries, employees in Belgium, Britain, Israel, and the United States ranked "interesting work" number one among 11 work goals. And this factor was ranked either second or third in Japan, the Netherlands, and Germany. Similarly, in a study comparing job-preference outcomes among graduate students in the United States, Canada, Australia, and Singapore, growth, achievement, and responsibility were rated the top three and had identical rankings. Both of these studies suggest some universality to the importance of intrinsic factors in the two factor theory.

## **Summary and Implications for Managers**

The theories we've discussed in this chapter address different outcome variables. Some, for instance, are directed at explaining turnover, while others emphasize productivity. The theories also differ in their predictive strength. In this section, we (1) review the most established motivation theories to determine their relevance in explaining our dependent variables, and (2) assess the predictive power of each.

**Need Theories** We introduced four theories that focused on needs. These were Maslow's hierarchy, ERG, McClelland's needs, and the two-factor theory. None of these theories has found widespread support, though the strongest of these is probably McClelland's, particularly regarding the relationship between achievement and productivity. In general, need theories (Maslow and ERG) are not very valid explanations of motivation.

**Goal-Setting Theory** There is little disputing that clear and difficult goals lead to higher levels of employee productivity. This evidence leads us to conclude that goal-setting theory provides one of the more powerful explanations of these dependent variables. The theory, however, does not address absenteeism, turnover, or satisfaction.

**Reinforcement Theory** This theory has an impressive record for predicting factors like quality and quantity of work, persistence of effort, absenteeism, tardiness, and accident rates. It does not offer much insight into employee satisfaction of the decision to quit.

**Equity Theory/Organizational Justice** Equity theory also deals with productivity, satisfaction, absence, and turnover variables. However, its strongest legacy probably is that it provided the spark for research on organizational justice, which has more support in the literature.

**Expectancy Theory** Our final theory focused on performance variables. It has proved to offer a relatively powerful explanation of employee productivity, absenteeism and turnover. But expectancy theory assumes that employees have few constraints on their decision discretion. It makes many of the same assumptions that the rational model makes about individual decision making. This acts to restrict its applicability.

For major decisions, like accepting or resigning from a job, expectancy theory works well because people don't rush into decisions of this nature. They're more prone to take the time to carefully consider the costs and benefits of all the alternatives. However, expectancy theory is not a very good explanation for more typical types of work behavior, especially for individuals in lower-level jobs, because such jobs come with considerable limitations imposed by work methods, supervisors, and company policies. We would conclude, therefore, that expectancy theory's power in explaining employee productivity increases when the jobs being performed are more complex and higher in the organization (where discretion is greater).

## **TRANSACTIONAL ANALYSIS**

### **Origins**

Transactional Analysis (TA) was largely developed by Dr. Eric Berne, a psychiatrist in California, who had practiced in an orthodox manner for some fifteen years. In the late 1950s, Berne arranged regular meetings with a group of fellow psychiatrists, psychologists and social workers in order to share clinical experiences of work in group therapy. It was from these meetings that TA developed as a new technique for use with groups. However, this technique gradually assumed a greater significance for its growing number of adherents. They began to view it as a new description of the 'blueprint of the mind'. The fact that it also offered an easily understandable vocabulary which could be used by the layman in viewing human behavior was of major significance. Psychological theories up to then had invariably been couched in conceptual and linguistic styles which rendered them incomprehensible to all but the truly initiated. In the words of Thomas Harris, TA provided:

"A method of systematizing the information derived from analyzing these transactions in words which have the same meaning, by definition, for everyone who is using them. This language is clearly one of the most important developments of the system. Agreement on the meaning of words plus agreement on what to examine are the two keys which have unlocked the door to the mysteries of why people do as they do. This is no small accomplishment."

### **Ego States**

Berne had been treating a highly successful lawyer who, in the course of his treatment, revealed a regularly experienced awareness of being just a child. The lawyer realized that, despite his maturity, his responsible job and role of father to family, he would at certain times feel not a lawyer but a little boy. This was confirmed by Berne's observations of the child-like mannerisms and gestures manifested by this patient on such occasions.

Observations made with many other patients convinced Berne that the child state was a part of every individual's personality and that, in fact, three such states existed within all people. These he called ego-states and they denoted the habitual ways of thinking, feeling and reacting that occur together.

In each person there is a collection of recorded feelings which the individual principally experienced whilst a child. There is also within the individual a model based on his or her own parents. These are recordings in the brain of real and significant experiences which happened, usually during the first five years of life. A third ego state, which is principally concerned with the processing of information on the basis of previous factual experience, also exists. Berne and his colleagues suggested that these three ego states, labeled Parent, Adult and Child (PAC) make up the human personality.

**Figure 1. The Personality**

(The three words, Parent, Adult and Child as given in TA are being used in a very specific way. They have a different meaning from the normal usage of these words. Hence, to avoid confusion, when used in this specific way the words will be written beginning with a capital letter.)

These three states of being are not roles and they are not roles and they are not hypothetical concepts like Freud's Superego, Ego and Id. They are phenomenological realities. Each state is produced by the playback of recorded data of events in the past involving real people, real times, real places, real decisions and real feelings.

Changes from one state to the other occur all the time and are apparent in manner, appearance, words and gestures. They are readily discernable in everyday life. For instance, it is easy to distinguish the difference in behavior displayed by the business executive when he is reporting to the Board, meeting a claim for a greater allowance from his children or replying to his wife's request to wash the dishes.

**The Parent**

In the first five years of life, an infant is inundated with external stimuli which are imposed upon it from many different sources in its environment. The most significant of these stimuli are those provided by the child's or substitute parents. Everything those parents do and say is taken up and used in the formation of the child's Parent. The Parent that consequently develops in each individual will be unique, resulting from the specific set of experiences that were encountered during those early years of life. Figure 2 gives a diagrammatic representation of the formation of the Parent.



### **Figure 2 the Parent (Harris 1967)**

Sometimes a person who is in the Parent ego state will display the nourishing and living qualities he observed in his parents. At other times he may manifest their punitive, authoritative and perhaps unfair or prejudice attitude which were apparent to him as an infant.

#### **The Child**

At the same time as data designated Parent is being in the infant's brain another recording takes place. This is the logging of interval events. These are the feelings experienced by the infant in response to what is seen and heard. The Child ego state is, therefore, that part of the personality which preserved from actual childhood. It is a seeing, hearing and feeling body of data. Just as the infant was unable to use verbal expressions while subject to early experiences, so the Child will mostly react through emotions. Hence it can be angry, frightened, loving, care-free, adventurous, trusting and curious.

### **Figure 3. The Child (Harris)**

## **The Adult**

The emergence of the Adult (which, it is claimed, begins around 10 months of age), stems from the infant's capacity to see other things in his or her existence in addition to the taught concept of life in the Parent and the felt concept of life in the Child. The Adult signals the introduction of a thought concept based on data collection and subsequent processing. The Adult approaches each situation anew. It uses experience but in doing so is unhampered by Child or Parent 'tape-recordings'.

Hence, the Adult ego state is essentially a computer and represents that part of an individual which is rational and logical. While the Parent and Child merely react, the Adult ego state thinks and reasons. From early on in life the infant sifts the data he encounters and draws logical conclusions. For instance, if he is burnt, he feels pain and realizes that it is advisable not to touch hot objects. In later life, the Adult solves problems, makes decisions and assesses probabilities. The Adult updates Parent and Child data and, significantly, decides whether it is appropriate, for any given situation, to respond with Parent, Child or Adult.

Feelings and emotions are not involved in this ego state. The Adult can generally be seen in situations such as a manager giving a presentation to his senior colleagues and it is this ego state, which is most usually deemed appropriate to many working situations.

**Figure 4. Gradual Emergence of Adult (Harries)**

### **Function of ego states**

Some examples of specific functions of the ego states as given by Anderson are presented below:

(a) Parent Functions (Taught Concept)

The Parent:

Defines, takes care of, set limits, gives advice,  
Disciplines, guides, protects, makes rules and  
Regulations, teaches and instructs, keeps  
Traditions, nurtures, judges and criticizes.

(b) Adult Functions (Thought

Concept) The Adult:

Gathers data on the current state of Parent,  
Adult and Child, on previous experiences,  
And on the external situation; analysis best  
Alternatives following the data collection, plans  
And decisions-makes. The Adult also estimates  
Probabilities.

(c) Child Functions (Felt

Concept) The Child can be:

Angry, rebellious, frightened, conforming,  
Creating, natural, loving, spontaneous,  
Carefree, fun-loving, exciting,  
adventurous, Curious, trusting, joyful etc.

**Figure 5. Function of Ego States**

## **Structural Analysis**

Harris says:

“All people are structurally alike in that they all have a Parent  
An Adult and a Child. They differ in two ways: in the content  
of Parent, Adult and Child, which is unique to each person,  
being recordings of those experiences unique to each; and in the  
working arrangement, or the functioning of Parent, Adult and  
Child.”

No ego state is better than any other. However, as the situation and the Adult determine what is appropriate to any given situation; it is desirable to have the Adult functioning all the time. As a result, an awareness of Parent, Child and situation is maintained. The Adult can therefore make assessments and subsequently decisions. The attainment of this position is very often the goal in therapeutic applications of TA. In organizations too, the aim of TA is often to strengthen and develop the Adult ego state in employees so that they are better able to combine in achieving appropriate objectives. It should be noted, however, that although the Adult is necessary to working situations, the Parent and Child need to have great influence in certain situations. For example, the Child is very much associated with creativity and in circumstances where this attribute is desired, the Child is not only appropriate but necessary.

The identification of ego states is of great significance with respect to interaction analysis. Using these concepts an individual can recognize in himself or in other the ego state prevailing at any given time or in any situation. From the wealth of associated knowledge that this provides to the TA initiates guidelines can be obtained concerning appropriate responses to given stimuli. It will also help in clarifying what might otherwise appear irrational behavior on the part of self or others.

The ego states are referred to as a structure for the personality and their identification in interactions is called Structural Analysis. This is the first phase in TA – “the action begins when two people get together”.

## **Transactions**

Eric Berne described a Transaction as follows:

“The unit of social intercourse is called a Transaction.

If two or more people encounter each other.... Sooner or

Later one of them will speak, or give some indication of  
Acknowledging the presence of the others. This is called  
The Transactional stimulus. Another person will then say  
Or do something which is in some way relate to the stimulus  
And that is called the transactional response.”

The Transaction can therefore be related to the interaction. In TA it is looked upon as the basic unit for study and observation and is even referred to as the basic scientific unit.

As every individual has Parent. Adult and Child ego states, the interaction of two people are said to involve six different people. There are, therefore, a number of different possible transactions which can take place.

**Figure 6. A Relationship Diagram (Berne)**

Transaction Analysis, as its name implies, is concerned with the analysis of these various options. The fundamental purpose of the analysis is to reveal which part of each individual-Parent, Adult or Child – is originating each stimulus and each response. As in other systems of interactive analysis this will involve not only a study of the words spoken but also the tone of voice, or other semi-verbal elements and non-verbal components such as gestures and facial expression. The following are some of the key indications which can be used to identify ego states in transactions:

### **Ego States**

Parent (Taught)

Goal: To be right or superiors (Can be critical or nurturing)

#### Verbal 'Clues

Objective

Maxims

Injunctions

“You ought...”

“You never...”

“You should..”

#### Non-verbal clues

Frowning

Belligerent posture

showing impatience

Shaking a finger

Making a fist

Dating smile

Adult (Thought)

Goal: To be respected as component

#### Verbal Clues

“What is it”

“Why do I need it?”

“What will it cost?”

“How are your problems handled?”

#### Non-verbal clues

Alternative listening

Good eye contact

Erect posture

Pensiveness

Child (Felt)

Goal: To be liked: To feel good

#### Verbal Clues

“I wish....”

“I like...”

“May I....?”

#### Non-verbal clues

Laughter

Defensive

Shrugging Shoulders

(Corporan 1975)

Transactions are classified as parallel, crossed or ulterior. The following diagrams and notes represent examples of transactions in each of these three categories for a two person (Dyad) interaction. The arrows indicate the direction in which communication is occurring.

Parallel or Complementary Transactions

Parallel transactions involve a response that is appropriate and expected. These are the transactions which will form the basis of health human relationship.

### **Figure 7. Parallel Transactions**

They will proceed in chains as each response becomes in turn a stimulus. Berne said:

“The first rule of communication is that communication will proceed smoothly as long as transactions are complementary; and its corollary is that as long as transactions are complementary, communication can, in principle, proceed indefinitely. These rules are

independent of the nature and content of the transactions; they are based entirely on direction of the vectors involved. As long as the transactions are complementary, it is irrelevant to the rule whether two people are engaging in critical gossip (Parent-Parent), solving a problem (Adult-Adult), or playing together (Child-child or Parent-Parent)".

### **Crossed Transactions**

**Figure 8: Crossed Transactions**



Communication is usually discontinued when a crossed transaction occurs. Berne said that the crossed transaction in (a) was one of the two most common such transactions and was the one which caused most social difficulties in life. A typical example might be the Adult-Adult stimulus given by a manager to a colleague in saying 'The objective of this change is not clear to me'. The Child – Parent response might be "you are always criticizing me for no reason'. (An example of the crossed transaction shown in Figure 8 (a) would be one manager giving to a colleague the Adult to Adult to stimulus, "We've missed the delivery date'. The Parent to Child response might be "Who is responsible?)

### **Ulterior Transactions**

Ulterior transactions are more complex than parallel and crossed transactions in that they involved more than two ego states simultaneously. The ulterior transaction is also the basic element in games.

a) Angular Ulterior transaction (involve three Ego States)

b) Duplex Ulterior transaction (involving four Ego States)

### Figure 9 Ulterior Transactions (Berne)

The following are examples in work situations which illustrate transactions from each of the three categories.

Manager A

Manager B

#### A Parallel transaction

Manager A: Where's the budget file?

Manager B: It's in your 'in' tray.

#### A Crossed Transaction

Manager A: Where's the budget file?

#### An Angular Ulterior Transaction

Manager A: The boss has asked me  
To let him know whenever this happens.

I ought to, should'nt I?

Manager B: No, he won't find out.

## Johari Window

### The Johari Window: A Graphic Model of Interpersonal and Team Processes

The Johari Window is essentially an information processing model. In the Personnel Relations Survey it is used to assess how individuals present and process information necessary to their relationships. Basically, the model employs a four-part figure to reflect the interaction of two sources of information-*self* and *others-as* depicted in Figure 1.

The model may be thought of as being filled with pieces of information which are available for use in establishing and maintaining interpersonal relationships. The squared field, representing the “interpersonal relationships. The squared field, representing the “interpersonal space,” is partitioned into four “regions” with each region representing particular information-processing elements that have significance for the quality of relationships. To fully appreciate the implications that each region has for interpersonal effectiveness, we need to consider the size and shape of each region, and the reasons for its presence in the interpersonal space.

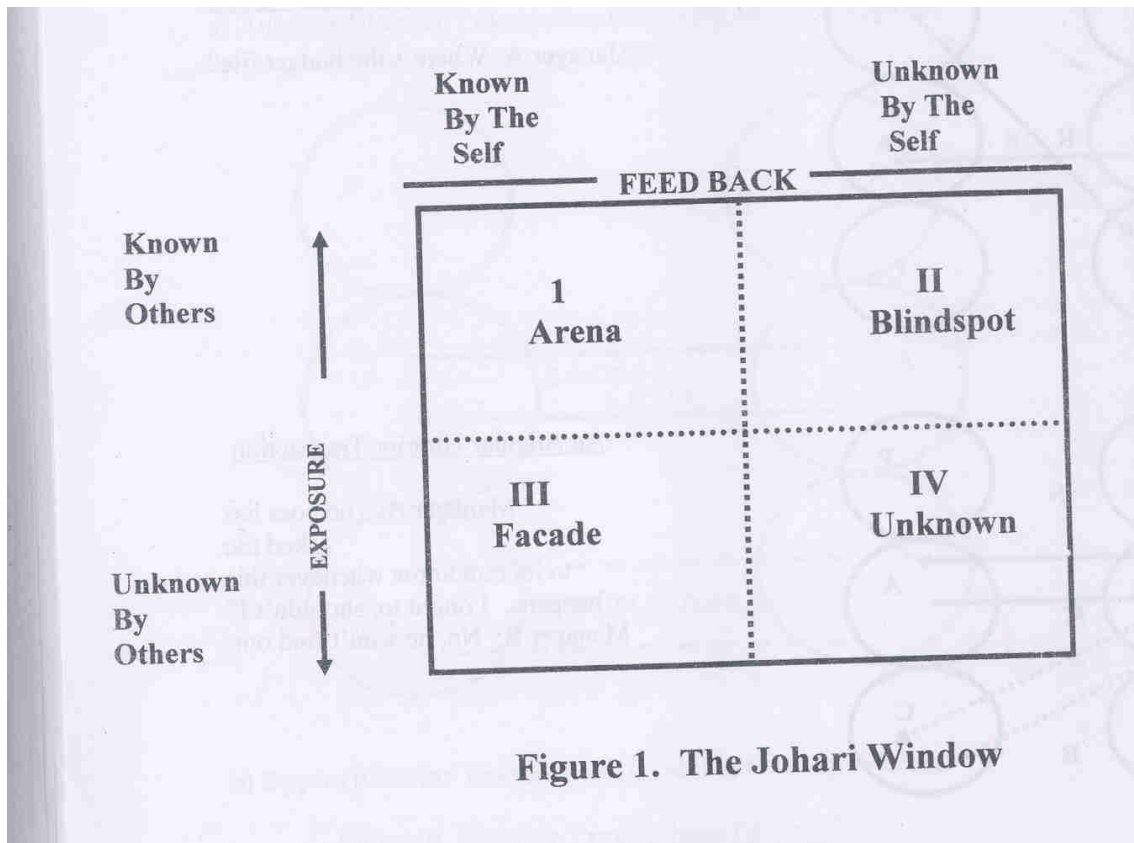


Figure 1 shows that the two informational sources, self and others, also have two categories of knowing; that is, there is pertinent information that is known by the self and, similarly, there is pertinent information which is influencing relationships but which is unknown by the self. By the same token, there is relevant information which is known by others and equally relevant information which is unknown by others. These self-other combinations of known and unknown information make up the four regions of interest in the Johari Window.

### **Region I-The Arena**

Region I constitute that portion of the total interpersonal space devoted to mutual understanding and shared information. *This know by the self-known by others* facet of the relationship is thought to control interpersonal productivity. The assumption is that productivity and interpersonal effectiveness are directly related to the amount of mutually-held information. Therefore, the larger Region I becomes, the more rewarding, effective, and productive the relationship is apt to be. Region I is called the Arena.

### **Region II-The Blindspot**

Region II is that portion of the interpersonal space, which holds information *known* by others but unknown by the self. This region amounts to a handicap for the self, since it is nearly impossible to understand the behaviors, decisions, or potentials of others without the data upon which these are based. Similarly, others have an advantage to the extent that they know their reactions, feelings, and perceptions while the self is unaware of these. Region II-an area of hidden, unperceived information-is called the Blindspot.

### **Region III-The Façade**

Region III also inhibits under personal effectiveness due to an imbalance of information, which appears to favor the self. Characterized by information known by the self but unknown by others, Region III constitutes a protective feature for the self. Data which the self perceives as prejudicial to the relationship or which are not revealed out of fear, desire for power, or whatever, make up the Façade-a protective front for the self. Every relationship is thought to have a Façade is realistically required. Put another way, there is a limit to how much conscious defensiveness can be tolerated before the Arena becomes too inhibited and interpersonal effectiveness is diminished.

### **Region IV-The Unknown**

Finally, Region IV constitutes that portion of the relationship devoted to material unknown by the self and unknown by others. Information in this area is thought to reflect psychodynamic data, unknown potentials, learned idiosyncrasies, and the data-base of creativity. Thus, though Region IV is the Unknown, it contains data which may become known as interpersonal effectiveness increases.

In summary, it should be said that information within all regions can be of any type-feeling data, factual information, proactive and reactive tendencies, assumptions, task/skill data, and prejudices-which is relevant to the relationship at hand. Irrelevant data are not the focus. Instead, only those pieces of information which have a bearing on the quality and productivity of the relationship are appropriate targets for the information processing practices dealt with by the model. It should be kept in mind that more data become relevant as a relationship grows and the model should be viewed as being amenable to change.

## **Basic Interpersonal Processes**

The dynamic character of the model is critical. The fact is that the horizontal and vertical lines which partition the informational space into regions can move. This indicates that individuals can control what their interpersonal relationships will become. More explicitly, this means that you can significantly influence the size of your Arena in relating to others aware of relevant information which you have and they do not, you enlarge your Arena in downward direction. As this enlargement occurs, your Façade is reduced. Thus, if you elect to behave in a non-defensive, trusting, and risk-taking manner with others, you contribute to increased awareness.

The process employed toward this end has been called by Luft and Ingham the Exposure process. It entails the open and candid expression of feelings, factual knowledge, and even guesses in a conscious attempt to share. Frothy or diversionary sharing does not constitute exposure and does nothing to help mutual understanding. The exposure process is under your direct control and should be used for building trust and for legitimizing mutual exposures

The need for mutual exposures becomes apparent when you consider what is required to enlarge the Arena laterally. As a behavior designed to reduce your Blind-Spot, the *Feedback* process requires *active solicitation* by you of the information you feel others might have which you do not. The active, initiative –taking aspect of this responsibility for legitimizing certain acts within the relationship.

Since the extent to which you will actually receive the feedback you solicit is contingent upon the willingness of others to expose their data, the need for a climate of mutual trust is apparent. You may find that you have less control over the success of your feedback-seeking behaviors than you do over self-exposure. You will reduce your Blindspot only with the cooperation of others. Your own prior willingness to be open and candid will have substantial impact on how much cooperation and trust you now receive from other parties.

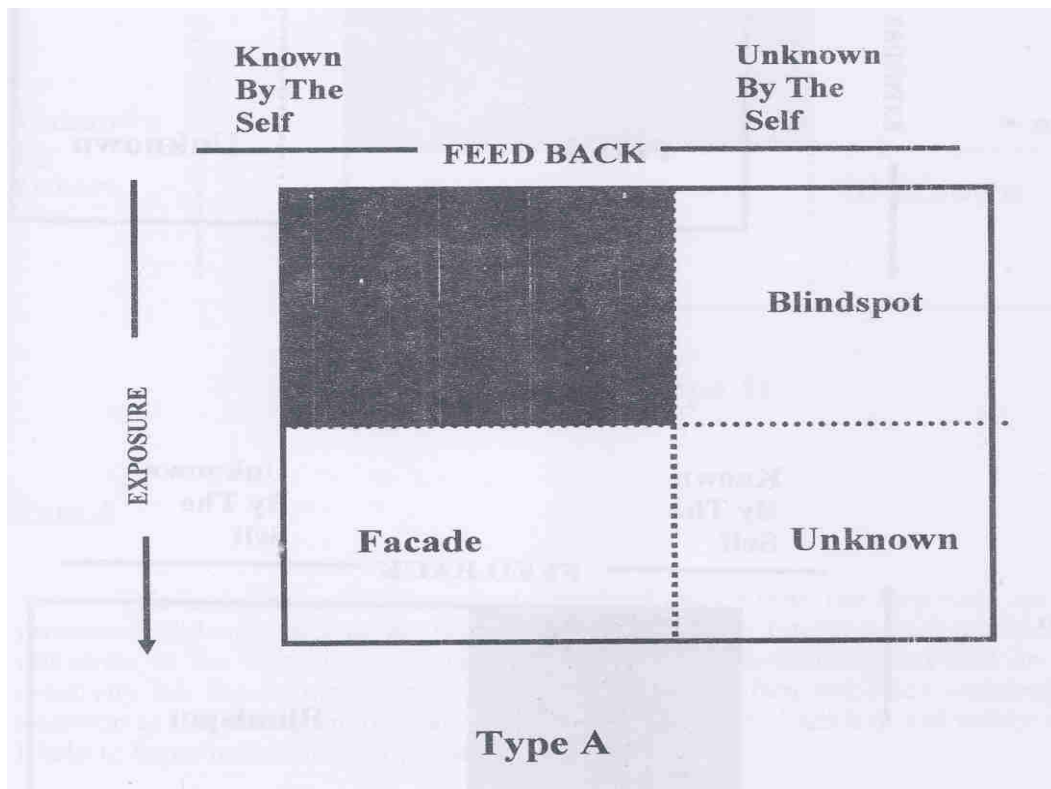
This is very much an issue of your own interpersonal competence. You can establish truly effective relationships if you will engage in optimum Exposure and Feedback soliciting behaviors. The fact is, you have the primary responsibility for the productivity of, and the interpersonal rewards which can be derived from, your relationships with others.

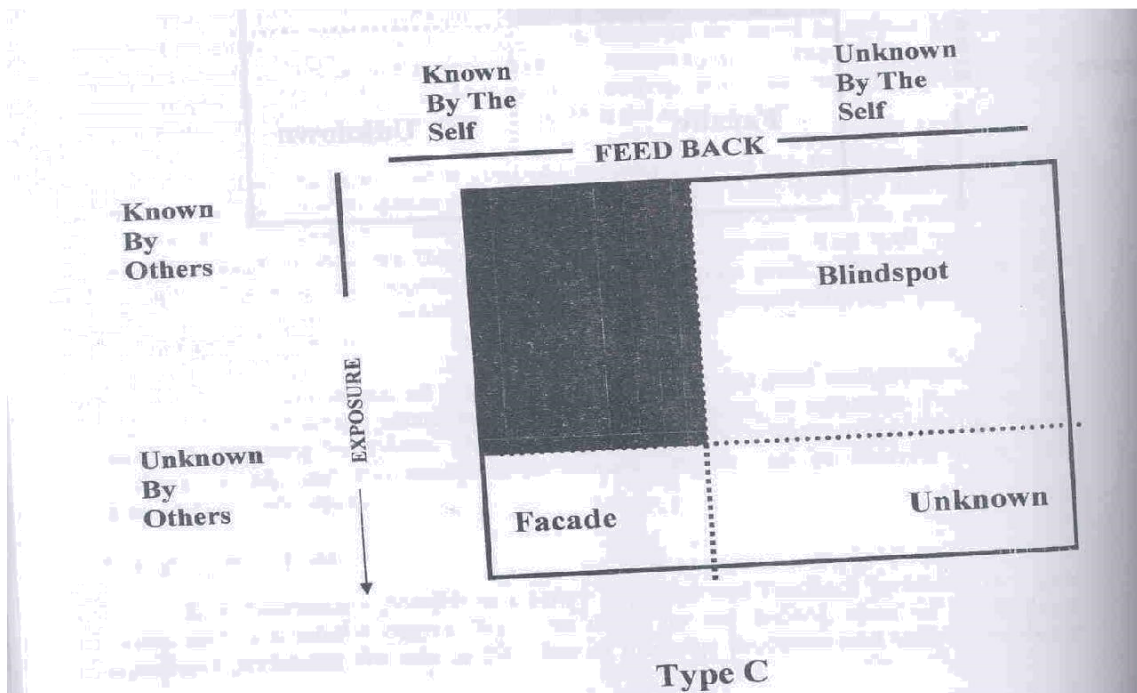
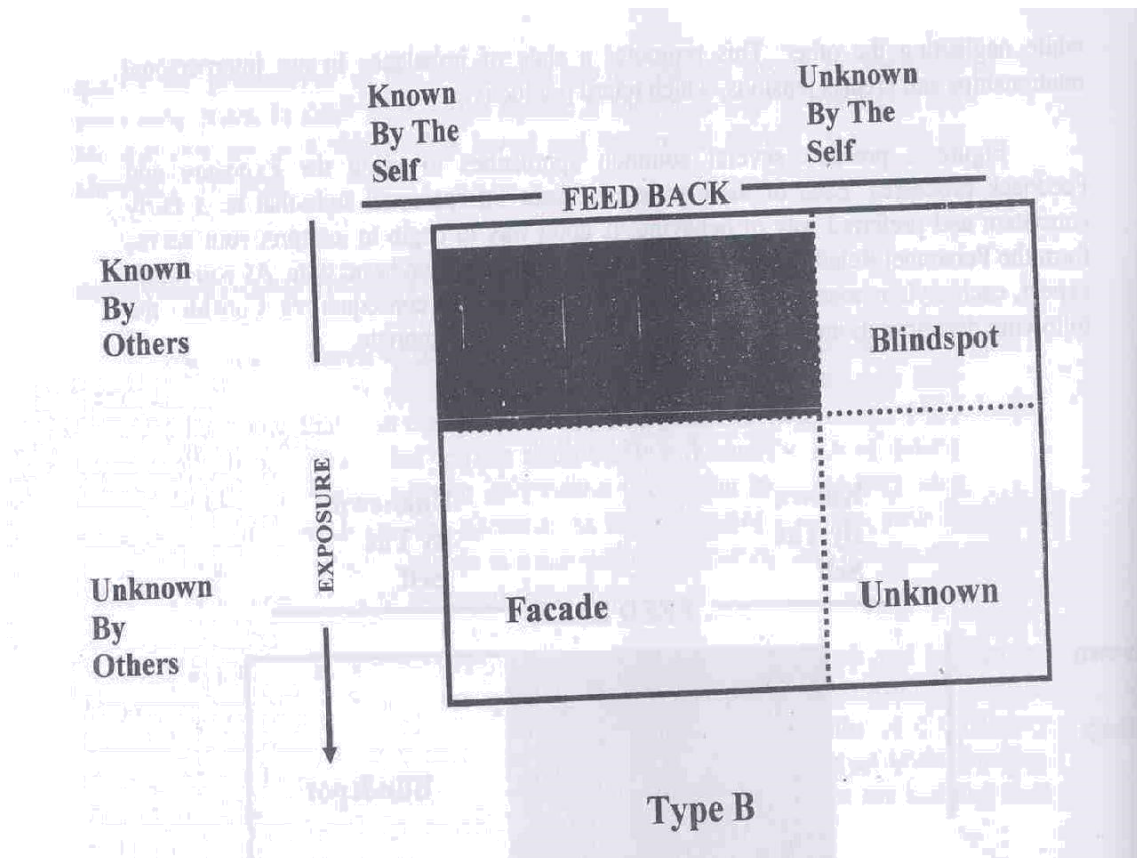
## **Interpersonal Styles**

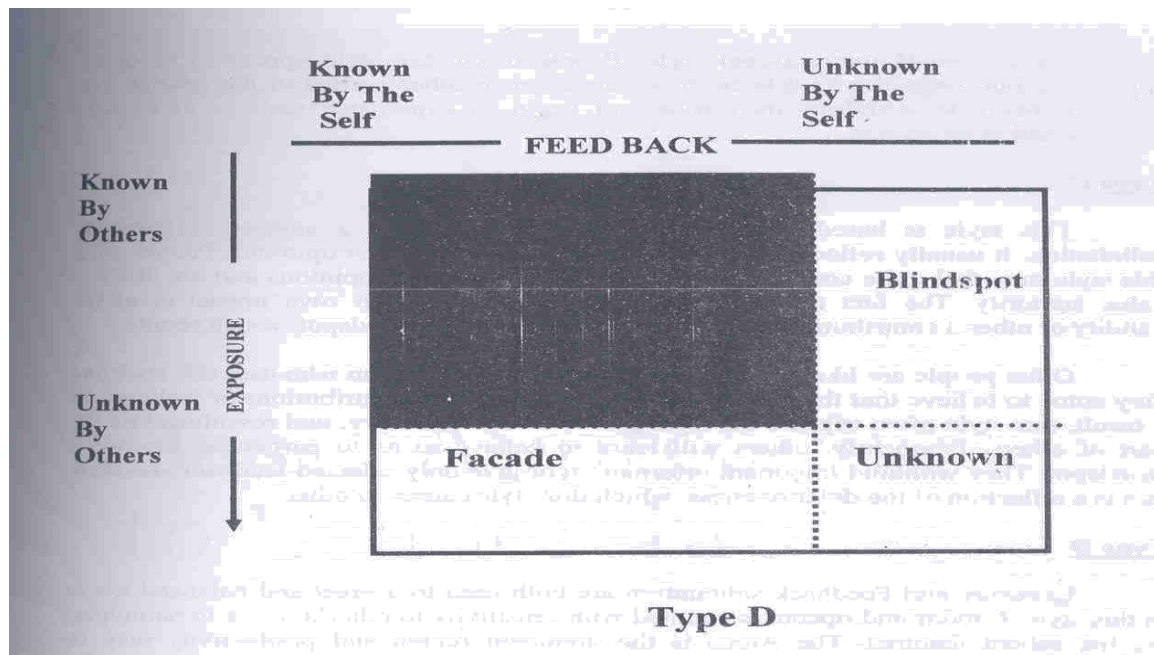
It is theoretically possible to employ Exposure and Feedback processes to a great extent and to a similar degree, but most of us do not. Indeed, most of us display a significant preference for one

or the other of the two processes and tend to overuse it while neglecting the other. This promotes a state of imbalance in our interpersonal relationships and creates tensions, which retard productivity.

Figure 2 presents several common approaches to using the Exposure and Feedback processes. Each of these reflects a basic interpersonal style—that is, a fairly consistent and preferred way of behaving. A good way to begin to interpret your scores from the Personnel Relations Survey is by determining our own basic style. As you might expect, each style is associated with some fairly predictable consequences. Consider the following descriptions and apply them to yourself where appropriate.







### Type A

This interpersonal style reflects minimal use of both the Exposure and Feedback processes and amounts to an impersonal approach to interpersonal relationships. The unknown is the largest region under this style and unrealized potential and untapped creativity are the dominant influences. Such a style often indicates withdrawal and an aversion to risk-taking on the part of its user. Interpersonal anxiety and safety-seeking are likely to be prime sources of personal motivation.

People who use this style often appear rigid and aloof and may be found in bureaucratic organizations where it is possible, and perhaps profitable, to avoid personal involvement. Other people are likely to react to persons using this style with more than average hostility. They will tend to interpret the lack of exposure and feedback solicitation in terms of their own needs and how this style fails to fulfill those needs.

### Type B

Under this approach there is also an aversion to Exposure but, in this case, it is coupled with a desire for relationships not found in Type A. The result is that Feedback solicitation is much over-used. An aversion to the use of Exposure is usually interpreted as a sign of mistrust of others, and it is not surprising that the Façade is the dominant feature of a Type B interpersonal style. People using this style appear to be quasi-supportive but, once the Façade becomes apparent to other parties to the relationship, they are likely to withdraw their trust and begin to experience feelings of anxiety, hostility and even disgust.

### Type C

This style is based on an overuse of Exposure and a neglect of Feedback solicitation. It usually reflects ego-striving and distrust of other's opinions. People using this style may feel quite



confident of the validity of their own opinions and are likely to value authority. The fact that they are often unaware of their own impact or of the validity of other's contributions is reflected in the dominant Blindspot, which results.

Other people are likely to feel disenfranchised by a person who uses this style and they come to believe that the person has no concern of their contributions or feelings. As a result, this style often triggers off feeling of hostility insecurity, and resentment on the part of others. Frequently, others will learn to behave so as to perpetuate the user's Blindspot. They withhold important information or give only selected feedback. As such, this is a reflection of the defensiveness, which this style causes in others.

### **Type D**

Exposure and Feedback solicitation are both used to a great and balanced extent in this style. Candor and openness coupled with sensitivity to other's needs to participate are the salient features. The Arena is the dominant region and productivity may be expected to increase. In initial stages, this style may promote some defensiveness on the part of others unused to honest and trusting relationships. Perseverance over time, however, will promote reciprocal candor so that trust and creative potential can be realized.

## **Basic Approaches to Leadership**

After studying this chapter, you should be able to:

- |  |  |
|--|--|
| 1. Contrast leadership and management              | 5. Expansiveness and Blanchard's situational theory                      |
| 2. Summarize the conclusions of that theories      | 6. Summarize leader member exchange theory                               |
| 3. Identify the limitations of behavioral theories | 7. Describe the path-goal theory   |
| 4. Describe Fiedler's contingency model            | 8. Identify the situational variables in the leader-participation model. |

## Andrea Jung: Giving Avon a Much Needed Makeover

Can one person make a difference in an organization's performance? Andrea Jung, chairman and CEO of Avon Products Inc. (see photo), is proving one can. Jung joined Avon in 1994 after working for retailers such as Neiman Marcus and Bloomingdale's. Her original task at Avon was to create a global brand. And that's what she did. Jung integrated and standardized the company's logo, packaging, and ads to create a uniform image; and she pushed for the current corporate slogan, "The company for women." Based on her success in improving Avon's marketing focus, the company's board appointed her chairman and CEO in November 1999.

The company that Jung took over was in deep trouble. The day of the "Avon Lady" seemed to have passed. Fewer women were signing on as Avon reps and sales were sagging. But after only 4 weeks in her new job, Jung had a turnaround plan worked out. Avon would launch an entirely new line of businesses, develop blockbuster products, begin selling Avon products in retail stores, and significantly expand international sales. She added 46 percent to Avon's research and development budget to get blockbusters to market faster. This led to the launching of Retroactive, and anti aging skin cream that has become a runaway hit, and new lines of vitamins and therapy oils. She breathed new life into the ranks of the "Avon Ladies." To rebuild the company's sales-force, she created a multilevel marketing program that rewards current sales people for signing up new reps. The number of sales reps is now increasing for the first time in years. Finally, by aggressively moving into international markets, Avon now gets almost two-thirds of its \$6.2 billion in sales from outside the United States.

After 6 years on the job, Jung's leadership has truly made a difference in Avon's performance. Since Jung took over as CEO, profits have grown by an average of 21.5 percent per year. And Avon's stock price has increased 142 percent, compared to mediocre performance of the S&P-500 stock index over the same time period.

As Andrea Jung is demonstrating at Avon, leaders can make a difference. In this chapter, we'll look at the basic approaches to determining what makes an effective leader and what differentiates leaders from nonreaders. First, we'll present trait theories. They dominated the study of leadership up to the late 1940s. Then we'll discuss behavioral theories, which were popular until the late 1960s. Finally, we'll introduce contingency theories, which are currently the dominant approach to the field of leadership. But before we review these three approaches, let's first clarify what we mean by the term leadership.

## What Is Leadership?

*Leadership and management* are two terms that are often confused. What's the difference between them?

John Kotter of the Harvard Business School argues that management is about coping with complexity. Good management brings about order and consistency by drawing up formal plans, designing rigid organization structures, and monitoring results against the plans. Leadership, in contrast, is about coping with change. Leaders establish direction by developing a vision of the future; then they align people by communicating this vision and inspiring them to overcome hurdles.

Robert House of the Wharton School at the University of Pennsylvania basically concurs when he says that managers use the authority inherent in their designated formal rank to obtain compliance from organizational members. Management consists of implementing the vision and strategy provided by leaders, coordinating and staffing the organization, and handling day-to-day problems.

Although Kotter and House provide separate definitions of the two terms, both researchers and practicing managers frequently make no such distinctions. So we need to present leadership in a way that can capture how it is used in theory and practice.

We define leadership as the ability to influence a group toward the achievement of a vision or set of goals. The source of this influence may be formal, such as that provided by the possession of managerial rank in an organization. Because management positions come with some degree of formally designated authority, a person may assume a leadership role simply because of the position he or she holds in the organization. But not all leaders are

managers, nor, for that matter, are all managers leaders. Just because an organization provides its managers with certain formal rights is no assurance that they will be able to lead effectively. We find that nonsanctioned leadership – that is, the ability to influence that arises outside the formal structure of the organization – is often as important or more important than formal influence. In other words, leaders can emerge from within a group as well as by formal appointment to lead a group.

One last comment before we move on: Organizations need strong leadership and strong management for optimal effectiveness. In today's dynamic world, we need leaders to challenge the status quo, to create visions of the future, and to inspire organizational members who want to achieve the vision. We also need managers to formulate detailed plans, create efficient organizational structures, and oversee day-to-day operations.

## Trait Theories

Throughout history, strong leaders-Buddha, Napoleon, Mao, Churchill, Thatcher, Reagan – have all been described in terms of their traits. For example, when Margaret Thatcher was prime minister of Great Britain, she was regularly described as confident, iron-willed, determined, and decisive.

**Trait theories of leadership** differentiate leaders from non-leaders by focusing on personal qualities and characteristics. Individuals like Margaret Thatcher, South Africa's Nelson Mandela, Virgin Group CEO Richard Branson, Apple cofounder Steve Jobs, former New York City mayor Rudolph Giuliani, and American Express *chairman* Ken Chenault are recognized as leaders and described in terms such as charismatic, *enthusiastic*, and *courageous*. The search for personality, social, physical, or intellectual attributes that would describe leaders and differentiate them from non-leaders goes back to the earliest stages of leadership research.

Research efforts at isolating leadership traits resulted in a number of dead ends. For instance, a review in the late 1960s of 20 different studies identified nearly 80 leadership traits, but only 5 of these traits were common to 4 or more of the investigations. By the 1990s, after numerous studies and analyses, about the best thing that could be said was that most “leaders are not like other people,” but the particular traits that were isolated varied a great deal from review to review. It was a pretty confusing state of affairs.

A breakthrough, of sorts, came when researchers began organizing traits around the Big five personality framework. What became clear was that most of the dozens of traits that emerged in various leadership reviews could be subsumed under one of the Big Five and that this approach resulted in consistent and strong support for traits as predictors of leadership. For instance, ambition and energy – two common traits of leaders – are part of extraversion. Rather than focusing on these two specific traits, it is better to think of them in terms of the more general trait of extraversion.

A comprehensive review of the leadership literature, when organized around the Big Five, has found that extraversion is the most important trait of effective leaders. But results show that extraversion is more strongly related to leader emergence than to leader effectiveness. This is not totally surprising since sociable and dominant people are more likely to assert themselves in group situations. Conscientiousness and openness to experience also showed strong and consistent relationships to leadership, though not quite as strong as extraversion. The traits of agreeableness and emotional stability weren't as approach does have something to offer. Leaders who are extraverted (individuals who like being around people and are able to assert themselves), conscientious (individuals who are disciplined and keep commitments they make), and open (individuals who are creative and flexible) do seem to have an advantage when it comes to leadership, suggesting that good leaders do have key traits in common.

Recent studies are indicating that another trait that may indicate effective leadership is emotional intelligence (EI), which we have discussed. Advocates of EI argue that without it, a person can have outstanding training, a highly analytical mind, a compelling vision, and an endless supply of terrific ideas but still not make a great leader. This may be especially true as individuals move up in an organization. But why is EI so critical to effective leadership? A core component of EI is empathy. Empathetic leaders can sense other's needs, listen to what followers say (and don't say), and are able to read the reactions of others. As one leader noted, “The caring part of

empathy, especially for the people with whom you work, is what inspires people to stay with a leader when the going gets rough. The mere fact that someone cares is more often than not rewarded with loyalty.

## **JOB IN THE NEWS**

### **Managers Speak Out on Leadership Competencies**

Training magazine and The Center for Creative Leadership surveyed more than 250 managers to identify what leadership competencies they thought are most important for success today. Respondents were 54 percent male and 46 percent female. And they covered all levels of management: For instance, 28 percent were senior managers and 48 percent were either in beginning or middle-level management positions.

The survey found that these managers all considered ethics, integrity, and values near the top of their competency requirements. This shouldn't have been surprising given that the survey took place very soon after national headlines were revealing unethical (and, in some cases, illegal) practices by executives at companies like Enron, Tyco, WorldCom, and Arthur Andersen. Respondents believed that for leaders at the top of organizations to be effective, they must command respect. They need to be perceived as honest and reliable. Hence the importance of ethics, integrity, and values. On a 5-point scale, with 5 as most important, this competency received a mean score of 4.7.

Certain leadership competencies were viewed as more valuable, depending on the respondent's level in the organization. For mid-level managers, the survey found that communication (4.7) was just ahead of ethics (4.69) on the importance scale. At senior management levels, the highest importance went to the ability to construct and articulate a clear vision (4.89), with ethics receiving a mean rating of 4.8.

Ninety percent of senior-level managers placed developing a vision as highest in importance, but only 19 percent of mid-level manager included vision among their most important competencies.

**Source: Based on J. Schettler, "Leadership in Corporate America," Training, September 2002, pp.66-77**

Indeed, at the highest levels of leadership, EI is critical. For example, presidential historian Fred Greenstein argues that EI is the most important predictor of presidential greatness. Greenstein argues that the lack of EI was the undoing of Presidents Johnson, Nixon, Carter, and, to some degree, Clinton. He warns, "Beware the presidential contender who lacks emotional intelligence. In its absence all else may turn to ashes. Emotional intelligence may have also played a key role in the 2004 presidential election. Though John Kerry was believed by many Americans to be smarter, more knowledgeable, and likely to do a better job on the key issues compared to George W. Bush, he lost the election. Why? Some believe that Kerry had lower EI than Bush. As one commentator put it, "In 2004 Kerry had more policy smarts. But Bush had more people smarts. He ran the more emotionally resonant campaign – speaking clearly, simply, and passionately. And he won.

Despite these claims for its importance, the link between EI and leadership effectiveness is much less investigated compared to other traits. One reviewer noted, "Speculating about the practical utility of the EI construct might be premature. Despite such warnings, EI is being viewed as a panacea for many organizational malaises with recent suggestions that EI is essential for leadership effectiveness. But until more rigorous evidence accumulates, we can't be confident about the connection.

Based on the latest findings, we offer two conclusions. First, traits can predict leadership. Twenty years ago, the evidence suggested otherwise. But this was probably due to the lack of a valid framework for classifying and organizing traits. The Big Five seems to have rectified that. Second, traits do a better job at predicting the emergence of leaders and the appearance of leadership than in actually distinguishing between *effective* and *ineffective* leaders. The fact that an individual exhibits the traits and others consider that person to be a leader does not necessarily mean that the leader is successful at getting his or her group to achieve its goals.

## Behavioral Theories

The failures of early trait studies led researchers in the late 1940s through the 1960s to go in a different direction. They began looking at the behaviors exhibited by specific leaders. They wondered if there was something unique in the way that effective leaders behave. To use contemporary examples, Siebel Systems Chairman Tom Siebel and Oracle CEO Larry Ellison have very successful in leading their companies through difficult times. And they both rely on a common leadership style – tough –talking, intense, autocratic. Does this suggest that autocratic behavior is a preferred style for all leaders? In this section, we look at three different behavioral theories of leadership to answer that question. First, however, let's consider the practical implications of the behavioral approach.

If the behavioral approach to leadership were successful, it would have implications quite different from those of the trait approach. Trait research provides a basis for selecting the “right” persons to assume formal positions in groups and organizations requiring leadership. In contrast, if behavioral studies were to turn up critical behavioral determinants of leadership, we could train people to be leaders. The differences between trait and behavioral theories, in terms of application, lies in their underlying assumptions. Trait theories assume leaders are born rather than made. However, if there were specific behaviors that identified leaders, then we could teach leadership – we could design programs that implanted these behavioral patterns in individuals who desired to be effective leaders. This was surely a more exciting avenue, for it meant that the supply of leaders could be expanded. If training worked, we could have an infinite supply of effective leaders.

### Ohio State Studies

The most comprehensive and replicated of the behavioral theories resulted from research that began at Ohio State University in the late 1940s. Researchers at Ohio State sought to identify independent dimensions of leader behavior. Beginning with over a thousand dimensions, they eventually narrowed the list to two categories that substantially accounted for most of the leadership behavior described by employees. They called these two dimensions *initiating structure* and *consideration*.

**Initiating structure** refers to the extent to which a leader is likely to define and structure his or her role and those of employees in the search for goal attainment. It includes behavior that attempts to organize work, work relationships, and goals. The leader characterized as high in initiating structure could be described as someone who “assigns group members to particular tasks,” “expects workers to maintain definite standards of performance,” and “emphasizes the meeting of deadlines.” Larry Ellison and Tom Siebel exhibit high *initiating structure behavior*.

**Consideration** is described as the extent to which a person is likely to have job relationships that are characterized by mutual trust, respect for employees' ideas, and regard for their feelings. The person shows concern for followers comfort, well-being, status, and satisfaction. A leader high in consideration could be described as one who helps employees with personal problems, is friendly and approachable, and treats all employees as equals. AOL Time Warner's CEO Richard Parsons rates high on consideration behavior. His leadership style is very people-oriented, emphasizing cooperation and consensus-building.

At one time, the results of the Ohio State studies were thought to be disappointing. One 1992 review concluded, “Overall, the research based on a two-factor conceptualization of leadership behavior has added little to our knowledge about effective leadership. However, a more recent review suggests that this two-factor conceptualization was given a premature burial. A review of 160 studies found that both initiating structure and consideration were associated with effective leadership. Specifically, consideration was more strongly related to the individual. In other words, the followers of leaders who were high in consideration were more satisfied with their jobs and more motivated and also had more respect for their leader. Initiating structure, however, was more strongly related to higher levels of group and organization productivity and more positive performance evaluation.

### University of Michigan Studies

Leadership studies undertaken at the University of Michigan's Survey Research Center, at about the same time as those being done at Ohio State, had similar research objectives: to locate behavioral characteristics of leaders that appeared to be related to measures of performance effectiveness.

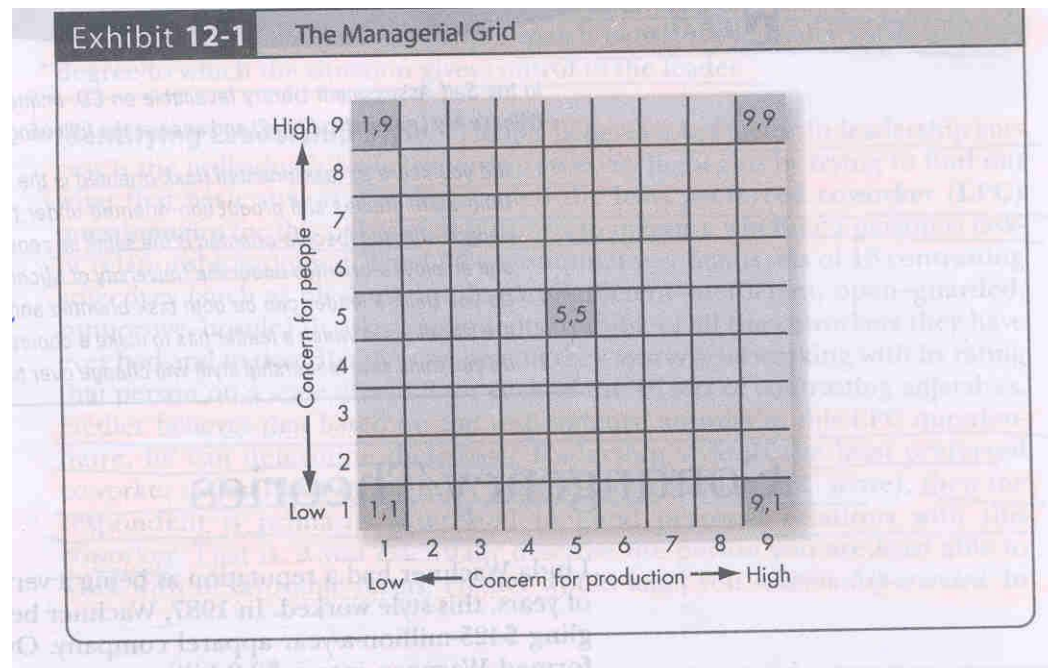
The Michigan group also came up with two dimensions of leadership behavior that they labeled employee-oriented and production-oriented. Leaders who were employee-oriented were described as emphasizing interpersonal relations; they took a personal interest in the needs of their employees and accepted individual differences among members. The production-oriented leaders, in contrast, tended to emphasize the technical or task aspects of the job- their main concern was in accomplishing their group's tasks, and the group members were a means to that end. These dimensions – employee-oriented and production-oriented – are closely related to the Ohio State dimensions. Employee-oriented leadership is similar to initiating structure. In fact, most leadership researchers use the terms synonymously.

The conclusions arrived at by the Michigan researchers strongly favored the leaders who were employee-oriented in their behavior. Employee-oriented leaders were associated with higher group productivity and higher job satisfaction. Production-oriented leaders tended to be associated with low group productivity and lower job satisfaction. Although the Michigan studies emphasized employee-oriented leadership (or consideration) over production-oriented research attention and suggested that both consideration and initiating structure are important to effective leadership.

### The Managerial Grid

A graphic portrayal of a two-dimensional view of leadership style was developed by Blake and Mouton. They proposed a **managerial grid** (sometimes also now called the *leadership grid*) based on the styles of “concern for people” and “concern for production,” which essentially represent the Ohio State dimensions of consideration and initiating structure of the Michigan dimensions of employee-oriented and production-oriented.

The grid, depicted in Exhibit 12-1, has 9 possible positions along each axis, creating 81 different positions in which the leader's style may fall. The grid does not show results produced, but, rather, the dominating factors in a leader's thinking in regard to getting results. Based on the findings of Blake and Mouton, managers were found to perform best under a 9,9 style, as contrasted, for example, with a 9,1 (authority type) or 1,9 (laissez-faire type) style. Unfortunately, the grid offers a better framework for conceptualizing leadership style than for presenting any tangible new information in clarifying the leadership quandary, because it doesn't really convey and new information in addition to the Ohio State and the University of Michigan research.



### Summary of Trait Theories and Behavioral Theories

Judging from the evidence, the behavioral theories, like the trait theories, add to our understanding of leadership effectiveness. Leaders who have certain traits, and who display consideration and structuring behaviors, do appear to be more effective. Perhaps trait theories and behavioral theories should be integrated. For example, you would think that conscientious leaders (conscientiousness is a trait) are more likely to be structuring (structuring is a behavior). And may be extraverted leaders (extraversion is a trait) are more likely to be considerate (consideration is a behavior). Unfortunately, we can't be sure there is a connection. Future research is needed to integrate these approaches.

Trait theories and behavioral theories aren't the last word on leadership. Missing is consideration of the situational factors that influence success or failure. For example, it seems unlikely that Martin Luther King, Jr., would have been a great civil rights leader at the turn of the twentieth century, yet he was in the 1950s and 1960s. Would Ralph Nader have risen to lead as consumer activist group had he been born in 1834 rather than 1934, or in Costa Rica rather than Connecticut? As important as trait theories and behavioral theories are in determining effective versus ineffective leaders, they do not guarantee a leader's success. The context matters too.

Before you move on the next section, think about the type of leader you are aspiring to be. The Self-Assessment feature will help you identify your leadership style.

## Contingency Theories

Linda Wachner had a reputation as being a very tough boss. And for a number of years, this style worked. In 1987, Wachner became CEO of Warnaco, a struggling \$425-million-a-year apparel company. Over a 14-year period, she transformed Warnaco into a \$2.2 billion company whose products ranged from Calvin Klein jeans to Speedo swimsuits. In spite of an abrasive style that included frequently humiliating employees in front of their peers and led to rapid turnover among top managers, Wachner's style worked for most of the 1990s. In fact, in 1993, Fortune magazine anointed her "America's most successful businesswoman." But times change and Wachner didn't. Beginning in 1998, the company's business began to unravel, hurt by a reduction in demand for its products and a fast-eroding market share. Wachner's headstrong approach and brash tactics, which had driven off many competent executives, was now alienating creditors and licensors as well as employees. In June 2001, Warnaco was forced to file for bankruptcy protection. Five months later, the restructuring committee of Warnaco's board of directors fired Wachner. The story doesn't quite end there, though. Wachner sued Warnaco for \$25 million in severance pay. They eventually settled for \$452,000. Then, the SEC charged Wachner for securities fraud for issuing a false and misleading press release about Warnaco's earnings. In 2004, Wachner settled, agreeing to pay a total of \$1,328,444 in fines and disgorged earnings.

Linda Wachner's rise and fall illustrates that predicting leadership success is more complex than isolation a few traits or preferable behaviors. In Wachner's case, what worked in 1990 didn't work in 2000. The failure by researchers in the mid-twentieth century to obtain consistent results led to a focus on situational influences. The relationship between leadership style and effectiveness suggested that under condition *a*, style *x* would be appropriate, whereas style *y* would be more suitable for condition *b*, and style *z* for condition *c*. But what were the conditions *a, b, c*, and so forth? It was one thing to say that leadership effectiveness was dependent on the situation and another to be able to isolate those situational conditions. Several approaches to isolation key situational variables have proven more successful than others and, as a result, have gained wider recognition. We shall consider five of these: the Fiedler model, Hersey and Blanchard's situational theory, leader-member exchange theory, and the path-goal and leader-participation models.

### Fiedler Model

The first comprehensive contingency model for leadership was developed by Fred Fiedler. The Fiedler contingency model proposes that effective group performance depends on the proper match between the leader's style and the degree to which the situation gives control to the leader.



**Identifying Leadership Style:** Fiedler believes a key factor in leadership success is the individual's basic leadership style. So he begins by trying to find out what that basic style is. Fiedler created the **least preferred coworker (LPC) questionnaire** for this purpose; it purports to measure whether a person is task or relationship-oriented. The LPC questionnaire contains sets of 16 contrasting adjectives (such as pleasant-unpleasant, efficient-inefficient, open-guarded, supportive-hostile). It asks respondents to think of all the coworkers they have ever had and to describe the one person they *least enjoyed* working with by rating that person on a scale of 1 to 8 for each of the 16 sets of contrasting adjectives. Fiedler believes that based on the respondents' answers to this LPC questionnaire, he can determine their basic leadership style. If the least preferred coworker is described in relatively positive terms (a high LPC score), then the respondent is primarily interested in good personal relations with this coworker. That is, if you essentially describe the person you are least able to work with. In favorable terms, Fiedler would label you *relationship-oriented*. In contrast, if the least preferred coworker is seen in relatively unfavorable terms (a low LPC score), the respondent is primarily interested in productivity and thus would be labeled task-oriented. About 16 percent of respondents score in the middle range. Such individuals cannot be classified as either relationship-oriented or *task-oriented* and thus fall outside the theory's predictions. The rest of our discussion, therefore, relates to the 84 percent who score in either the high or low range of the LPC.

Fiedler assumes that an individual's leadership style is fixed. As we'll show, this is important because it means that if a situation requires a task-oriented leader and the person in that leadership position is relationship-oriented, either the situation has to be modified or the leader replaced if optimal effectiveness is to be achieved.

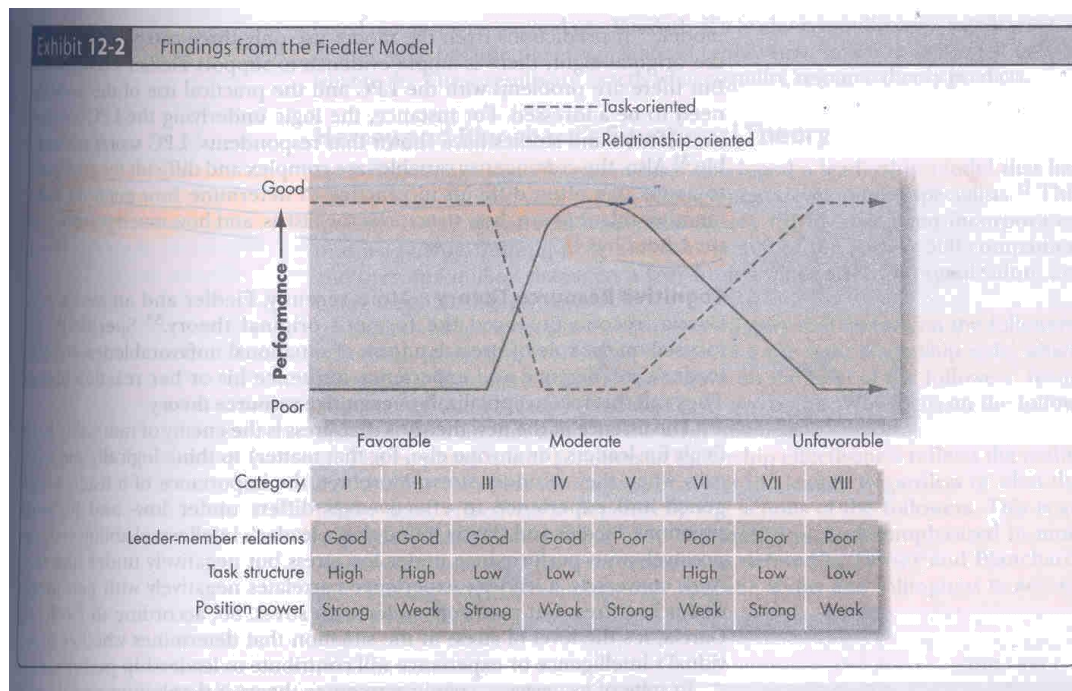
**Defining the Situation:** After an individual's basic leadership style has been assessed through the LPC, it is necessary to match the leader with the situation. Fiedler has identified three contingency dimensions that, he argues, define the key situational factors that determine leadership effectiveness. These are leader-member relations, task structure, and position power. They are defined as follows:

1. **Leader-member relations:** the degree of confidence, trust, and respect members have in their leader.
2. **Task structure:** the degree to which the job assignments are procedurized (that is, structured or unstructured)
3. **Position power:** The degree of influence a leader has over power variables such as hiring, firing, discipline, promotions, and salary increases.

The next step in the Fiedler model is to evaluate the situation in terms of these three contingency variables. Leader-member relations are either good or poor, task structure is either high or low, and position power is either strong or weak.

Fiedler states the better the leader-member relations, the more highly structured the job, and the stronger the position power, the more control the leader has. For example, a very favorable situation (in which the leader would have a great deal of control) might involve a payroll manager who is well respected and whose employees have confidence in her (good leader-member relations), for which the activities to be done – such as wage computation, check writing, report filing – are specific and clear (high task structure), and the job provides considerable freedom for her to reward and punish her employees (strong position power). However, an unfavorable situation might be the disliked chairperson of voluntary United Way fund-raising team. In this job, the leader has very little control. Altogether, by mixing the three contingency dimensions, there are potentially eight different situations or categories in which leaders could find themselves (see Exhibit 12-2).

**Matching Leaders and Situations:** With knowledge of an individual's LPC and an assessment of the three contingency dimensions, the Fiedler model proposes matching them up to achieve maximum leadership effectiveness. Based on his research, Fiedler concluded that task-oriented leaders tend to perform better in situations that were very favorable to them and in situations that were very unfavorable (see Exhibit 12-2). So Fiedler would predict that when faced with a category I, II, III, VII, or VIII situation, task-oriented leaders perform better. Relationship-oriented leaders, however, perform better in moderately favorable situations – categories IV through VI. In recent years, Fiedler has condensed these eight situations down to three. He now says that task-oriented leaders perform best in situations of high and low control, while relationship-oriented leaders perform best in moderate control situations.



Given Fiedler's findings, how would you apply them? You would seek to match leaders and situations. Individual's LPC scores would determine the type of situation for which they were best suited. That "situation" would be defined by evaluating the three contingency factors of leader-member relations, task structure, and position power. But remember that Fiedler views an individual's leadership style as being fixed. Therefore, there are really only two ways in which to improve leader effectiveness.

First, you can change the leader to fit the situation – as in a baseball game, a manager can put a right-handed pitcher or a left-handed pitcher into the game, depending on the situational characteristics of the hitter. So, for example, if a group situation rates as highly unfavorable but is currently led by a relationship-oriented manager, the group's performance could be improved by replacing that manager with one who is task-oriented. The second alternative would be to change the situation to fit the leader. That could be done by restructuring tasks or increasing or decreasing the power that the leader has to control factors such as salary increases, promotions, and disciplinary action.

**Evaluation:** As a whole, reviews of the major studies that tested the overall validity of the Fiedler model lead to a generally positive conclusion. That is, there is considerable evidence to support at least substantial parts of the model. If predictions from the model use only three categories rather than the original eight, there is ample evidence to support Fiedler's conclusions. But there are problems with the LPC and the practical use of the model that need to be addressed. For instance, the logic underlying the LPC is not well understood and studies have shown that respondents' LPC scores are not stable. Also, the contingency variables are complex and difficult for practitioners to assess. It's often difficult in practice to determine how good the leader-member relations are, how structured the task is, and how much position power the leader has.

**Cognitive Resource Theory:** More recently, Fiedler and an associate, Joe Garcia, reconceptualized the former's original theory. Specifically, they focused on the role of stress as a form of situational unfavorableness and how a leader's intelligence and experience influence his or her reaction to stress. They call this reconceptualization **cognitive resource theory**.

The essence of the new theory is that stress is the enemy of rationality. It's difficult for leader (or anyone else, for that matter) to think logically and analytically when they're under stress. Moreover, the importance of a leader's intelligence and experience to effectiveness differs under low-and high-stress situations. Fiedler and Garcia

found that a leader's intellectual abilities correlate positively with performance under low stress but negatively under high stress. And, conversely, a leader's experience correlates negatively with performance under low stress but positively under high stress. So, according to Fiedler and Garcia, it's the level of stress in the situation that determines whether an individual's intelligence or experience will contribute to leadership performance.

In spite of its newness, cognitive resource theory is developing a solid body of research support. In fact, a study confirmed that when the stress level was low and the leader was directive (that is, when the leader was willing to tell people what to do), intelligence was important to a leader's effectiveness. And in high-stress situations, intelligence was of little help because the leader was too cognitively taxed to put smarts to good use. Similarly, if a leader is nondirective, intelligence is of little help because the afraid to put these smart to use to tell people what to do. These results are exactly what cognitive resource theory predicts.

## Myth or Science

### “It's Experience That Counts!”

The belief in the value of experience as a predictor of leadership effectiveness is very strong and widespread. Unfortunately, experience alone is generally a poor predictor of leadership. Organizations carefully screen outside candidates for senior management positions on the basis of their experience. Similarly, organizations usually require several years of experience at one managerial level before a person can be considered for promotion. For that matter, have you ever filled out an employment application that didn't ask about previous experience or job history? Clearly, management believes that experience counts. But the evidence doesn't support this view. Studies of military officers, research and development teams, shop supervisors, post office administrators, and school principals tell us that experienced managers tend to be no more effective than the managers with little experience.

One flaw in the “experience counts” logic is the assumption that length of time on a job is actually a measure of experience. This says nothing about the quality of experience. The fact that one person has 20 years' experience while another has 2 years' doesn't necessarily mean that the former has had 10 times as many meaningful experiences. Too often, 20 years of experience is nothing more than 1 year of experience repeated 20 times! In even the most complex jobs, real learning typically ends after about 2 years. By then, almost all new and unique situations have been experienced. So one problem with trying to link experience with leadership effectiveness is not paying attention to the quality and diversity of the experience.

A second problem is that there is variability between situations that influences the transferability or relevance of experience. Situations in which experience is obtained is rarely comparable to new situations. Jobs differ, support resources differ, organizational cultures differ, follower characteristics differ, and so on. So another reason that leadership experience isn't strongly related to leadership performance is undoubtedly due to variability of situations.

## Hersey and Blanchard's Situational Theory

Paul Hersey and Ken Blanchard have developed a leadership model that has gained a strong following among management development specialists. This model – called **situational leadership theory (SLT)** – has been incorporated into leadership training programs as over 400 of the Fortune 500 companies; and over one million managers a year from a wide variety of organizations are being taught its basic elements.

Situational leadership is a contingency theory that focuses on the followers. Successful leadership is achieved by selecting the right leadership style, which Hersey and Blanchard argue is contingent on the level of the followers; readiness. Before we proceed, we should clarify two points: Why focus on the followers? and What do they mean by the term *readiness*?

The emphasis on the followers in leadership effectiveness reflects the reality that it is the followers who accept or reject the leader. Regardless of what the leader does, effectiveness depends on the actions of the followers. This is an important dimension that has been overlooked or underemphasized in most leadership theories. The term *readiness*, as defined by Hersey and Blanchard, refers to the extent to which people have the ability and willingness to accomplish a specific task.

SLT essentially views the leader-follower relationship as analogous to that between a parent and a child. Just as a parent needs to relinquish control as a child becomes more mature and responsible, so too should leaders. Hersey and Blanchard identify four specific leader behaviors – from highly directive to highly laissez-faire. The most

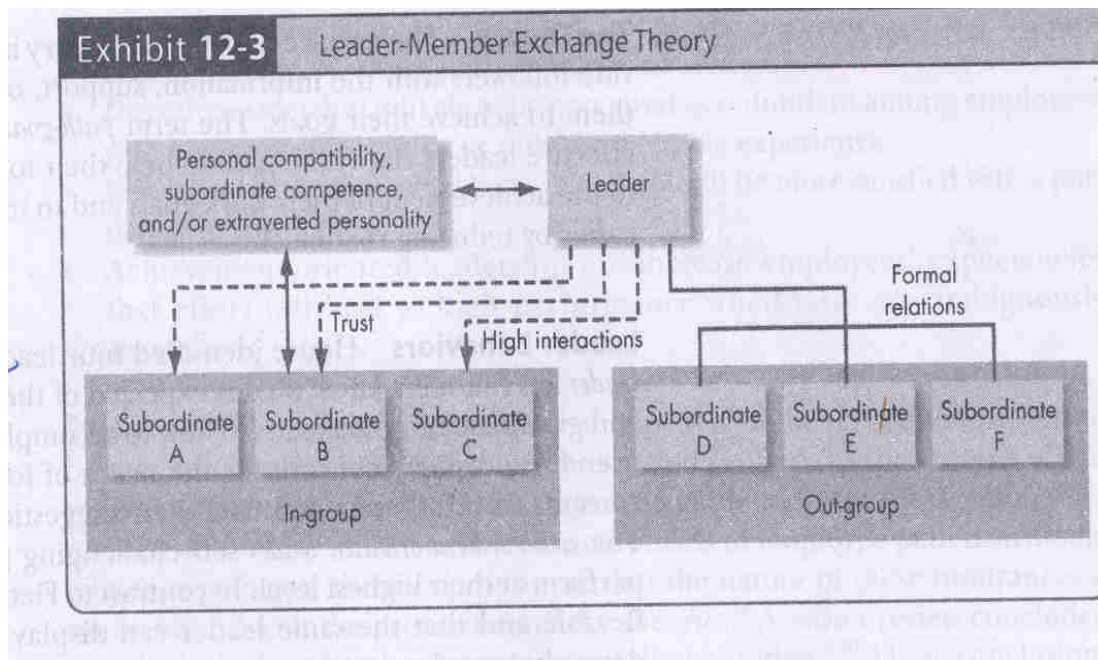
effective behavior depends on a follower's ability and motivation. So SLLT say if a follower is *unable* and *unwilling* to do a task, the leader needs to give clear and specific directions; if followers are *unable* and *willing*, the leader needs to display high task orientation to compensate for the followers' lack of ability and high relationship orientation to get the followers needs to use a supportive and participative style; and if the employee is both *able* and *willing*, the leader doesn't need to do much.

SLT has an intuitive appeal. It acknowledges the importance of followers and builds on the logic that leaders can compensate for ability and motivational limitations in their followers. Yet research efforts to test and support the theory have generally been disappointing. Why? Possible explanations include internal ambiguities and inconsistencies in the model itself as well as problems with research methodology in tests of the theory. So in spite of its intuitive appeal and wide popularity, any enthusiastic endorsement, at least at this time, has to be cautioned against.

### Leader-Member Exchange Theory

For the most part, the leadership theories we've covered to this point have largely assumed that leaders treat all their followers in the same manner. That is, they assume leaders use a fairly homogeneous style with all of the people in their work unit. But think about your experiences in groups. Did you notice that leaders often act very differently toward different people? Did the leader tend to have favorites who made up his or her 'in-group'? If you answered 'yes' to both these questions, you're acknowledging the foundation of leader-member exchange theory. The **leader-member exchange (LMX) theory** argues that because of time pressures, leaders establish a special relationship with a small group of their followers. These individuals make up the in-group – they are trusted, get a disproportionate amount of the leader's attention, and are more likely to receive special privileges. Other followers fall into the out-group. They get less of the leader's time, fewer of the preferred rewards that the leader controls, and have leader-followers relations based on formal authority interactions.

The theory proposes that early in the history of the interaction between a leader and a given follower, the leader implicitly categorizes the follower as an "in" or an "out" and that relationship is relatively stable over time. Leaders induce LMX by rewarding those employees with whom they want a closer linkage and punishing those with whom they do not. But for the LMX relationship to remain intact, the leader and the follower must invest in the relationship.



Just precisely how the leader chooses who falls into each category is unclear, but there is evidence that leaders tend to choose in-group members because they have attitude and personality characteristics that are similar

to the leader's or a higher level of competence than out-group members (see Exhibit 12-3). For example, followers who have a mastery orientation develop closer leader-member exchanges because such employees turn to their supervisors for sources of valuable information and experience that can provide employees with prospects for skill development and self-improvement that can further benefit the company. Communicating frequently with a supervisor appears to be helpful only for high LMX employees, probably because supervisors perceive frequent communication from low LMX employees as annoying and a waste of their time. The key point to note here is that even though it is the leader who is doing the choosing, it is the follower's characteristics that are driving the leader's categorizing decision.

Few followers would want to be outside a leader's inner circle. There is a danger to being part of the inner circle, though. As part of the inner circle, your fortunes may rise and fall with your leader. When CEOs are ousted, for example, their inner circle usually goes with them. When Tyco CEO Dennis Kozlowski was given the boot, eventually his closest associate, CFO Mark Swartz, was also forced to resign, although he was well regarded on Wall Street and was thought to be one of the executives who best understood the intricacies of Tyco's business.

Research to test LMX theory has been generally supportive. More specifically, the theory and research surrounding it provide substantive evidence that leaders do differentiate among followers; that these disparities are far from random; and that followers with in-group status will have higher performance ratings, lower turnover intentions, greater satisfaction with their superior, and higher overall satisfaction than will the out-group. These positive findings for in-group members shouldn't be totally surprising given our knowledge of the self-fulfilling prophecy. Leaders invest their resources with those they expect to perform best. And "knowing" that in-group members are the most competent, leaders treat them as such and unwittingly fulfill their prophecy.

### **Path-Goal Theory**

Developed by Robert House, path-goal theory extracts elements from the Ohio State leadership research on initiating structure and consideration and the expectancy theory of motivation.

**The Theory:** The essence of path-goal theory is that it's the leader's job to provide followers with the information, support, or other resources necessary for them to achieve their goals. The term path-goal is derived from the belief that effective leaders clarify the path to help their followers get from where they are to the achievement of their work goals and to make the journey along the path easier by reducing roadblocks.

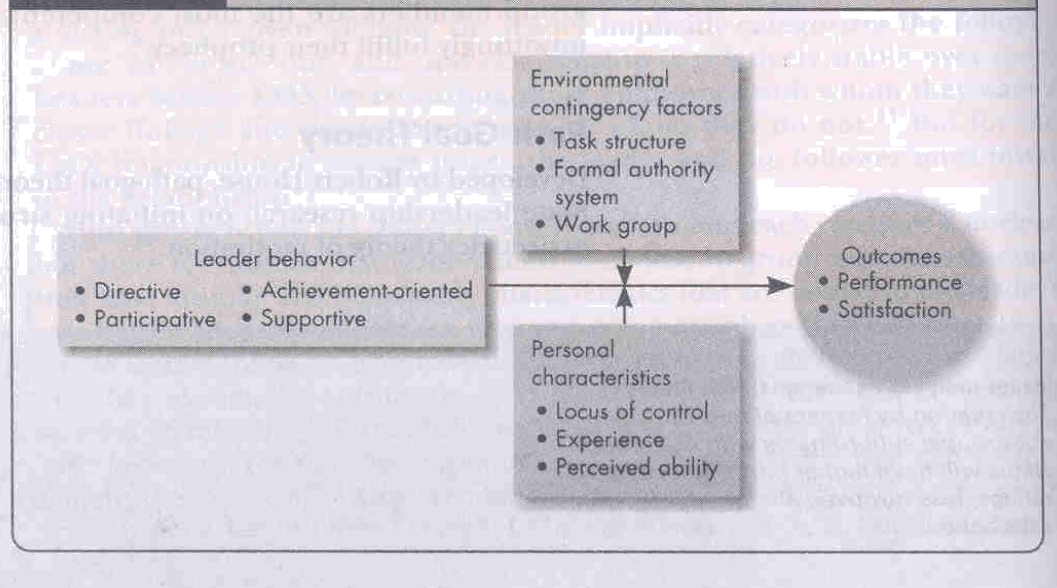
**Leader Behaviors:** House identified four leadership behaviors. The directive leader lets followers know what is expected of them, schedules work to be done, and gives specific guidance as to how to accomplish tasks. The *supportive leader* is friendly and shows concern for the needs of followers. The *participative leader* consults with followers and uses their suggestions before making a decision. The achievement-oriented leader sets challenging goals and expects followers to perform at their highest level. In contrast to Fiedler, House assumes leaders are flexible and that the same leader can display any or all of these behaviors depending on the situation.

## **Contingency Variables and Predictions**

As Exhibit 12-4 illustrates, path-goal theory proposes two classes of contingency variables that moderate the leadership behavior-outcome relationship – those in the environment that are outside the control of the employee (task structure, the formal authority system, and the work group) and those that are part of the personal characteristics of the employee (locus of control, experience, and perceived ability). Environmental factors determine the type of leader behavior required as a complement if follower outcomes are to be maximized, while personal characteristics of the employee determine how the environment and leader behavior are interpreted. So the theory proposes that leader behavior will be ineffective when it is redundant with sources of environmental structure or incongruent with employee characteristics. For example the following are illustrations of predictions based on path-goal theory:



**Exhibit 12-4** The Path-Goal Theory



- Directive leadership leads to greater satisfaction when tasks are ambiguous or stressful than when they are highly structured and well laid out.
- Supportive leadership results in high employee performance and satisfaction when employees are performing structured tasks.
- Directive leadership is likely to be perceived as redundant among employees with high perceived ability or with considerable experience.
- Employees with an internal locus of control will be more satisfied with a participative style.
- Achievement-oriented leadership will increase employees' expectancies that effort will lead to high performance when tasks are ambiguously structured.

**Evaluation:** Due to its complexity, testing path-goal theory has not proven to be easy. A review of the evidence suggests mixed support. As the authors of this review commented, "These results suggest that either effective leadership does not rest in the removal of roadblocks and pitfalls to employee path instrumentalities and path-goal theories propose or that the nature of these hindrances if not in accord with the proposition of the theories." Another review concluded that the lack of support was "shocking and disappointing." These conclusions have been challenged by others who argue that adequate tests of the theory have yet to be conducted. Thus, it is safe to say that the jury is still out regarding the validity of path-goal theory. Because it is so complex to test, that may remain the case for some time to come.

### Leader-Participation Model

Victor Vroom and Phillip Yetton developed a **leader-participation model** that related leadership behavior and participation in decision making. Recognizing that task structures have varying demands for routing and non-routine activities, these researchers argued that leader behavior must adjust to reflect the task structure. Vroom and Yetton's model was normative – it provided a sequential set of rules that should be followed in determining the form and amount of participation in decision making, as determined by different types of situations. The model was a decision tree incorporating seven contingencies (whose relevance could be identified by making "Yes" or "no" choices) and five alternative leadership styles. More recent work by Vroom and Arthur Jago has resulted in a revision of this model. The revised model retains the same five alternative leadership styles – from the leader's making the decision completely alone to sharing the problem with the group and developing a consensus decision – but adds a set of problem types and expands the contingency variables to 12. The 12 contingency variables are listed in Exhibit 12-5.

Research testing both the original and revised leader-participation models has not been encouraging, although the revised model rates higher in effectiveness. Criticism has tended to focus on variables that have been omitted and on the model's overall complexity. Other contingency theories demonstrate that stress, intelligence, and experience are important situational variables. Yet the leader-participation model fails to include them but more important, at least from a practical point of view, is the fact that the model is far too complicated for the typical manager to use on a regular basis. Although Vroom and Jago have developed a computer program to guide managers through all the decision branches in the revised model, it's not very realistic to expect practicing managers to consider 12 contingency variables, eight problems types, and five leadership styles in trying to select the appropriate decision process for a specific problem.

We obviously haven't done justice in this discussion to the model's sophistication. So what can you gain from this brief review? Additional insights into relevant contingency variables. Vroom and his associates have provided us with some specific, empirically supported contingency variables that you should consider when choosing your leadership style.

#### **Exhibit 12-5**

1. Importance of the decision
2. importance of obtaining follower commitment to the decision
3. whether the leader has sufficient information to make a good decision
4. how well structured the problems is
5. Whether an autocratic decision would receive follower commitment
6. Whether followers "buy into" the organization's goals.
7. Whether there is likely to be conflict among follower over solution alternatives
8. whether followers have the necessary information to make a good decision
9. time constraints on the leader that may limit follower involvement
10. Whether costs to bring geographically dispersed members together is justified
11. Importance to the leader of minimizing the time it takes to make the decision
12. Importance of using participation as a tool for developing follower decision skills.

## **International JOB**

### **Cultivating an International Perspective: A Necessity for Leader**

ACCOUNTING AND CONSULTING FIRM PRICEWATER – houseCoopers (PwC) is serious about expanding the world-view of its up-and-coming leaders. So the company started the Ulysses Program, which sends the company's potential leaders to foreign countries to gain knowledge and experience in cultural diversity.

For example, PwC sent on group of managers on a 8 week consulting assignment in the Namibian outback. Their job? To help village leaders deal with the growing AIDS crisis. Without Power-Point presentations and e-mail, the managers quickly learned to communicate in a more traditional way – face-to-face. The managers were forced to rely less on quick technologies and more on forging connections by cultivating relationships with diverse clients. By experiencing diversity first hand at what is perhaps its extreme, PwC hopes that its managers will be better-equipped to handle issues in any culture in which they conduct business. The company says that the program gives its future leaders a broad, international perspective on business issues and makes it more likely that they will find creative, unconventional solutions to complex problems. In addition, participants can realize what they are able to accomplish when they do not have access to their usual resources. In essence, they are forced to become leaders.

The jury is still out on whether the program is effective at increasing the global leadership skills of those who participate. Nevertheless, participants of the Ulysses Program tout its benefits, and other companies have taken notice – Johnson & Johnson and Cisco Systems are just two several companies that have adopted similar programs.

*Source: Based on J. Hempel, and S. Porges, "It Takes a Village – And a Consultant," Business Week, September 6, 2004, p. 76*

## **Summary and Implications for Managers**

Leadership plays a central part in understanding group behavior, for it's the leader who usually provides the direction toward goal attainment. Therefore, a more accurate predictive capability should be valuable in improving group performance.

The early search for a set of universal leadership traits failed. However, recent efforts using the Big Five personality framework has generated much more encouraging results. Specifically, the traits of extraversion, conscientiousness, and openness to experience show strong and consistent relationships to leadership.

The behavioral approach's major contribution was narrowing leadership into task-oriented and people-oriented styles.

A major breakthrough in our understanding of leadership came when we recognized the need to develop contingency theories that included situational factors. At present, the evidence indicates that relevant situational variables would include the task structure of the job; level of situational stress; level of group support; the leader's intelligence and experience; and follower characteristics as personality, experience, ability, and motivation.



# Communication

After studying this chapter, you should be able to:

- |  |   |
|--|---|
| 1 Describe the communication process   | 5 Discuss how computer-aided technology is changing organizational communication      |
| 2 Contrast the advantages and disadvantages of oral versus written communication | 6 Explain the importance of channel richness to improving communication effectiveness |
| 3 Compare the effectiveness of the chain, wheel, and all-channel networks        | 7 Identify common barriers to effective communication                                 |
| 4 Identify the factors affecting the use of the grapevine                        | 8 Describe the potential problems in cross-cultural communication                     |

## Clear Communication Is Vital

Can the misunderstanding of a few words literally mean the difference between life and death? They can in the airline business. A number of aviation disasters have been largely attributed to problems in communication. Consider the following:

History's worst aviation disaster occurred in 1977 at foggy Tenerife in the Canary Islands. The captain of a KLM flight thought the air traffic controller had cleared him to take off. But the controller intended only to give departure instructions. Although the language spoken between the Dutch KLM captain and the Spanish controller was English, confusion was created by heavy accents and improper terminology. The KLM Boeing 747 hit a Pan Am 747 at full throttle on the runway, killing 583 people.

In 1990, Colombian Avianca pilots, after several holding patterns caused by bad weather, told controllers as they neared New York Kennedy Airport that their Boeing 707 was "running low on fuel." Controllers heard those words all the time, so they took no special action. While the pilots knew there was a serious problem, they failed to use a key phrase- "fuel emergency"- which would have obligated controllers to direct the Avianca flight ahead of all others and clear it to land as soon as possible. The people at Kennedy never understood the true nature of the pilots' problem. The jet ran out of fuel and crashed 16 miles from Kennedy. Seventy-three people died.

In 1993, Chinese pilots flying a U.S. built MD-80 tried to land in heavy fog at Urumqi, in north west China. They were baffled by an audio alarm from the jet's ground proximity warning system. Just before impact, the cockpit recorder picked up one crew member saying to the other in Chinese: "What does pull up' mean?" The plane hit power lines and crashed killing 12.

In September 1997, a Garuda Airlines jetliner crashed into a jungle, just 20 miles south of the Medan Airport on the island of Sumatra. All 234 aboard were killed. The cause of this disaster was the pilot and the air traffic controller confusing the words "left" and "right" as the plane approached the airport under poor visibility conditions.

On October 31, 2000 visibility was very poor at Taipei –Chiang Kai-shek Airport because a major typhoon was in the Taiwan area. The pilots of a Singapore Airlines 747, stopping in Taipei en route from Singapore to Los Angeles, had not read a report issued 60 days earlier by Taiwan's Civil Aviation Administration informing pilots that runway 05R would be closed for construction from September 13 to November 22. Told by the control tower to use 05L for their takeoff, the Singapore pilots taxied onto 05R, which ran parallel. Less than 4 seconds after beginning their takeoff, their plane plowed into concrete barriers, excavators, and other equipment on the runway. The plane broke apart and 83 people died.

Bad weather and poor communication paired up again to create another disaster in October 2001, this time at Milano –Linate Airport in Italy. Visibility was poor and tower controllers were not able to establish visual or radar contact with planes. Miscommunications between the controllers and pilots of an SAS commercial jet and a small Citations business jet, combined with the poor visibility, led to the two planes colliding on the runway. One hundred and ten people died.

The preceding examples tragically illustrate how miscommunication can have deadly consequences. In this chapter, we'll show (obviously not in as dramatic a fashion) that good communication is essential to any group's or organization's effectiveness. Research indicates that poor communication is probably the most frequently cited source of interpersonal conflict.<sup>2</sup> Because individuals spend nearly 70 percent of their waking hours communicating- writing, reading, speaking, listening – it seems reasonable to conclude that one of the most inhibiting forces to successful group performance is a lack of effective communication.

No group can exist without communication: the transference of meaning among its members. It is only through transmitting meaning from one person to another that information and ideas can be conveyed. Communication, however, is more than merely imparting meaning. It must also be understood. In a group in which one member

speaks only German and the others do not know German the individual speaking German will not be fully understood. Therefore, **communication** must include both the transference and the understanding of meaning.

An idea, no matter how great, is useless until it is transmitted and understood others. Perfect communication, if there were such a thing, would exist when a thought or an idea was transmitted so that the mental picture perceived by the receiver was exactly the same as that envisioned by the sender. Although elementary in theory, perfect communication is never achieved in practice, for reasons we shall expand on later in the chapter:

Before making too many generalizations concerning communication and problems in communicating effectively, we need to review briefly the functions that communication performs and describe the communication process.

## Function of Communication

Communication serves four major functions within a group or Organization: control, motivation, emotional expression, and information.

Communication acts to control member behavior in several ways. Organizations have authority hierarchies and formal guidelines that employees are required to follow. When employees, for their job description, or to comply with company policies, communication is performing a control function. But informal communication also controls behavior. When work groups tease or harass a members who produces too much (and makes the rest of the group look bad), they are informally communicating with, and controlling, the member's behavior.

Communication fosters motivation by clarifying to employees what is to be done, how well they are doing, and what can be done to improve performance if it's subpart. We saw this operating in our review of goal –setting and reinforcement theories earlier. The formation of specific goals, feedback on motivation and require communication.

For many employees, their works group is a primary source for social interaction. The communication that takes place within the group is a fundamental mechanism by which members show their frustrations and feelings of satisfaction. Communication, therefore, provides a release for the emotional expression of feelings and for fulfillment of social needs.

The final function that communication performs relates to its role in decision making. It provides the information that individuals and groups need to make decisions by transmitting the data to identify and evaluate alternative choices.

No one of these four functions should be seen as being more important than the others. For groups to perform effectively, they need to maintain some from of control over members, stimulate members to perform, provide a means for emotional expression, and make decision choices. You can assume that almost every communication interaction that takes place in a group or organization performs one or more of these four functions.

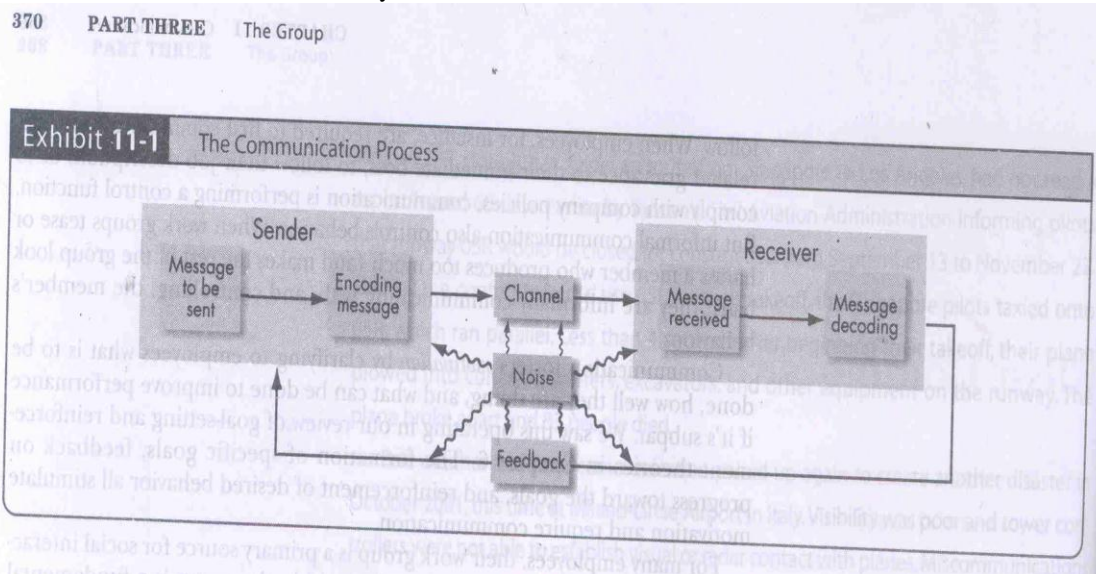
## The Communication Process

Before communication can take place, a purpose, expressed as a message to be conveyed, is needed. It passes between a sender and receiver. The message is encoded (converted to a symbolic form) and passed by way of some medium (channel) to the receiver, who retranslates (decodes) the message initiated by the sender. The result is transference of meaning from one person to another.

Exhibit 11-1 depict this communication process. The key parts of this model are: (1) the sender, (2) encoding, (3) the message, (4) the channel, (5) decoding, (6) the receiver, (7) noise, and (8) feedback.

The sender initiates a message by encoding a thought. The message is the actual physical product from the sender's encoding. When we speak, speech is the message. When we write, the writing is the message. When we

gesture, the movements of our arms and the expressions on our faces are the message. The channel is the medium through which the message travels. It is selected by the sender, who must determine whether to use a formal or informal channel. Formal channels are established by the organization and transmit messages that are related to the professional activities of members. They



Traditionally follow the authority chain within the organization. Other forms of messages such as personal or social follow the informal channels in the organization. These informal channels are spontaneous and emerge as a response to individual choices. They received the object to whom the message is directed. But before the message can be received, the symbols in it must be translated into a form that can be understood by the receiver. This step is the decoding the message. Noise represents communication barriers that distort the clarity of the message. Examples of possible noise sources include perceptual problems, information overload, semantic difficulties, or cultural differences. The final link in the communication process is a feedback loop. Feedback is the check on how successful we have been in transferring our messages as originally intended. It determines whether understanding has been achieved.

## Direction of Communication

Communication can flow vertically or laterally. The vertical dimension can be further divided into downward and upward directions.<sup>6</sup>

### Downward

Communication that flows from one level of a group or organization to lower levels is downward communication. When we think of managers communicating with employees, the downward pattern is the one we are usually thinking of. It's used by groups leaders and managers to assign goals, provide job instructions, inform employees of policies and procedures, point out problems that need attention, and offer feedback about performance. But downward communication doesn't have to be oral or face-to-face contact. When management sends letters to employees' homes to advise them of the organization's new sick leave policy, it's using downward communication. So is an e-mail from a team leader to the members of her team, reminding them of an upcoming deadline.

### Upward

Upward communication flows to a higher level in the group or organization. It's used to provide feedback to higher-ups, inform them of progress toward goals, and relay current problems. Upward communication keeps managers aware of how employees feel about their jobs, coworkers, and the organization in general. Managers also rely on upward communication for ideas on how things can be improved.

Some organizational examples of upward communication are performance reports prepared by lower management for review by middle and top management, suggestion boxes, employee attitude surveys, grievance procedures, superior-subordinate discussions, and informal “gripe” sessions in which employees have the opportunity to identify and discuss problems with their boss or representatives of higher managements. For example, FedEx prides itself on its computerized upward communication program. All its employees annually complete climate surveys and reviews of management. This program was cited as a key human resources strength by the Malcolm Baldrige National Quality Award examiners when FedEx won the honor.

## **Lateral**

When communication takes place among members of the same work group, among members of work groups at the same level, among managers at the same level, or among any horizontally equivalent personnel, we describe it as lateral communications.

Why would there be a need for horizontal communication if a group or organization's vertical communications are effective? The answer is that horizontal communications are often necessary to save time and facilitate coordination. In some cases, these lateral relationships are formally sanctioned. More often, they are informally created to short-circuit the vertical hierarchy and expedite action. So lateral communication can, from management's viewpoint, be good or bad. Because strict adherence to the formal vertical structure for all communications can impede the efficient and accurate transfer of information, lateral communications can be beneficial. In such cases, they occur with the knowledge and support of superiors. But they can create dysfunctional conflicts when the formal vertical channels are breached, when members go above or around their superiors to get things done, or when bosses find out that actions have been taken or decisions made without their knowledge.

## **Interpersonal Communication**

How do group members transfer meaning between and among each other? There are three basic methods. People essentially rely on oral, written, and nonverbal communication.

### **Oral Communication**

The chief means of conveying messages is oral communication. Speeches, formal one-on-one and group discussions, and the informal rumor mill or grapevine are popular forms of oral communication.

The advantages of oral communication are speed and feedback. A verbal message can be conveyed and a response received in a minimal amount of time. If the receiver is unsure of the message, rapid feedback allows for early detection by the sender and, hence, allows for early correction.

The major disadvantage of oral communication surfaces in organizations or whenever the message has to be passed through a number of people. The more people a message must pass through, the greater the potential distortion. If you ever played the game “telephone” at a party, you know the problem. Each person interprets the message in his or her own way. The message's content, when it reaches its destination, is often very different from that of the original. In an organization, where decisions and other communications are verbally passed up and down the authority hierarchy, there are considerable opportunities for messages to become distorted.

### **Written Communication**

Written communication includes memos, letters, fax transmissions, electronic mail, instant messaging, organizational periodicals, notices placed on bulletin boards, or any other device that is transmitted via written or symbols.

Why would a sender choose to use written communications? They're often tangible and verifiable. When printed, both the sender and receiver have a record of the communication; and the message can be stored for an indefinite period. If there are questions concerning the content of the message, it is physically available for later reference. This feature is particularly important for complex and lengthy communications. The marketing plan for a new product, for instance, is likely to contain a number of tasks spread out over several months. By putting it in writing, those who have to initiate the plan can readily refer to it over the life of the plan. Final benefit of all written communication comes from the process itself. You're usually more careful with the written word than the oral word. You're forced to think more thoroughly about what you want to convey in a written message than in a spoken one. Thus, written communications are more likely to be well thought out, logical, and clear.

Of course, written messages have their drawbacks. They're time-consuming. You could convey far information to a college instructor in a 1-hour oral exam than in a 1-hour written exam. In fact could probably say the same thing in 10 to 15 minutes that it would take you an hour to write. So, although writing may be more precise, it also consumes a great deal of time. The other major disadvantage is feedback, or lack of it. Oral communication allows the receiver to respond rapidly to what he thinks he hears. Written communication, however, does not have built-in feedback mechanism. The result is that the mailing of a memo is no assurance it has been received, and, if received, there is no guarantee the recipient will interpret it as the sender intended. The latter point is also relevant in oral communications, except it's easy in such cases merely to ask the receiver to summarize what you've said. An accurate summary presents feedback evidence that the message has been received and understood.

### **Nonverbal Communication**

Every time we verbally give a message to someone, we also give importance to a nonverbal message. In some instances, the nonverbal component may stand alone. For example, in a single bar, a glance, a stare, a smile, a frown, and a provocative body movements all convey meaning. As such, no discussion of communication would be complete without consideration of nonverbal communication-which includes body movements, the intonations or emphasis we give to words, facial expressions, and the physical distance between the sender and receiver.

It can be argued that every body movement has a meaning and no movement is an accident. For example, through body language we say, "Help me, I'm lonely", "Take me, I'm available", "Leave me alone, I'm depressed." And rarely do we send our message consciously. We act out our state of being with nonverbal body language. We lift one eyebrow for disbelief. We rub our noses for puzzlement. We clasp our arms to isolate ourselves or to protect ourselves. We shrug our shoulders for indifference, wink one eye for intimacy, tap our fingers for impatience, slap our forehead for forgetfulness.

The two most important messages that body language conveys are (1) the extent to which an individual likes another and is interested in his or her views and (2) the relative perceived status between a sender and receiver. For instance, we're more likely to position ourselves closer to people we like and touch them more often. Similarly, if you feel that you're a higher status than another, you're more likely to display body movements-such as crossed legs or a slouched seating position- that reflect a casual and relaxed manner.

Body language adds to, and often complicates, verbal communication. A body position or movement does not by itself have a precise or universal meaning, but when it is linked with spoken language, it gives fuller meaning to a sender's message.

If you read the verbatim minutes of a meeting, you wouldn't grasp the impact of what was said in the same way you would if you had been there or saw the meeting in video. Why? There is no record of nonverbal communication. The emphasis given to words or phrases is missing. Exhibit 11-2 illustrates how intonations can change the meaning of a message. Facial expressions also convey meaning. A snarling face says something different from a smile. Facial expressions, along with intonations, can show arrogance, aggressiveness, fear, shyness, and other characteristics that would never be communicated if you read a transcript of what had been said.

The way individuals space themselves in terms of physical distance also has meaning. What is considered proper spacing is largely dependent on cultural norms. For example, what is considered a businesslike distance in some European countries would be viewed as intimate in many parts of North America. If someone stands closer to

you than is considered appropriate, it may indicate aggressiveness or sexual interest; if farther away than usual, it may mean disinterest displeasure with what is being said.

<b>Exhibit 11-2</b>	
<b>Change your tone and you change your meaning</b>	
<b>Placement of the emphasis</b>	<b>What it means</b>
Why don't I take you to dinner tonight?	I was going to take someone else.
Why don't I take you to dinner tonight?	Instead of the guy you were going with.
Why don't I take you to dinner tonight?	I'm trying to find a reason why shouldn't take you.
Why don't I take you to dinner tonight?	Do you have a problem with me?
Why don't I take you to dinner tonight	Instead of going on your own.
Why don't I take you to dinner tonight?	Instead of lunch tomorrow.
Why don't I take you to dinner tonight?	Not tomorrow night.

Source: Based on M. Kiely, "When 'No' Means 'Yes,'" marketing, October 1993, pp. 7-9. Reproduced in A. Huczynski and D. Buchanan, Organizational Behavior, 4<sup>th</sup> ed. (Essex, England: Pearson Education, 2001), p.194

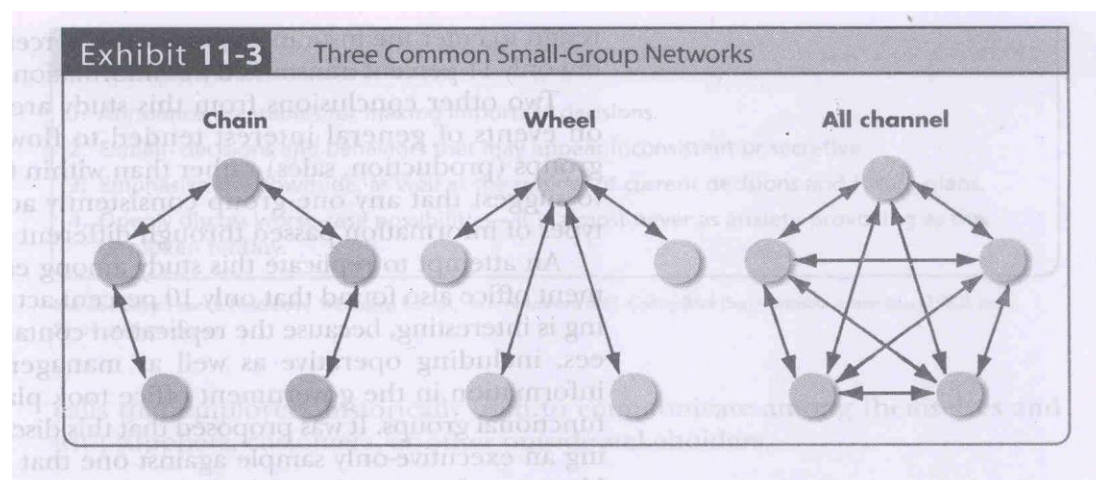
It's important for the receiver to be alert to these nonverbal aspects of communication. You should look for nonverbal cues as well listen to the literal meaning of a sender's words you should particularly be aware of contradictions between the messages. You may say she is free to talk to you about a pressing budget problem, but you may see nonverbal signals suggesting that this is not the time to discuss the subject. Regardless of what is being said, an individual who frequently glances at her wristwatch is giving the message that she would prefer to terminate the conversation. We misinform others when we express one message verbally, such as trust, but nonverbally communicated a contradictory message that reads, "I don't have confidence in you."

## Organizational Communication

In this section, we move from interpersonal communication to organizational communication. Our focus here will be on formal network, the grapevine, computer-aided mechanisms used by organizations to facilitate communication, and the evolving topic of knowledge management.

### Formal Small-Group Network

Formal organizational network can be very complicated. They can, for instance, include hundreds of people and a half-dozen or more hierarchical levels. To simplify our discussion, we've condensed these networks into three common small groups of five people each (see Exhibit 11-3). These three networks are the chain, wheel and all-channel. Although these three networks have been extremely simplified, they do allow us to describe the qualities of each.



The *chain* rigidly follows the formal chain of command. This network approximates the communication channels you might find in a three-level organization. The *wheel* relies on central figures to act as the conduit for all of the group's communication. It simulates the communication network you would find on a team with a strong leader. The all-channel network permits all groups members to actively communicate with each other. The all-channel network is most often characterized in practice by self-managed teams, in which all group members are free to contribute and no one person takes on a leadership role.

As Exhibit 11-4 demonstrates, the effectiveness of each network depends on the dependent variable you're concerned about. For instance, the structure of the wheel facilitates the emergence of a leader, the all-channel network is best if you are concerned with having high members satisfaction, and the chain is best if accuracy is most important. Exhibit 11-4 leads us to the conclusion that no single network will be best for all occasions.

## The Grapevine

The formal system is not the only communication network in a group or organization. There is also informal one, which one, which is called the grapevine. And although the grapevine may be informal, this doesn't mean it's an important source of information. For instance, a survey found that 75 percent of employees here about matters first through rumors on the grapevine.

The grapevine has three main characteristics. First, it is not controlled by management. Second, it is perceived by most employees as being more believable and reliable than formal communication issued by top management. And third, it is largely used serve the self-interests of the people within it.

One of the most famous studies of the grapevine investigated the communication pattern among 67 managerial personnel in a small manufacturing firm. The basic approach used was to learn from each communication recipient how he or she first received a given piece of information and then trace it back to its source. It was found that, while the grapevine was an important source of information, only 10 percent of the executives acted as liaison an individual, that is passed the information on to more than one other person. For example, when one executive decided to

<b>Exhibit 11-4                      Small-Group Networks and Effective Criterial</b>			
<b>Criteria</b>	<b>Networks</b>		
	<b>Chain</b>	<b>Wheel</b>	<b>All Channel</b>
Speed	Moderate	Fast	Fast
Accuracy	High	High	Moderate
Emergence of a leader	Moderate	High	None
Member Satisfaction	Moderate	Low	High

Resign to

enter the insurance business, 81 percent of the executives knew about it, but only 11 percent transmitted this information to others.

Two other conclusions from this study are also worth noting. Information on events of general interest tended to flow between the major functional groups (production, sales) rather than within them. Also, no evidence surfaces to suggest that any one group consistently acted as liaisons: rather, different types of information passed through different liaison person

An attempt to replicate this study among employees in a small state government office also found that only 10 percent act as liaison individuals. This finding is interesting, because the replication contained a wider spectrum of employees, including operative as well as managerial personnel. But the flow of information in the government office took place within, rather than between, functional groups. It was proposed that this discrepancy might be due to comparing an executive-only sample against one that also included operative workers. Managers, for example, might feel greater pressure to stay informed and thus cultivate others outside their immediate functional group. Also,



in contrast to the findings of the original study, the replication found that a consistent group of individuals acted as liaisons by transmitting information in the government office.

Is the information that flows along the grapevine accurate? The evidence indicates that about 75 percent of what is carried is accurate. But what conditions foster an active grapevine? What gets the rumor mill rolling?

It's frequently assumed that rumors start because they make titillating gossip. This is rarely the case. Rumors emerge as a response to situations that are important to us, when there is ambiguity, and under conditions that arouse anxiety. The fact that work situations frequently contain these three elements explains why rumors flourish in organizations. The secrecy and competition that typically prevail in large organizations around issues such as the appointment of new bosses, the relocation of offices, downsizing decisions, and the realignment of work assignments create conditions that encourage and sustain rumors on the grapevine. A rumor will persist either until the wants and expectations creating the uncertainty underlying the rumor are fulfilled or until the anxiety is reduced.

What can we conclude from the preceding discussion? Certainly the grapevine is an important part of any group or organization communication network and is well worth understanding. It gives managers a feel for the morale of their organization, identifies issues that employees consider important, and helps tap into employee anxieties. It acts, therefore, as both a filter and a feedback mechanism, picking up the issues that employees consider relevant. For employees, the grapevine is particularly valuable for transiting formal communications into their group's own jargon. May be more important, again from a managerial perspective, it seems possible to analyze grapevine information and to predict its flow, given that only a small set of individuals (approximately 10 percent ) actively pass on information to more than one other person. By assessing which liaison individuals will consider a given piece of information to be relevant, we can improve our ability to explain and predict the pattern of the grapevine.

Can management entirely eliminate rumors? No. what management should do, however, is minimize the negative consequences of rumors by limiting their range and impact. Exhibit 11-5 offers a few suggestions for minimizing those negative consequences.

## Computer-Aided Communication

Communication in today's organizations is enhanced and enriched by computer-aided technologies. These include electronic mail, instant messaging, intranet and extranet links, and videoconferencing. Electronic mail, for instance, has dramatically reduced the number of memos, letters, and phone calls that employees historically used to communicate among themselves and with suppliers, customers, or other outside stakeholders.

Exhibit 11-5	Suggestions for Reducing the Negative Consequences of Rumors
<ol style="list-style-type: none"><li>1. Announce timetables for making important decisions.</li><li>2. Explain decisions and behaviors that may appear inconsistent or secretive.</li><li>3. Emphasize the downside, as well as the upside, of current decisions and future plans.</li><li>4. Openly discuss worse-case possibilities – it is almost never as anxiety-provoking as the unspoken fantasy.</li></ol>	

**E-Mail:** Electronic mail (or e-mail) uses the Internet to transmit and receive computer generated text and documents. Its growth has been spectacular. In fact, over 100 million adults in the United States use e-mail regularly (at least once a day) and it's estimated that nearly 1 trillion e-mails are sent daily world-wide. A good percentage (up to 70 percent – depending on the quality of one's spam filter) of this e-mail comes in the form of spam (unsolicited e-mail ads or other unwanted material) and phishing e-mails (Internet scams initiated with a spoof e-mail message). Nevertheless, the reason we put up with junk e-mail is because, for many of us e-mail is an indispensable way of communicating.

As a communication tool, e-mail has a long list of benefits. E-mail messages can be quickly written, edited, and stored. They can be distributed to one person or thousands with a click of a mouse. They can be read, in their

entirety, at the convenience of the recipient. And the cost of sending formal e-mail messages to employees is a fraction of what it would cost to print, duplicate, and distribute a comparable letter or brochure.

E-mail, of course, is not without its drawbacks. It can be distraction from work activities when employees use it for personal purposes.

Impersonal detracting from special attention to customers or coworkers. John Caudwell one of Great Britain's richest tycoons and CEO of Caudwell Group felt e-mail was so distracting that he banned all employees from using it at work commenting, "Management and staff at HQ and in the stores were beginning to show signs of being constrained by e-mail proliferation ... "although employees have had mixed reactions to the ban on e-mail, Caudwell claims that customer service has improved. We don't know however, whether Caudwell's claims about improved customer service due to eliminating e-mail are in fact true. A recent study, though, revealed that most e-mails from customers are ignored. In this study, the researchers posed as customers used e-mail to inquire about purchasing a product or service from 147 retail companies in various industries. In 51 percent of the cases, a reply to the e-mail was never received. Perhaps e-mail does hurt customer service, as Caudwell claims.

E-mails also lack emotional content. The nonverbal cues in a face-to-face message or the tone of voice from a phone call convey important information that doesn't come across in e-mail additionally e-mails tend to be cold and impersonal. As such, they're not the ideal means to convey information like layoffs, plant closings, or other messages that might evoke emotional responses and require empathy or social support. Finally, the remote nature of e-mail fuels " conflict spirals" that have been found to escalate ill feelings at double the rate of face-to-face communiqués. Many people seem to be able to say things in e-mails that they would never say to someone face-to-face.

**Instant Messaging:** it's not just for teenagers anymore. Instant messaging (IM), which has been popular among teens for more than a decade, is now rapidly moving into business.

Instant messaging is essentially real-time e-mail. Employees create a list of colleagues and friends with whom they want to communicate. Then they just click on a name displayed in a small box on their computer screen, type in a message, and the message instantaneously pops up onto the recipient's screen. Increasingly, people are using handheld IM devices, such as cell phones, palm pilots, or Blackberries. The growth of IM has been spectacular. In 2001, for instance, just 8 percent of American employees were using it. In 2003, it was up to 18 percent. And experts estimate that by 2006, more people will be using IM than e-mail as their primary communication tool at work.

IM is a fast and inexpensive means for managers to stay in touch with employees and for employees to stay in touch with each other. For instance, furniture retailer Jennifer Convertibles uses IM to communicate with managers in its 200 plus stores nationwide. Jeff Wenger, vice president at tax preparation and software company Tax Technologies Inc. uses IM to manage a team of software developers and testers who are scattered all over the United States. Wenger says IM has cut his daily telephone time from 3 hours to less than 30 minute. IM isn't going to replace e-mails. E-mail is still probably a better device for conveying long messages that need to be saved. IM is preferred for sending one or two-line messages that would just clutter up an e-mail inbox. On the downside, some IM users find the technology intrusive and distracting. IM's continual online presence can make it hard for employees to concentrate and stay focused. Managers also indicate concern that IM will be used by employees to chat with friend and colleagues about network issues. Finally, because instant messages are easily broken into, many organizations are concerned about IM security.

**Intranet and Extranet Links:** *Intranets* are private, organization-wide information networks that look and act like a Web site but to which only people in an organization have access. Intranets are rapidly becoming a popular means for employees within companies to communicate with each other. IBM, as a case in point recently brought together 52,000 of its employees online for what it called Worldjam. Using the company's intranet, IBMers everywhere swapped ideas on everything from how to retain employees to how to work faster without undermining quality.

The latest development in intranets is using high-speed wireless internet access (Wi-Fi) for telephone calls within an organization. This voice over Wi Fi allows employees to make and receive phone calls on the same wireless broadband network that an organization uses for internet access. BJ's Wholesale Club, for instance, is using

voice over Wi-Fi to make it easier for employees and managers to talk with each other as well as customers and suppliers. With stores that average more than 100,000 square feet, voice over Wi-Fi makes BJ's employees readily accessible regardless of where they are in a store.

In addition, organizations are creating extranet links that connect internal employees with selected suppliers, customers, and strategic partners. For instance, an extranet allows GM employees to send electronic messages and documents to its steel and rubber suppliers as well as to communicate with its dealers. Similarly, all Wal-Mart vendors are linked into its extranet system, allowing Wal-Mart buyers to easily communicate with its suppliers and for suppliers to monitor the inventory status of its products at Wal-Mart stores.

**Videoconferencing:** *Videoconferencing* is an extension of intranet or extranet systems. It permits employees in an organization to have meetings with people at different locations. Live audio and video images of members allow them to see, hear, and talk with each other. Videoconferencing technology, in effect, allows employees to conduct interactive meetings without the necessity of all being physically in the same location.

In the late 1990s videoconferencing was basically conducted from special rooms equipped with television cameras, located at company facilities. More recently, cameras and microphones are being attached to individual computers, allowing people to participate in videoconferences without leaving their desks. As the cost of this technology drops in price, videoconferencing is likely to be increasingly seen as an alternative to expensive and time-consuming travel.

## JOB THE NEWS

### Internet Gripe Sites: A Challenge for Management?

Internet gripe sites are the new electronic grapevines. Employees and ex-employees at hundreds of companies – including JP Morgan Chase, Microsoft, BankAmerica, The Limited, Merck, MTV Networks, and Goldman Sachs—are using computer-aided communication to vent their anger and frustration by posting uncensored messages at VaultReports.com Electronic Water-Cooler.

So a downside to electronic communications is that Internet gripe sites allow employees a unilateral (and often anonymous) platform to air their grievances. For instance, an analysis of messages found that they cover the entire gamut of organizational life, including organizational policies, pay worries, internal morale, and hiring practices. Although some comments address the benefits for working at a particular organization, most are complaints.

What makes these sites particularly frustrating to management is that there are no checks-and-balances to ensure that grievances expressed on these sites are accurate. Here is a situation where the adage that “a few bad apples can spoil the barrel” seems entirely appropriate. A few disgruntled employees can go a long way in undermining an entire workforce's morale. And because these sites are accessible to the public, they can also tarnish an organization's image.

Some organizations are turning a negative into a positive by monitoring their gripe sites to instantly uncover “hot-button” issues among employees, the mood of the workforce, and the perception of internal justice procedures – then using this information to identify areas where they need to improve. Still, most employers undoubtedly see these gripe sites as a downside of the Internet age.

Source: Based on “Internet Grips Sites a Tool for Management,” [www.uninews.unimelb.edu/au](http://www.uninews.unimelb.edu/au), March 19, 2003; and C.J. Moebius, “I Can That!” Inside the World of Employee Complaint Sites,” [www.bordercross.com](http://www.bordercross.com)

**Summary:** Computer-aided communications are reshaping the way we communicate in organizations. Specifically, it's no longer necessary for employees to be at their work station or desk to be “available” Pagers, cellular phones personal communicators, and phone messaging allow employees to be reached when they're in a meeting, during a lunch break, while visiting a customer across town, or during a golf game on Saturday morning. The line between an employee's work and network life is no longer distinct. In the electronic age, all employees can theoretically be on call 24 hours a day, 7 days 2 week.

Organizational boundaries become less relevant as a result of computer aided communications. Networked computers allow employees to jump vertical levels within the organization, work full-time at home or someplace other than an organizationally operated facility, and conduct ongoing communication with people in other organizations. The market researcher who wants to discuss an issue with the vice president of marketing (who is three levels up in the hierarchy) can bypass the people in between and send an e-mail message directly. And in so doing, the traditional status hierarchy, largely determined by level and access, becomes essentially negated. Or that same market researcher may choose to live in the Cayman Islands and work at home via telecommuting rather than do the job in the company's Chicago Office. And when an employee's computer is linked to suppliers' and customers' computers, the boundaries separating organizations become further blurred. As a case in point, because Levi Strauss's and Wal-Mart's computers are linked Levi is able to monitor Waymart's inventory of its jeans and to replace merchandise as needed, clouding the distinction between Levi and Wal-Mart employees.

## Knowledge Management

Our final topic under organizational communication is **knowledge management (KM)**. This is a process of organizing and distributing an organization's collective wisdom so the right information gets to the right people at the right time. When done properly, KM provides an organization with both a competitive edge and improved organizational performance because it makes its employees smarter.

Siemens, the global telecommunications giant, recently won a \$460,000 contract to build a telecommunications network for two hospitals in Switzerland in spite of the fact that its bid was 30 percent higher than the competition's. The secret to Siemens's success was its knowledge-management system. This system allowed Siemens's people in the Netherlands to draw on their experience and provide the Swiss sales reps with technical data that proved that the Siemens's network would be substantially more reliable than the competition's.

Siemens is one of a growing number of companies including Cisco systems, Ford, British Telecom, Johnson & Johnson, IBM, Whirlpool, Intel, Volkswagen, Chevron Texaco, and Royal Bank of Canada that have realized the value of knowledge management. In fact, a recent survey found that 81 percent of the leading organizations in Europe and the United States say they have or are at least considering adopting, some kind of KM system.

Knowledge management is increasingly important today for at least three reasons. First, in many organizations, intellectual assets are now as important as physical or financial assets. Organizations that can quickly and efficiently tap into their employees' collective experience and wisdom are more likely to outsmart their competition. Second, as baby boomers begin to leave the work force, there's an increasing awareness that they represent a wealth of knowledge that will be lost if there are no attempts to capture it. And third, a well-designed KM system will reduce redundancy and make the organization more efficient. For instance, when employees in a large organization undertake a new project, they needn't start from scratch. A knowledge-management system can allow them to access what previous employees have learned and cut wasteful time retracing a path that has already been traveled.

How does an organization record the knowledge and expertise of its employees and make that information easily accessible? It needs to develop computer databases of pertinent information that employees can readily access; it needs to create a culture that supports and rewards sharing; and it has to develop mechanisms that allow employees who have developed valuable expertise and insights to share them with others.

KM begins by identifying what knowledge matters to the organization. Management needs to review processes to identify those that provide the most value. Then it can develop computer networks and databases that can make that information readily available to the people who need it the most. But KM won't work unless the culture supports sharing of information. Information that is important and scarce can be a potent source of power. And people who hold that power are often reluctant to share it with others so KM requires an organizational culture that promotes, values, and rewards sharing knowledge finally. KM must provide the mechanisms and the motivation for employees to share knowledge that employees find useful on the job and enables them to achieve better performance. More knowledge isn't necessarily better knowledge. Information overload needs to be avoided by

designing the system to capture only pertinent information and then organizing it so it can be quickly accessed by the people whom it can help. Royal Bank of Canada, for instance, has created a KM system with customized e-mail distribution lists carefully broken down by employees' specialty, title, and area of interest; set aside a dedicated site on the company's intranet that serves as a central information repository; and created separate in-house Web sites featuring "lessons learned" summaries, where employees with various expertise can share new information with others.

## Choice of Communication Channel

Neal L. Patterson, CEO at medical-software maker Cerner Corp., likes e-mail. Maybe too much so. Upset with his staff's work ethic, he recently sent a seething e-mail to his firm's 400 managers. Here are some of that e-mail's highlights:

"Hell will freeze over before this CEO implements ANOTHER EMPLOYEES are doing or you do not CARE... You have a problem and you will fix it or I will replace you... What you are doing as managers, with this company makes me SICK"

Patterson's e-mail additionally suggested that manager schedule meetings at 7 a.m., 6 a.m., and Saturday mornings; promised a staff reduction of 5 percent and institution of a time-clock system; and Patterson's intention to charge unapproved absences to employees vacation time.

Within hours of this e-mail, copies of it had made its way onto a Yahoo! Web site. And within 3 days, Cerner's stock price had plummeted 22 percent. Although one can argue about whether such bare criticism should be communicated at all, one thing is certainly clear: Patterson erred by selecting wrong channel for his message. Such an emotional and sensitive message would likely have been better received in a face-to-face meeting.

Why do people choose one channel of communication over another—for instance, a phone call instead of a face-to-face talk? Is there any general insight we might be able to provide regarding choice of communication channel? The answer to the latter question is a qualified "Yes." A model of media richness has been developed to explain channel selection among managers.

Research has found that channels differ in their capacity to convey information. Some are rich in that they have the ability to (1) handle multiple cues simultaneously, (2) facilitate rapid feedback, and (3) be very personal. Others are lean in that they score low on these three factors. As Exhibit 11-6 illustrates, face-to-face conversation scores highest in terms of channel richness because it is a communication episode. That is, it offers multiple information cues (words, postures, facial expressions, gestures, intonations), immediate feedback (both verbal and nonverbal), and the personal touch of "being there." Impersonal written media such as formal reports and bulletins rate lowest in richness.

The choice of one channel over another depends on whether the message is routine or nonroutine. The former types of message tend to be straightforward and have a minimum of ambiguity. The latter are likely to be complicated and have the potential for misunderstanding. Managers can communicate routine messages efficiently through channels that are lower in richness. However, they can communicate nonroutine messages effectively only by selecting rich channels. Referring back to the Cerner Corp. example, it appears that Neal conveyed a message that, because of its nonroutine nature and complexity, should have been conveyed using a rich communication medium.

Evidence indicates that high-performing managers tend to be more media sensitive than low-performing managers. That is, they're better able to match appropriate media richness with the ambiguity involved in the communication.

The media richness model is consistent with organizational trends and practices during the past decade. It is not just coincidence that more and more senior managers have been using meetings to facilitate communication and regularly leaving the isolated sanctuary of their executive offices to managers by walking around. These executives are relying on richer channels of communication to transmit the more ambiguous messages they need to convey. The past decade has been characterized by organizations closing facilities, imposing large layoffs, restructuring,

merging, consolidating, and introducing new products and services at an accelerated pace- all nonroutine messages high in ambiguity and requiring the use of channels that can convey a large amount of information. It is not surprising therefore, to see the most effective managers expanding their use of rich channels.

## **Barriers to Effective Communication**

A numbers of barriers can retard or distort effective communication. In this section, we highlight the more important of these barriers.

### **Filtering**

**Filtering** refers to a sender's purposely manipulating information so it will be seen more favorably by the receiver. For example, when a manager tells his boss what he feels his boss wants to hear, he is filtering information.

The major determinant of filtering is the number of levels in an organization's structure. The more vertical levels in the organization's structure. The more vertical levels in the organization's heresy, the more opportunities there are for filtering. But you can expect some filtering to occur wherever there are status differences. Factors such as fear of conveying bad news and the desire to please one's boss often lead employees to tell their superiors what they think those superiors want to hear, thus distorting upward communications.

### **Selective Perception**

We have mentioned selective perception before in this book. It appears again here because the receivers in the communication process selectively see and ear based on their needs, motivations, experience, background, and other personal carateristic. Receivers also project their interests and expectations into communications as they decode them. The employment interviewers who expects a female job applicant to put her family ahead of her career is likely to see that in female applicant feel that way or not. As we said earlier we don't see reality, we interpret what we see and call it reality.

### **Information Overload**

Individuals have a finite capacity for processing data. When the information we have to work with exceeds our processing capacity, the result is information overload is high.

What happens when individuals have more information than they can sort out and use? They tend to select out, ignore, pass over. Or forget information. Or they may put off further processing until the overload situation is over. Regardless, the result is lost information and less effective communication.

### **Emotions**

How the receiver feels at the time of receipt of a communication will influence how he or she interprets it. The same message received when you're angry or distraught is often interpreted differently from when you're happy. Extreme emotions such as jubilation or depression are most likely to hinder effective and objective thinking processes and substitute emotional judgments.

### **Language**

Words mean different things to different people. Age, education, and cultural background are three of the more obvious variables that influence the language a person uses and the definitions e or she gives to words.

In an organization, employees usually come from diverse backgrounds. Further, the grouping of employees into departments creates specialists who develop their own "buzzwords," or technical jargon. In large organizations, members are also frequently widely dispersed geographically-even operating in different countries- and individuals

in each locale will use terms and phrases that are unique to their area. The existence of vertical levels can also cause language problems. For instance, differences in meaning with regard to words such as incentives and quotas have been found at different levels in management. Top managers often speak about the need for *incentives* and *quotas* yet these terms imply manipulation and create resentment among many lower managers.

The point is that although you and I probably speak a common language- English- our use of that language is far from uniform. If we knew how each of us modified the language, communication difficulties would be minimized. The problem is that members in an organization usually don't know how those with whom they interact have modified the language. Senders tend to assume that the word and terms they use mean the same to the receiver as they do to them. This assumption is often incorrect.

## Communication Apprehension

Another major barrier to effective communication is that some people- an estimated 5 to 20 percent of the population- suffer from debilitating **communication apprehension** or anxiety. Although lots of people dread speaking in front of a group, communication apprehension is a more serious problem because it affects a whole category of communication techniques. People who suffer from it experience undue tension and anxiety in oral communication, written communication, or both. For example, oral apprehensive may find it extremely difficult to talk with others face-to-face or become extremely anxious when they have to use the telephone. As a result, they may rely on memos or faxes to convey messages when a phone call would be not only faster but more appropriate.

### Myth or Science?

#### “People Are Good at Catching Liars at Work”

This statement is essentially false. The core purpose of communication in the workplace may be to convey business-related information. However, the workplace also is a place where we communicate in order to manage impressions others form of us. Some of this impression management is unintentional and harmless (for example, complimenting your boss on his clothing). However, sometimes people manage impressions through outright lies, like making up an excuse for missing work and failing to make a deadline.

One of the reasons that people lie, in the workplace and otherwise, is that it's hard to catch. Although most of us think we're good at detecting a lie, research shows that most people perform no better than chance at detecting whether someone is lying or telling the truth.

Lying is also hard to prove. For example, research shows that negotiators often lie during negotiations. A seller may claim to have another buyer waiting in the wings when in fact no such buyer is out there. Research shows that this “cheap talk” can be an effective tactic in negotiation.

Consider Richard Scrushy, former CEO of HealthSouth, who was acquitted on 36 charges of false reporting, conspiracy, fraud, and money laundering, even though 15 people who worked for Scrushy told the jury that he lied about HealthSouth's performance). Clearly, it was hard for the jury to separate out who was telling the truth. In some cases, we may never know the truth.

The point? Don't believe everything you hear, and don't place too much weight on your ability to catch a liar based just on your intuition. When someone makes a claim that's reasonable to doubt, ask her to back it up with evidence.

Sources: N.I. Etcoff, P. Ekman, J.J. Magee, and N.G. Franks, “Lie Detection and Language Comprehension,” *Nature*, May 2000 14, p.139; R. Croson, T. Boles and J.K. Murnighan, “Cheap Talk in Bargaining Experiments: Lying and Threats in Ultimatum Games,” *Journal of Economic Behavior & Organization* 51 (2003), pp.143-59; “Cases of Scrushy's Aides Still Pending,” *The Los Angeles Times*, July 5, 2005, [www.latimes.com](http://www.latimes.com).

Studies demonstrate that oral-communication apprehensive avoid situations that require them to engage in oral communication. We should expect to find some self-selection in jobs so that such individuals don't take

positions, such as teacher, for which oral communication is a dominant requirement. But almost all jobs require some oral communication. And of greater concern is the evidence that high-oral-communication apprehensive distort the communication demands of their jobs in order to minimize the need for communication. So we need to be aware that there is a set of people in organizations who severely limit their oral communication and rationalize this practice by telling themselves that more communication isn't necessary for them to do their job effectively.

## **Current Issues in Communication**

In this section, we discuss four current issues related to communication in organizations. Why do men and women often have difficulty communicating with each other? What role does silence play in communication? What are the implications of the "politically correct" movement on communications in organizations? And how can individuals improve their cross-cultural communications?

### **Communication Barriers between Women and Men**

The classic studies by Deborah Tannen provide us with some important insights into the differences between men and women in terms of their conversational styles. In particular, Tannen has been able to explain why gender often creates oral communication barriers. The essence of Tannen's research is that men use talk to emphasize status, whereas women use it to create connection. Her conclusion, of course, doesn't apply to every man or every woman. As she puts, her generalization means "a larger percentage of women or men as a group talk in a particular way, or individual women and men are more likely to talk one way or the other."

Tannen states that communication is a continual balancing act juggling the conflicting needs for intimacy and independence. Intimacy emphasizes closeness and commonalities. Independence emphasizes separateness and differences. But here's the kick. Women speak and hear a language of connection and intimacy; men speak and hear a language of status power, and independence. So, for many men, conversations are primarily a means to preserve independence and maintain status in a hierarchical social order. For many women, conversations are negotiations for closeness in which people try to seek and give confirmation and support. A few examples will illustrate Tannen's thesis.

Men frequently complain that women talk on and on about their problems. Women criticize men for not listening. What's happening is that when men hear a problem, they frequently assert their desire for independence and control by offering solutions. Many women, on the other hand, view telling a problem as a means to promote closeness. The women present the problem to gain support and connection, not to get the man's advice. Mutual understanding is symmetrical. But giving advice is asymmetrical- it sets up the advice giver as more knowledgeable, more reasonable, and more in control. This contributes to distancing men and women in their efforts to communicate.

Men are often more direct than women in conversation. A man might say, "I think you're wrong on that point." A woman might say, "Have you looked at the marketing department's research report on that point?" (The implication being that the report will show the error). Men frequently see female indirectness as "covert" or "sneaky" but women are not as concerned as men with the status and one-upmanship that directness often creates.

Women tend to be less boastful than men. They often downplay their authority or accomplishments to avoid appearing as braggarts and to take the other person's feelings into account. However, men can frequently misinterpret this and incorrectly conclude that a woman is less confident and competent than she really is.

Finally, men often criticize women for seeming to apologize all the time. Women do apologize more than men. Men tend to see the phrase "I'm sorry" as a weakness because they interpret the phrase to mean the woman is accepting blame. The problem is that women frequently use "I'm sorry" to express regret and restore balance to a conversation: "I know you must be of understanding and caring about the other person's feelings rather than an apology."

### **Silence as Communication**



Sherlock Holmes once solved a murder mystery based not on what happened but on what didn't happen. Holmes remarked to his assistant, Dr. Watson, about "the curious incident of the dog in the nighttime." To which Holmes replied, "That was the curious incident." Holmes concluded the crime had to be committed by someone with whom the dog was familiar because the watchdog didn't bark.

The dog that didn't bark in the night is often used as a metaphor for an event that is significant by reason of its absence. That story is also an excellent illustration of the importance of silence in communication. Silence—defined here as an absence of speech or noise—has been generally ignored as a form of communication in OB because it represents inaction or non behavior. But it's not necessarily inaction. Nor is silence, as many believe, a failure to communicate. It can, in fact, be a powerful form of communication. It can mean someone is thinking or contemplating a response to a question. It can mean a person is anxious and fearful of speaking. It can signal agreement, dissent, frustration, or anger.

In term of OB, we can see several links between silence and work-related behavior. For instance, silence is a critical element of groupthink, in which it dissatisfaction, as when they "suffer in silence." It can be a sign that someone is upset as when a typically talkative person suddenly says nothing—"What's the matter with him? Is he all right?" It's a powerful tool used by managers to signal course, it's a crucial element of group decision making, allowing individuals to think over and contemplate what others have said.

Failing to pay close attention to the silent portion of a conversation can result in missing a vital part of the message. Astute communicators watch for gaps, pauses, and estimations. They hear and interpret silence. They treat pauses, for instance, as analogous to a flashing yellow light at an intersection how to frame an answer? Is the person suffering from communication apprehension? Sometimes the real message in a communication is buried in the silence.

### **"Politically Correct" Communication**

What words do you use to describe a colleague who is wheelchair-bound? What terms do you use in addressing a female customer? How do you communicate with a brand-new client who is not like you? Your answer can mean the difference between losing a client, an employee, a lawsuit, a harassment claim, or a job.

Most of us are acutely aware of how our vocabulary has been modified to reflect political correctness. For instance, most of us have cleansed the words handicapped, blind, and elderly from our vocabulary— and replaced them with terms like physically challenged, visually impaired and senior. The Los Angeles Times, for instance, allows its journalists to use the term old age but cautions that the onset of old age varies from "person to person" so group of 75-years-olds aren't necessarily all old.

We must be sensitive to others feelings. Certain words can and do stereotype, intimidate, and insult individuals. In an increasingly diverse workforce, we must be sensitive to how words might offend others. But there's a downside to political correctness. It can complicate our vocabulary, making it more difficult for people to communicate. To illustrate, you probably know what these three terms mean: garbage, quotas, and women. But each of these words also had been found to offend one or more groups. They've been replaced with terms like post consumer waste material, educational equity, and *people of gender*. The problem is that this latter group of terms is much less likely to convey a uniform message than the words they replaced.

## Exhibit 11-7

### THE FAR SIDE® By GARY LARSON



"Well, actually, Doreen, I rather resent being called a 'swamp thing.' ... I prefer the term 'wetlands-challenged-mutant.'"

The Far Side® by Gary Larson © 1994 Far Works, Inc. All Rights Reserved. Used with permission.

Source: The Far Side by Gary Larson © 1994 Far Works, Inc. All rights reserved. Used with permission.

Words are the primary means by which people communicate. When we eliminate words from use because they're politically incorrect, we reduce our options for conveying messages in the clearest and most accurate form. For the most part, the larger the vocabulary, we make it harder to communicate accurately. When we further replace these words with new terms whose meanings are less well understood, we have reduced the likelihood that our messages will be received as we ad intended them.

We must be sensitive to how our choice of words might offend others. But we also have to be careful not to sanitize our language to the point at which it clearly restricts clarity of communication. There is no simply solution to this dilemma. However, you should be aware of the trade-offs and the need to find a proper balance.

## Cross-Cultural Communication

Effective communication is difficult under the best of conditions. Cross-cultural factor clearly create the potential for increased communication problems. This is illustrated in Exhibit 11-8. A gesture that is well understood and acceptable in one culture can be meaningless or lewd in another.

**Exhibit 11-8****Hand Gestures Mean Different Things in Different Countries****The A-OK Sign**

In the United States, this is just a friendly sign for "All right!" or "Good going." In Australia and Islamic countries, it is equivalent to what generations of high school students know as "flipping the bird."

**The "Hook'em Horns" Sign**

This sign encourages University of Texas athletes, and it's a good luck gesture in Brazil and Venezuela. In parts of Africa it is a curse. In Italy, it is signaling to another that "your spouse is being unfaithful."

**"V" for Victory Sign**

In many parts of the world, this means "victory" or "peace." In England, if the palm and fingers face inward, it means "Up yours!" especially if executed with an upward jerk of the fingers.

**Finger-Beckoning Sign**

This sign means "come here" in the United States. In Malaysia, it is used only for calling animals. In Indonesia and Australia, it is used for beckoning "ladies of the night."

Source: "What's A-O-K in the U.S.A. Is Lewd and Worthless Beyond," New York Times, August 18, 1996, p.E7. From Roger E. Axtell, *GESTURES: The Do's and Taboos of Body Language Around the World*. Copyright©1991. This material is used by permission of John Wiley & Sons, Inc.

**Cultural Barriers** One author had identified four specific problems related to language difficulties in cross-cultural communications.

First, there are barriers caused by semantics. As we've noted previously, words mean different things to different people. This is particularly true for people from different national cultures. Some words, for instance, don't translate between cultures. Understanding the word *sisu* will help you in communicating with people from Finland, but this word is untranslatable into English. It means something akin to "guts" or "dogged persistence." Similarly, the new capitalists in Russia may have difficulty communicating with their British or Canadian counterparts because English terms such as *efficiency*, *free market*, and *regulation* are not directly translatable into Russian.

Second there are *barriers caused by word connections*. Words imply different things in different languages. Negotiations between Americans and Japanese executives, for instance, are made more difficult because the Japanese word *hai* translates as "yes," but its connotation may be "yes I'm listening," rather than "yes, I agree."

Third are barriers caused by tone difference? In some cultures, language is formal in others it's informal. In some cultures. The tone changes depending on the context: people speak differently at home. In social situations, and at work. Using a personal, informal style in a situation in which a more formal style is expected can be embarrassing and off-putting.

Fourth, there are barriers caused by differences among perceptions. People who speak different languages actually view the world in different ways Eskimos perceive snow differently because they have many words for it. Thais perceive "no" differently than do Americans because the former have no such word in their vocabulary.

**Cultural Context:** A better understanding of these cultural barriers and their implications for communicating across cultures can be achieved by considering the concepts of high and low-context cultures.

Cultures tend to differ in the importance to which context influences the meaning that individuals take from what is actually said or written in light of who the other person is. Countries like China, Korea, Japan, and Vietnam are **high-context cultures**. They rely heavily on nonverbal and subtle situational cues when communication with others. What is not said may be more significant than what is said. A person's official status, place in society, and reputation carry considerable weight in communications. In contrast, people from Europe and North America reflect their **low-context cultures**. They rely essentially on words to convey meaning. Body language or formal titles are secondary to spoken and written words

What do these contextual differences mean in terms of communications? Actually, quite a lot. Communication in high context cultures implies considerably more trust by both parties. What may appear, to an outsider, as casual and insignificant conversation is important because it reflects the desire to build a relationship and create trust. Oral agreements imply strong commitments in high context cultures. And who you are - your age, seniority, rank in the organization is highly valued and heavily influences your credibility. But in low context cultures, enforceable contracts will tend to be in writing, precisely worded, and highly legalistic. Similarly, Low-context cultures value directness. Managers are expected to be explicit and precise in conveying intended meaning. It's quite different in high-context cultures, in which managers tend to "make suggestions" rather than give orders.

**A Cultural Guide:** When communicating with people from a different culture, what can you do to reduce misperceptions, misinterpretations, and misvaluations? You can begin by trying to assess the cultural context; you're likely to have fewer difficulties if people come from a similar cultural context to you. In addition, the following four rules can be helpful.

1. *Assume differences until similarity is proven.* Most of us assume that others are more similar to us than they actually are. But people from different countries often are very different from us. So you are far less likely to make an error if you assume others are different from you rather than assuming similarity until difference is proven.
2. *Emphasize description rather than interpretation or evaluation.* Interpreting or evaluating what someone has said or done, in contrast to description, is based more on the observer's culture and background than on the observed situation. As a result, delay judgments until you've had sufficient time to observe and interpret the situation from the differing perspectives of all the cultures involved.
3. *Practice empathy.* Before sending a message, put you in the recipient's shoes. What are his or her values? Experiences and frames of reference? What do you know about his or her education upbringing, and background that can give you added insight? Try to see the other person as he or she really is.

## Myth or Science?

### "Are East Asians More Responsive to Indirect Communication?"

This statement is mostly true. Because people from East Asia (for example, Japan, China, Korea) place a high value on interpersonal harmony, they tend to communicate less directly than Americans. For example, assume you are responsible for creating a marketing plan. An Asian colleague might respond to your proposal with, "The strategic rationale underlying your marketing plan needs some tightening, and the writing can be rough in places, but otherwise you have some very interesting ideas." It is possible that she is telling you, in an indirect way, that your proposal is of limited value. Americans, however, are more direct in their communications. So an American colleague may respond with, "This marketing plan is way off base. It seems like it was thrown together at the last minute. Please get me a vision by the end of the day today."

What explains these different communication techniques? In the workplace, Americans are generally guided by norms of short-term task accomplishment, and so they believe communication should be designed to get the job at hand done as quickly and as effectively as possible. East Asians, however, are more likely to communicate indirectly due to their desire to foster long-term relationships that are polite and respectful.

So how can managers reduce miscommunication between the two cultures? Americans need to be

sensitive to the fact that seemingly “soft” statements from East Asians may contain stronger messages. East Asians are generally not personal or intended as a threat to their status or position.

4. *Treat your interpretations as a working hypothesis.* Once you’ve developed an explanation for a new situation or think you empathize with someone from a foreign culture, treat your interpretation as a hypothesis that needs further testing rather than as a certainty. Carefully assess the feedback provided by recipients to see if it confirms your hypothesis. For important decisions or communiqués, you can also check with other foreign and home-country colleagues to make sure that your interpretations are on target.

In this chapter, you have learned a lot about how communication plays out in the workplace. Possessing good listening skills is also critical to effective communication. See the self-Assessment feature below, which will provide you with some insights into your listening skills.

## Summary and Implications for Managers

A careful review of this chapter finds a common theme regarding the relationship between communication and employee satisfaction: the less the uncertainty, the greater the satisfaction. Distortions, ambiguities, and incongruities in communications all increase uncertainty and, hence, they have a negative impact on satisfaction.

The less distortion that occurs in communication, the more that goals, feed back and other management messages to employees will be received as they were intended. This, in turn, should reduce ambiguities and clarify the group’s task. Extensive use of vertical, lateral, and informal channels will increase communication flow, reduce uncertainty, and improve group performance and satisfaction. We should also expect incongruities between verbal and nonverbal communiqués to increase uncertainty and to reduce satisfaction.

Findings in the chapter further suggest that the goal of perfect communication is unattainable. Yet, there is evidence that demonstrates a positive relationship between effective communication (which includes factors such as perceived trust, perceived accuracy, and desire for interaction, top-management receptiveness, and upward information requirements) and worker productivity. Choosing the correct channel, being an effective listener, and using feedback may, therefore, make for more effective communication. But the human factor generates distortions that can never be fully eliminated. The communication process represents an exchange of messages, but the outcome is meanings that may or may not approximate those that the sender intended. Whatever the sender’s expectations, the decoded message in the mind of the receiver represents his or her reality. And it is this “reality” that will determine performance, along with the individual’s level of motivation and degree of satisfaction. The issue of motivation is critical, so we should briefly review how communication is central in determining an individual’s degree of motivation.

A final implication from the communication literature relates to predicting turnover. The use of realistic job previews acts as a communication device for clarifying role expectations. Employees who have been exposed to a realistic job preview have more accurate information about that job. Comparisons of turnover rates between organizations that use the realistic job preview versus either no preview or presentation of only positive job information show that those not using the realistic preview have, on average, almost 29 percent higher turnover. This makes a strong case for managers to convey honest and accurate information about a job to applicants during the recruiting and selection process.

## **Conflict and Negotiation**

After studying this chapter, you should be able to:

- |   |  |
|---|--|
| 1 Define conflict   | 5 Describe the conflicts handling intentions         |
| 2 Differentiate between the traditional, human, relations, and interactionist views of conflict | 6 Contrast distributive and integrative bargaining   |
| 3 Contrast task, relationship, and process conflict   | 7 Identify the five steps in the negotiation process |
| 4 Outline the conflict process  | 8 Describe cultural differences in negotiations      |

## Conflict at Disney

Through the leadership of Micheal Eisne, Frank Wells, Jettrey Katzenberg, and Roy Disney, the money Company became a power a Wall Street favorite, but as you conflict at Disney caused much turn the company and its executives. In 1995, Eisner – Disney’s CEO – said that he was hiring his long-end and one of the world’s most celebrity agents, Michael Ovitz powerful celebrity agents, Michael Ovitz into Ovitz on left, Eisner on right, to the company’s new president. Their families often enjoyed the holidays together in Aspen. In Jave Ovitz a note that concluded we are going to be a great team ... May. I am thankful we are together. Vacant 14 months later, Eisner fired renting him out of Disney so bad per paid him 9140 million to leave. Result, Disney shareholders sued, that Eisner had breached his trust. In October 2004, the law suit that, forcing Eisner and Ovitz details about their partnership Seeds of the conflict between them were sown from the beginning. Accepted the position as Disney without knowing his formal authority. At one point, he told ‘I’m putting myself in your hands. Problem? Even in the midst of hiring Ovitz, Eisner routinely backed those who he knew were hostel to Ovitz’s hiring. In fact, the day before Ovitz’s hiring was announced, two of Disney’s senior executives told Ovitz that they would not work for him because of his relative lack of experience. One said, “Welcome to the company. I just want you to know that I’ll never work for you.” Eisner sat silent. Privately, Ovitz asked Eisner to back him. “I can’t do that,” Eisner responded.

Eisner and Ovitz also had conflicting styles. Ovitz liked glitz and glamour. Shortly after starting work at Disney. Ovitz hosted a party where Tom Hanks, Steven Spielberg, and other celebrities were guest. The party cost Disney \$90,000, which Ovitz considered a bargain. Eisner considered it lavish, Ovitz also had a habit of canceling meetings at the last minute, which was common for Hollywood agents but offended many Disney. At the trial, Eisner admitted wanting to fire Ovitz only 5 weeks after hired him. According to one Eisner associates, the only reason he didn’t was the belief that Ovitz would commit suicide. But, a few months later, Eisner was actively trying to remove Ovitz. He wrote to two Disney board members, “I hate saying this but his strength of personality together with his erratic behavior and pathological problems (and I hate saying that) is a mixture leading to disaster for this company. “The following week, Eisner sent a Disney executive to fire Ovitz, only to write Ovitz, “I am committed to making this a win-win situation, to keep out friendship intact, to be positive... You still are the only one who came to my hospital bed (when Eisner had emergency heart surgery)... and do remember.”

The career of a person once described as Hollywood’s most powerful was in ashes. At one point, David Geffen, a successful record executive and producer, said to Ovitz, “This isn’t the old you. You could close anything. You could get it done. Now you have no credibility. “Meanwhile, Eisner never really recovered from the Ovitz incident. In 2005, 45 percent of Disney shareholders gave Eisner a “no-confidence” vote. Although Disney won the suit filed over Ovitz’s \$140 million severance package in late 2005, Eisner stepped down as Chairman, and resigned from the board of directors, severing all ties with the company he had led for more than two decades. As one observer out as friendship ended in a hiring and lawsuit, with both men’s careers irreparably damaged. This situation at Disney shows us how conflict can destroy careers and harm companies.



As we see in the Disney example, conflict can be as serious problem in an organization. It can create chaotic conditions that make it nearly impossible for employees to work together. However, conflict also has a less-well-known positive side. We'll explain the difference between negative and positive conflicts in this chapter and provide a guide to help you understand how conflicts develop. We'll also present a topic closely akin to conflict –negotiation. But first, let's clarify what we mean by conflict.

## **A Definition of Conflict**

There has been no shortage of definitions of conflict? Despite the divergent meanings the term has acquired, several common themes underlie most definitions. Conflict must be perceived by the parties to it; whether or not conflict exists is a perception issue. If no one is aware of a conflict, then it is generally agreed that no conflict exists. Additional commonalities in the definitions are opposition or incompatibility and some form of interaction. These factors set the conditions that determine the beginning point of the conflict process.

We can define conflict, as a process that begins when one party perceives that another party has negatively affected, or is about to negatively affects, something that the first party cares about. This definition is purposely broad. It describes that point in any ongoing activity when an interaction “crosses over” to become an interparty conflict. It encompasses the wide range of conflicts that people experience in organizations – incompatibility of goals, differences over interpretations of facts, disagreements based on behavioral expectations, and the like. Finally, our definition is flexible enough to cover the full range of conflict levels – from overt and violent acts to subtle forms of disagreement.

### **Transitions in conflict Thought**

It is entirely appropriate to say that there has been “conflict” over the role of conflict in groups and organizations. One school of thought has argued that conflict must be avoided – that it indicates a malfunctioning within the group. We call this the *traditional* view. Another school of thought, the human *relations* view, argues that conflict is a natural and inevitable outcome in any group and that it need not be evil, but rather has the potential to be a positive force in determining group performance. The third, and most recent, perspective proposes not only that conflict can be a positive force in a group but explicitly argues that some conflict is absolutely necessary for a group to perform effectively. We label this third school the interactionist view. Let's take a closer look at each of these views.

### **The Traditional View**

The early approach to conflict assumed that all conflict was bad. Conflict was viewed negatively, and it was used synonymously with such terms as *violent*, *destruction*, and irrationality to reinforce its negative connotation. Conflict, by definition, was harmful and was to be avoided. The traditional view was consistent with the attitudes that prevailed about group behavior in the 1930s and 1940s. Conflict was seen as a dysfunctional outcome resulting from poor communication, a lack of openness and trust between people, and the failure of managers to be responsive to the needs and aspirations of their employees.



The view that all conflict is bad certainly offers a simple approach to looking at the behavior of people who create conflict. Because all conflict is to be avoided, we need merely direct our attention to the causes of conflict and correct these malfunctioning to improve group and organizational performance. Although research studies now provide strong evidence to dispute that this approach to conflict reduction results in high group performance, many of us still evaluate conflict situations using this outmoded standard.

### **The Human Relations View**

The **human relations** view argued that conflict was a natural occurrence in all groups and organizations. Because conflict was inevitable, the human relations school advocated acceptance of conflict. Proponents rationalized its existence: it cannot be eliminated, and there are even times when conflict may benefit a group's performance. The human relations view dominated conflict theory from the late 1940s through the mid-1970s.

### **The Interactionist View**

While the human relations view accepted conflict, the **interactionist view** encourages conflict on the grounds that a harmonious, peaceful, tranquil, and cooperative group is prone to becoming static, apathetic, and nonresponsive to needs for change and innovation. The major contribution of the interactionist view, therefore, is encouraging group leaders to maintain an ongoing minimum level of conflict – enough to keep the group viable, self-critical, and creative.

The interactionist view does not propose that all conflicts are good. Rather, some conflicts support the goals of the group and improve its performance; these are **functional**, constructive forms of conflict. In addition, there are conflicts that hinder group performance; these are **dysfunctional** or destructive forms of conflict. What differentiates functional from dysfunctional conflict? The evidence indicates that you need to look at the *type* of conflict. Specifically, there are three types: task, relationship, and process.

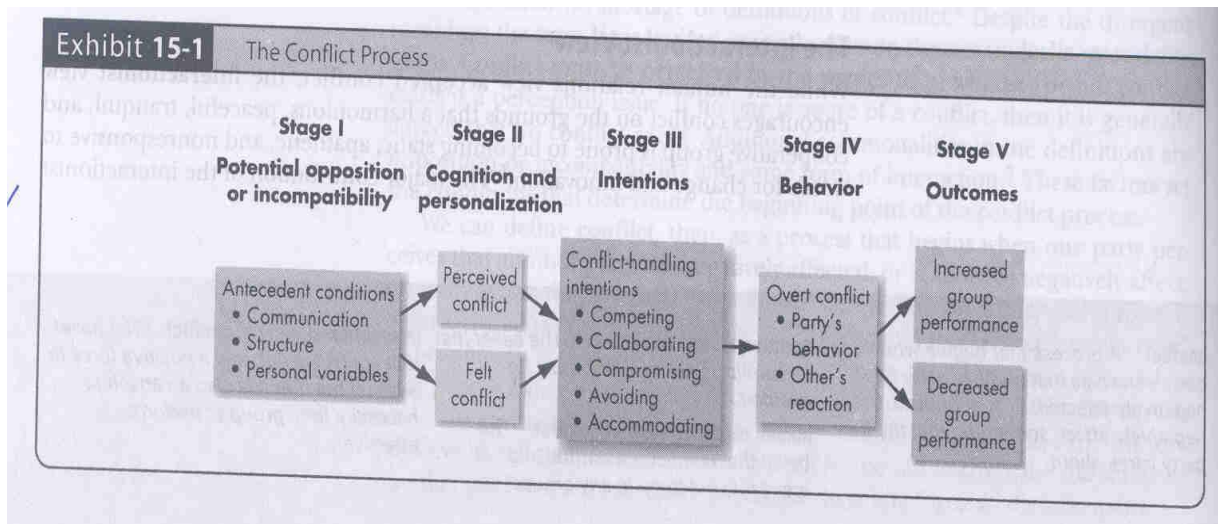
**Task conflict** relates to the content and goals of the work. **Relationship conflict** focuses on interpersonal relationships. **Process conflict** relates to how the work gets done. Studies demonstrate that relationship conflicts are almost always dysfunctional. Why? It appears that the friction and interpersonal hostilities inherent in relationship conflicts increases personality clashes and decreases mutual understanding, which hinders the completion of organizational tasks. However, low levels of process conflict and low-to-moderate levels of task conflict are functional. For process conflict to be productive, it must be kept low. Intense arguments about who should do what become dysfunctional when they create uncertainty about task roles, increase the time to complete tasks, and lead to members working at cross purposes. Low-to-moderate levels of task conflict consistently demonstrate a positive effect on group performance because it stimulates discussion of ideas that helps groups perform better.

## The Conflict Process

The conflict process can be seen as comprising five states: potential opposition or incompatibility, cognition and personalization, intentions, behavior, and outcomes. The process is diagrammed in Exhibit 15-1.

### State I: Potential Opposition or Incompatibility

The first step in the conflict process is the presence of conditions that create opportunities for conflict to arise. They *need not* lead directly to conflict, but one of these conditions is necessary if conflict is to surface. For simplicity's sake, these conditions (which also may be looked at as causes or sources of conflict) have been condensed into three general categories: communication, structure, and personal variables.



## ***Myth or Science?***

### ***“The Source of most conflicts Is Lack of Communication***

This statement is probably false. A popular myth in organization is that poor communication is the primary source of conflicts. And certainly problems in the communication process do act to retard collaboration, stimulate misunderstandings, and create conflicts. But a review of the literature suggests that within organizations, structural factors and individual value differences are probably greater sources of conflict.

Conflicts in organizations are frequently structurally derived. For instance, in the movie-making business, conflicts between directors and producers are often due to different goals. Directors want to create artist films, regardless of costs. Producers want to make financially profitable movies by minimizing costs. When people have to work together, but are pursuing diverse goals, conflicts ensue. Similarly, Increased organizational size, routinization, work specialization, and zero-sum reward systems are all examples of structural factors that can lead to conflicts.

Many conflicts attributed to poor communication are, on closer examination, due to value differences. When managers incorrectly treat a value-based conflict as a communication problem, the conflict is rarely eliminated. Increased communication efforts are likely to crystallize and reinforce differences. “Before this conversation, I thought you might be closed-minded. Now I know you are!”

Lack of communication can be a source of conflict. But managers should first look to structural or value-based explanations because they are more prevalent in organizations.

**Communication:** Susan had worked in supply-chain management at Bristo-Myers Squibb for 3 years. She enjoyed her work in large part because her boss, Tim McGuire, was a great guy to work for. Then Tim got promoted 6 months ago and Chuck Benson took his place. Susan says her job is a lot more frustrating now. “Tim and I were on the same wavelength. It’s not that way with Chuck. He tells me something and I do it. Then he tells me I did it wrong. I think he means one thing but says something else. It’s been like this since the day he arrived. I don’t think a day goes by when he isn’t yelling at me for something. You know, there are some people you just find it easy to communicate with. Well, Chuck isn’t one of those.

Susan’s comments illustrate that communication can be a source of conflict. They represent the opposing forces that arise from semantic difficulties, misunderstanding, and “noise” in the communication channels. Much of this discussion can be related back to our comments on communication in chapter 11.

A review of the research suggests that differing word connotations, jargon, insufficient exchange of information, and noise in the communication channel are all barriers to communication and potential antecedent condition to conflict. Evidence demonstrates that semantic difficulties arise as a result of differences in training, selective perception, and inadequate information about others. Research has further demonstrated a surprising finding: The potential for conflict increases when either too little or too much communication takes place. Apparently, an increase in communication is functional up to a point, whereupon it is possible to over communicate, with a resultant increase in

the potential for conflict. Too much information as well as too little can lay the foundation for conflict.

Furthermore, the channel chosen for communicating can have an influence on stimulating opposition the filtering process that occurs as information is passed between members and the divergence of communications from formal or previously established channels offer potential opportunities for conflict to arise.

**Structure:** Charlotte and Teri both work at the Portland Furniture Mart – a large discount furniture retailer. Charlotte is a salesperson on the floor. Teri is the company credit manager. The two women have know each other for years and have much in common – they live within tow blocks of each other, and their oldest daughters attend the same middle school and are best friends. In reality, if Charlotte and Teri had different jobs they might be best friends themselves, but these two women are consistently fighting battles with each other. Charlotte’s job is to sell furniture and she does a heck of a job. But most of her sales are made on credit. Because Teri’s job is to make sure the company minimizes credit losses, she regularly has to turn down the credit application of a customer with whom Charlotte has just closed a sale. It’s nothing personal between Charlotte and Teri – the requirements of their jobs just bring them into conflict.

The conflicts between Charlotte and Teri are structural in nature. The term *structure* is used, in this context, to include variables such as size, degree of specialization in the tasks assigned to group members, jurisdictional clarity, member-goal compatibility, leadership styles, reward systems, and the degree of dependence between groups.

Research indicates that size and specialization act as forces to stimulate conflict. The larger the group and the more specialized its activities, the greater the likelihood of conflict. Tenure and conflict have been found to be inversely related. The potential for conflict tends to be greatest when group members are younger and when turnover is high.

The greater the ambiguity in precisely defining where responsibility for actions lies, the greater the potential for conflict to emerge. Such jurisdictional ambiguities increase intergroup fighting for control of resources and territory.

Groups within organizations have diverse goals. For instance, supply management is concerned with the timely acquisition of inputs at low prices, marketing’s goals concentrate on disposing of outputs and increasing revenues, quality control’s attention is focused on improving quality and ensuring that the organization’s products meet standards, and production units seek efficiency of operations by maintaining a steady production flow. This diversity of goals among groups is a major source of conflict. When groups within an organization seek diverse ends, some of which – like sales and credit at Portland Furniture Mart – are inherently at odds, the are increased opportunities for conflict.

There is some indication that a close style of leadership – tight and continuous observation with general control of others’ behaviors – increases conflict potential, but the evidence is not particularly strong. Too much reliance on participation may also stimulate conflict. Research tends to confirm that participation and conflict are highly correlated,

apparently because participation encourages the promotion of differences. Reward systems, too, are found to create conflict when one member's gain is at another's expense. Finally, if a group is dependent on another group (in contrast to the two being mutually independent) of if interdependence allows one group to gain at another's expense, opposing forces are stimulated.

**Personal Variables:** Did you ever meet someone to whom you took an immediate disliking? Most of the opinions they expressed, you disagreed with. Even insignificant characteristics – the sound of their voice, the smirk when they smiled, their personality – annoyed you. We've all met people like that. When you have to work with such individuals, there is often the potential for conflict.

Our last category of potential sources of conflict is personal variables, which include personality, emotions, and values. Evidence indicates that certain personality types – for example, individuals who are highly authoritarian and dogmatic –lead to potential conflict. Emotions can also cause conflict. For example, an employee who shows up to work irate from her hectic morning commute may carry that anger with her 9:00 AM meeting. The problem? Her anger can annoy her colleagues, which may lead to a tension-filled meeting.

Finally, differing values can explain conflict. Value differences, for example, are the best explanation of diverse issue such as prejudice, disagreements over one's contribution to the group and the rewards one deserves, and assessments of whether this particular book is any good. That John dislikes African Americans and Dana believes John's position indicates his ignorance, that an employee thinks he is worth \$55,000 a year but his boss believes him to be worth \$50,000, and that Ann thinks this book is interesting to read while Jennifer views it as trash are all value judgments. And differences in value systems are important sources for crating the potential for conflict. It is also important to note that culture can be a source of differing values. For example, research indicates that individuals in Japan and in the United States view conflict differently from their counterparts as unfair and to reject such offers.

## Stage II: Cognition and Personalization

If the conditions cited in Stage I negatively affect something that one party cares about, then the potential for opposition or incompatibility becomes actualized in the second stage.

As we noted in our definition of conflict, perception is required. Therefore, one or more of the parties must be aware of the existence of the antecedent conditions. However, because a conflict is **perceived** does not mean that it is personalized. In other words, "A may be aware that B and A are in serious disagreement ...but it may not make a tense or anxious, and it may have no effect whatsoever on A's affection toward B. it is at the **felt** level, when individuals become emotionally involved, that parties experience anxiety, tension, frustration, or hostility.

Keep in mind two points. First, Stage II is important because it's where conflict issues tend to be defined. This is the place in the process where the parties decide what the conflict is about. And, in turn, this "sense making" is critical because the way a conflict is defined goes a long way toward establishing the sort of outcomes that might settle it. For instance, if I define our salary disagreement as a zero-sum situation – that is, if you get the increase in pay you want,

there will be just that amount less for me – I am going to be far less willing to compromise that if I frame the conflict as a potential win-win situation (that is, the dollars in the salary pool might be increased so that both of us could get the added pay we want). So the definition of a conflict is important, because it typically delineates the set of possible settlements. Our second point is that emotions play a major role in shaping perceptions. For example, negative emotions have been found to produce oversimplification of issues, reductions trust, positive feelings have been found to increase the tendency to see potential relationships among the elements of a problem, to take a broader view of the situation, and to develop more innovative solutions.

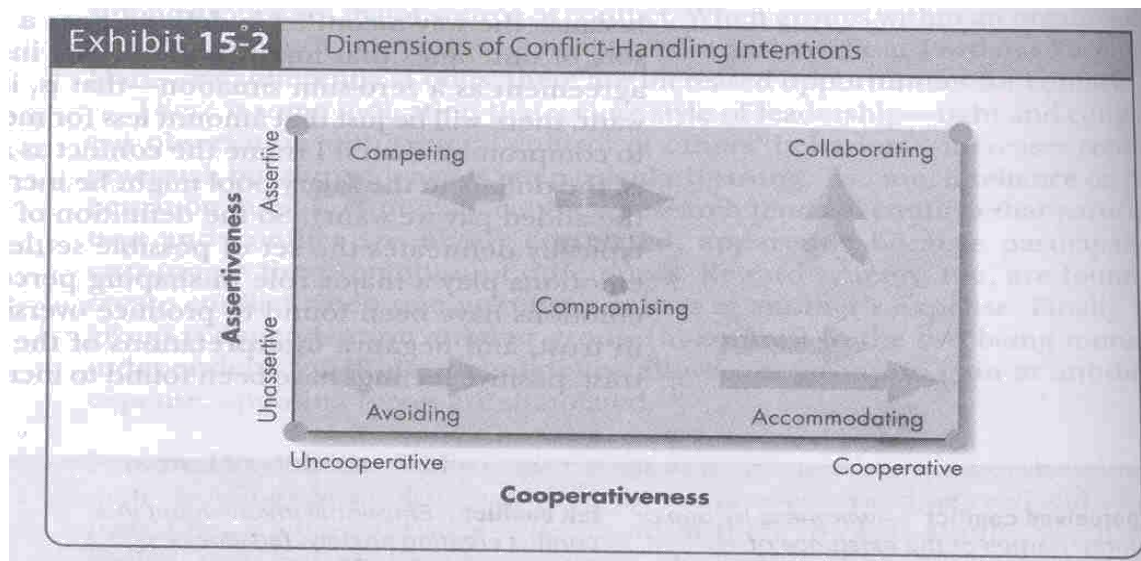
### Stage III: Intentions

Intentions intervene between people's perceptions and emotions and their over behavior. These intentions are decisions to act in a given way.

Why are intention separated out as a distinct stage? You have to infer the other's intent to know how to respond to that other's behavior. A lot of conflicts are escalated merely by one party attributing the wrong intentions to the other party. In addition, there is typically a great deal of slippage between intentions and behavior, so behavior does not always accurately reflect a person's intentions.

Exhibit 15-2 represents one author's effort to identify the primary conflict handling intentions. Using two dimensions – *cooperativeness* (the degree to which one party attempts to satisfy the other party's concerns) and *assertiveness* (the degree to which one party attempts to satisfy his or her own concerns) – five conflict – handling intentions can be identified: *competing* (assertive and uncooperative), *collaborating* (assertive and cooperative), *accommodating* (unassertive and cooperative), and *compromising* (midrange on both assertiveness and cooperativeness).

**Competing:** When one person seeks to satisfy his or her own interests, regardless of the impact on the other parties to the conflict, that person is competing. Examples include intending to achieve your goal at the sacrifice of the other's goal, attempting to convince another that your conclusion is correct and that his or hers is mistaken, and trying to make someone else accept blame for a problem.



**Collaborating:** When the parties to conflict each desire to fully satisfy the concerns of all parties, we have cooperation and the search for a mutually beneficial outcome. In collaborating, the intention of the parties is to solve the problem by clarifying differences rather than by accommodating various points of view. Examples include attempting to find a win-win solution that allows both parties' goals to be completely achieved and seeking a conclusion that incorporates the valid insights of both parties.

**Avoiding:** A person may recognize that a conflict exists and want to withdraw from it or suppress it. Examples of **avoiding** include trying to just ignore a conflict and avoiding others with whom you disagree.

**Accommodating:** When one party seeks to appease an opponent, that party may be willing to place the opponent, that party may be willing to place the opponent's interests above his or her own. In other words, in order for the relationship to be maintained, one party is willing to be self-sacrificing. We refer to this intention as accommodating. Examples are a willingness to sacrifice your goal so that the other party's goal can be attained, supporting someone else's opinion despite your reservations about it, and for-giving someone for an infraction and allowing subsequent ones.

**Compromising:** When each party to the conflict seeks to give up something, sharing occurs, resulting in a compromised outcome in compromising, there is no clear winner or loser. Rather, there is a willingness to ration the object of the conflict and accept a solution that provides incomplete satisfaction of the parties' concerns. The distinguishing characteristic of compromising, therefore, is that each party intends to give up something. Examples might be willingness to accept a raise of \$2 an hour rather than \$3, to acknowledge partial agreement with a specific viewpoint, and to take partial blame for an infraction.

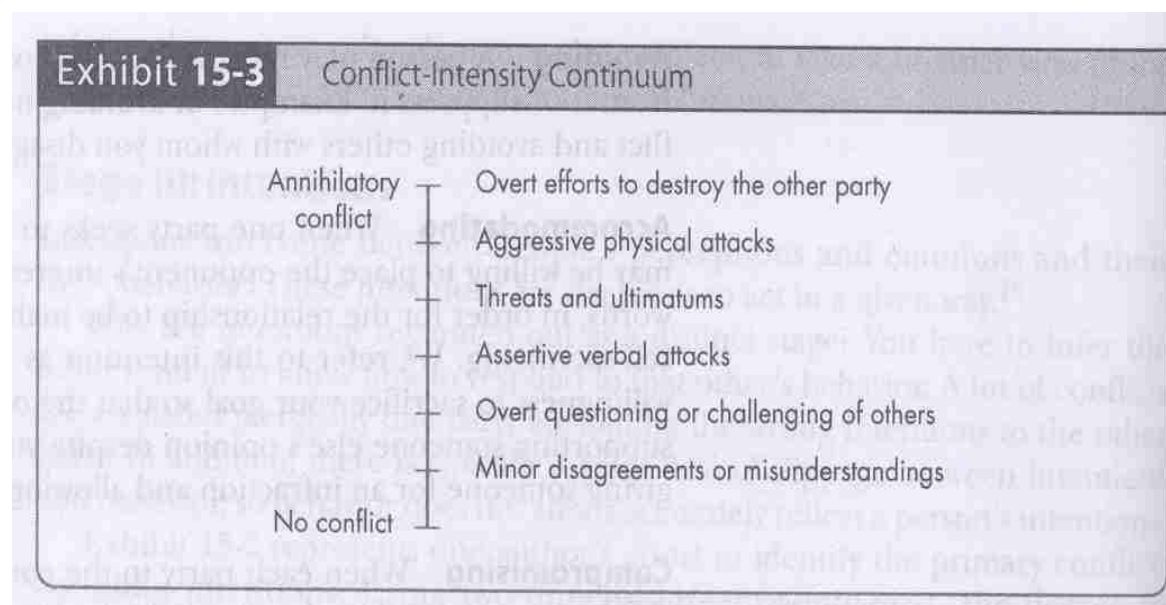
Intentions provide general guidelines for parties in a conflict situation. They define each party's purpose. Yet, people's intentions are not fixed. During the course of a conflict, they might change because of reconceptualization or because of an emotional reaction to the behavior

of the other party. However, research indicates that people have an underlying disposition to handle conflicts in certain ways. Specifically, individuals have preferences among the five conflict-handling intentions just described; these preferences tend to be relied on quite consistently, and a person's intentions can be predicted rather well from a combination of intellectual and personality characteristics. So it may be more appropriate to view the five conflict-handling intentions as relatively fixed rather than as a set of options from which individuals choose to fit an appropriate situation. That is, when confronting a conflict situation, some people want to win it all at any cost, some want to find an optimal solution, some want to run away, others want to be obliging, and still others want to "split the difference."

## Stage IV: Behavior

When most people think of conflict situations, they tend to focus on Stage IV. Why? Because this is where conflicts become visible. The behavior stage includes the statements, actions, and reactions made by the conflicting parties. These conflict behaviors are usually overt attempts to implement each party's intentions. But these behaviors have a stimulus quality that is separate from intentions. As a result of miscalculations or unskilled enactments, overt behaviors sometimes deviate from original intentions.

It helps to think of Stage IV as a dynamic process of interaction. For example, you made a demand on me; I respond by arguing; you threaten me; threaten you back; and so on. Exhibit 15-3 provides a way of visualizing conflict behavior. All conflicts exist somewhere along this continuum. At the lower part of the continuum, we have conflicts characterized by subtle, indirect, and highly controlled forms of tension. An illustration might be a student questioning in class a point the instructor has just made. Conflict intensities escalate as they move upward along the continuum until they become highly destructive. Strikes, riots, and wars clearly fall in this upper range. For the most part, you should assume that conflicts that reach the upper ranges of the continuum are almost always dysfunctional. Functional conflicts are typically confined to the lower range of the continuum.





If a conflict is dysfunctional, what can the parties do to de-escalate it? Or, conversely, what options exist if conflict is too low and needs to be increased? This brings us to conflict-management techniques. Exhibit 15-4 lists the major resolution and stimulation techniques that allow managers to control conflict levels. Note that several of the resolution techniques were described earlier as conflict-handling intentions. This, of course, shouldn't be surprising. Under ideal conditions, a person's intentions should translate into comparable behaviors.

## Stage V: Outcomes

The action –reaction interplay between the conflicting parties results in consequences. As our model (see Exhibit 15-1) demonstrates, these outcomes may be functional in that the conflict results in an improvement in the group's performance, or dysfunctional in that it hinders group performance.

**Functional outcomes:** How might conflict act as a force to increase group performance? It is hard to visualize a situation in which open or violent aggression could be functional. But there are a number of instances in which it's possible to envision how low or moderate levels of conflict could improve the effectiveness of a group. Because people often find it difficult to think of instances in which conflict can be constructive, let's consider some examples and then review the research evidence. Note how all these examples focus on task and process conflicts and exclude the relationship variety.

Conflict is constructive when it improves the quality of decisions, stimulates creativity and innovation, encourages interest and curiosity among group members, provides the medium through which problems can be aired and tensions released, and fosters an environment of self-evaluation and change. The evidence suggests that conflict can improve the quality of decision making by allowing all points, particularly the ones that are unusual or held by a minority, to weigh in on important decisions. Conflict is an antidote for groupthink. It doesn't allow the group to passively "rubber-stamp" decisions that may be based on weak assumptions, inadequate consideration of relevant alternatives, or other debilities. Conflict challenges the status quo and therefore furthers the creation of new ideas, promotes reassessment of group goals and activities, and increases the probability that the group will respond to change.

Exhibit 15-4	Conflict Management Techniques
Conflict-Resolution Techniques	
Problem solving	Face-to-face meeting of the conflicting parties for the purpose of identifying the problem and resolving it through open discussion
Superordinate goals	Creating shared goal that cannot be attained without the cooperation of each of the conflicting parties.
Expansion of resources	When a conflict is caused by the scarcity of a resource – say, money, promotion, opportunities, office space – expansion of the resource can create a win-win solution
Avoidance	Withdrawal from, or suppression of, the conflict.

Smoothing	Playing down differences while emphasizing common interests between the common interests between the conflicting parties.
Compromise	Each party to the conflict gives up something of value.
Authoritative command	Management uses its formal authority to resolve the conflict and then communicates its desires to the parties involved.
Altering the human variable	Using behavioral change techniques such as human relations training to alter attitudes and behaviors that cause conflict.
Altering the structural variables	Changing the formal organization structure and the interaction patterns of conflicting parties through job redesign, transfers, creation of coordinating positions and the like.
<b>Conflict-Stimulation Techniques</b>	
Communication	Using ambiguous or threatening messages to increase conflict levels.
Bringing in Outsiders	Adding employees to a group whose backgrounds, values, attitudes, or managerial styles differ from those of present members
Restructuring the organization	Realigning work groups, altering rules and regulations, increasing interdependence, and making similar structural changes to disrupt the status quo
Appointing a devil's advocate	Designating a critic to purposely argue against the majority positions held by the group

**Source:** Based on S.P. Robbins, *Managing Organizational Conflict. A Nontraditional Approach* (Upper Saddle River, NJ: Prentice Hall, 1974), pp. 59-89.

For an example of a company that suffered because it had too little functional conflict, you don't have to look further than automobile behemoth General Motors. Many of GM's problems, from the late 1960s, can be traced to a lack of functional conflict. It hired and promoted individuals who were "yes-men," loyal to GM to the point of never questioning company actions. Managers were, for the most part, homogenous: conservative white males raised in the Midwestern United States who resisted change – they preferred looking back to past successes rather than forward to new challenges. They were almost sanctimonious in their belief that what had worked in the past would continue to work in the future. Moreover, by sheltering executives in the company's Detroit offices and encouraging them to socialize other others inside the GM ranks, the company further insulated managers from conflicting perspectives.

More recently, Yahoo! provides an illustration of a company that suffered because of too little functional conflict. Begun in 1994, by 1999 Yahoo! Had become one of the best-known brand names on the Internet. Then the implosion of dot.com stocks hit. By the spring of 2001, Yahoo!'s advertising sales were plunging and the company's stock was down 92 percent from its peak. It was at this point that Yahoo!'s most critical problem became exposed: the company was too insulated and void of functional conflict. It couldn't respond to change. Managers and staff

were too comfortable with each other to challenge the status quo. This kept new ideas from percolating upward and held dissent to a minimum. The source of the problem was the company's CEO, Tim Koogle. He set the tone of nonconfrontation. Only when Koogle was replaced in 2001, with a new CEO who openly challenged the company's conflict-free climate, did Yahoo! Begin to successfully solve its problems.

Research studies in diverse setting confirm the functionality of conflict. Consider the following findings.

The comparison of six major decisions made during the administration of four different U.S. presidents found that conflict reduced the chance that groupthink would overpower policy decisions. The comparisons demonstrated that conformity among presidential advisors was related to poor decisions, whereas an atmosphere of constructive conflict and critical thinking surrounded the well-developed decisions.

There is evidence indicating that conflict can also be positively related to productivity. For instance, it was demonstrated that, among established groups, performance tended to improve more when there was conflict among members than when there was fairly close agreement. The investigators observed that when groups analyzed decisions that had been made by the individual members of that group, the average improvement among the high-conflict groups was 73 percent greater than was that of those groups characterized by low-conflict conditions. Others have found similar results: Groups composed of members with different interests tend to produce higher-quality solutions to a variety of problems than do homogeneous groups.

The preceding leads us to predict that the increasing cultural diversity of the workforce should provide benefits to organizations. And that's what the evidence indicates. Research demonstrates that heterogeneity among group and organization members can increase creativity, improve the equality of decisions, and facilitate change by enhancing member flexibility. For example, researchers compared decision-making groups composed of all Caucasian groups.

Similarly, studies of professional –systems analysts and research and development scientists – support the constructive value of conflict. An investigation of 22 teams of systems analysts found that the more incompatible groups were likely to be more productive. Research and development scientists have been found to be most productive when there is a certain amount of intellectual conflict.

**Dysfunctional Outcomes:** The destructive consequences of conflict on a group's or organization's performance are generally well known. A reasonable summary might state: uncontrolled opposition breeds discontent which accounts to dissolve common ties, and eventually leads to the destruction of the group. And, of course, there is a substantial body of literature to document how conflict – the dysfunctional varieties – can reduce group effectiveness. Among the more undesirable consequences are a retarding of communication, reductions in group cohesiveness, and subordination of group goals to the primacy of infighting among members. At the extreme, conflict can bring group functioning to a halt and potentially threaten the group's survival.

The demise of an organization as a result of too much conflict isn't as unusual as it might first appear. For instance, one of New York's best-known law firms, Shea & Gould, closed down solely because to 80 partners just couldn't get along. As one legal consultant familiar with the organization said: "This was a firm that had basic and principled differences among the partners that were basically irreconcilable." That same consultant also addressed the partners at their last meeting: "You don't have an economic problems," he said. "You have a personality problem. You hate each other!"

**Crating Functional Conflict:** In this section we ask: If managers accept the interactionist view toward conflict, what can they do to encourage functional conflict in their organizations?

There seems to be general agreement that creating functional conflict is a tough job, particularly in large American corporations. As one consultant put it, "A high proportion of people who get to the top are conflict avoiders. They don't like hearing negatives; they don't like saying or thinking negative things. They frequently make it up the ladder in part because they don't irritate people on the way up." Another suggests that at least seven out of ten people in American business hush up when their opinions are at odds with those of their superiors, allowing bosses to make mistakes even when they know better.

Such anticonflict cultures may have been tolerable in the past but not in today's fiercely competitive global economy. Organizations that don't encourage and support dissent may find their survival threatened. Let's look at some approaches organizations are using to encourage their people to challenge the system and develop fresh ideas.

Hewlett-Packard rewards dissenters by recognizing go-against-the-grain types, or people who stay with the ideas they believe in even when those ideas are rejected by management. Herman Miller Inc., an office furniture manufacturer, has a formal system in which employees evaluate and criticize their bosses. IBM also has a formal system that encourages dissension. Employees can question their boss with impunity. If the disagreement can't be resolved, the system provides a third party for counsel. Royal Dutch Shell Group, General Electric, and Anheuser-Busch build devil's advocates into the decision process. For instance, when the policy committee at Anheuser-Busch considers a major move, such as getting into or out of a business or making a major capital expenditure, it often assigns teams to make the case for each side of the question. This process frequently results in decisions and alternatives that hadn't been considered previously.

One common ingredient in organizations that successfully crate functional conflict is that they reward dissent and punish conflict avoiders. The real challenge for mangers, however, is when they hear news that they don't want to hear. The news may make their blood boil or their hopes collapse, but they can't show it. They have to learn to take the bad news without flinching. No tirades, no tight-lipped sarcasm, no eyes rolling upward, no gritting of teeth. Rather, managers should ask calm, even-tempered questions: "Can you tell me more about what happened?" "What do you think we ought to do?" A sincere "thank you for brining this to may attention" will probably reduce the likelihood that managers will be cut off from similar communications in the future.

Having considered conflict – its nature, causes, and consequences – now we turn to negotiation. Negotiation and conflict are closely related because negotiation often resolves conflict.

## Negotiation

Negotiation permeates the interactions of almost everyone in groups and organizations. There's the obvious: Labor bargains with management. There's the not so obvious: Managers negotiate with employees, peers, and bosses; salespeople negotiate with customers; purchasing agents negotiate with suppliers. And there's the subtle: An employee agrees to answer a colleague's phone for a few minutes in exchange for some past or future benefit. In today's loosely structured organizations, in which members are increasingly finding themselves having to work with colleagues over whom they have no direct authority and with whom they may not even share a common boss, negotiation skills become critical.

We'll define **negotiation** as a process in which two or more parties exchange goods or services and attempt to agree on the exchange rate for them. Note that we'll use the terms *negotiation* and *bargaining* interchangeably. In this section, we'll contrast two bargaining strategies, provide a model of the negotiation process, ascertain the role of moods and personality traits on bargaining, review gender and cultural differences in negotiation, and take a brief look at third-party negotiations.

### Bargaining Strategies

There are two general approaches to negotiation – *distributive bargaining* and *integrative bargaining*. These are compared in Exhibit 15-5. As the exhibit shows, distributive and integrative bargaining differ in their goal and motivation, focus, interests, information sharing, and duration of relationship. We now define distributive and integrative bargaining and illustrate the differences between these two approaches.

Exhibit 15-5		Distributive Versus Integrative Bargaining	
Bargaining Characteristic	Distributive Bargaining	Integrative Bargaining	
Goal	Get as much of the pie as possible	Expand the pie so that both parties are satisfied	
Motivation	Win-Lose	Win-Win	
Focus	Positions (“I can’t go beyond this point on this issue.”)	Interests (“Can you explain why this issue is so important to you?”)	
Interests	Opposed	Congruent	
Information sharing	Low (sharing information will only allow other party to take advantage)	High (sharing information will allow each party to find ways to satisfy interests of each party)	
Duration of relationship	Short term	Long term	

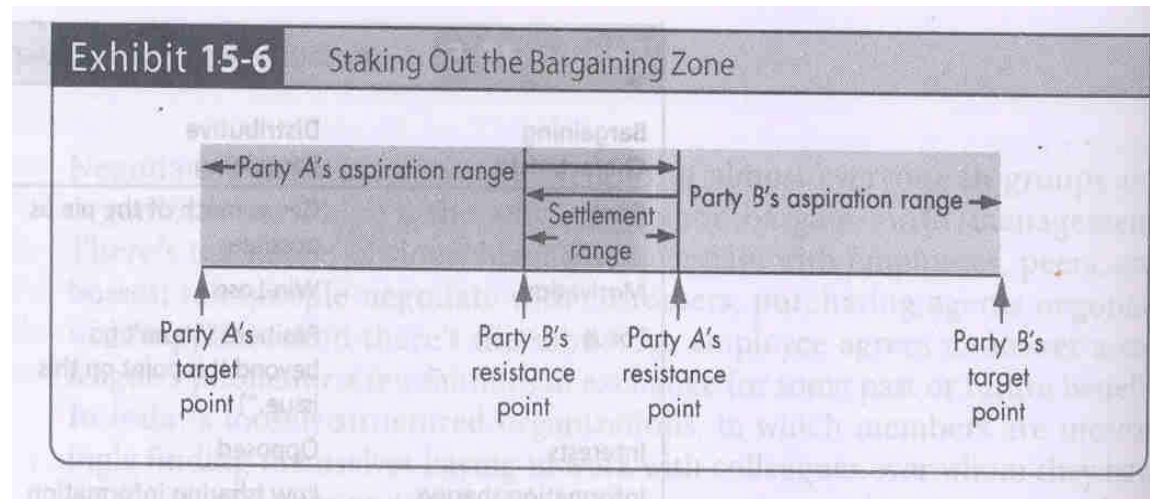
**Distributive Bargaining:** You see a used car advertised for sale in the newspaper. It appears to be just what you’ve been looking for. You go out to see the car. It’s great and you want it. The owner tells you the asking price. You don’t want to pay that much. The two of you then negotiate over the price. The negotiating to pay that much. The two of you then negotiate over the price.

The negotiating strategy you’re engaging in is called **distributive bargaining**. Its most identifying feature is that it operates under zero-sum conditions. That is, any gain I make is at your expense, and vice versa. Referring back to the used-car example, every dollar you can get the seller to cut from the car’s price is a dollar you save. Conversely, every dollar more the seller can get from you comes at your expense. So the essence of distributive bargaining is negotiating over who gets what share of **fixed pie**. By fixed pie, we mean that the bargaining parties believe there is only a set amount of goods or services to be decided up. Therefore, fixed pies are zero-sum games in that every dollar in one party’s pocket is a dollar out their counterpart’s pocket. When parties believe the pie is fixed, they tend to bargain distributive.

Probably the most widely cited example of distributive bargaining is in labor-management negotiations over wages. Typically, labor’s representatives come to the bargaining table determined to get as much money as possible out of management. Because every cent more that labor negotiates increases management’s costs, each party bargains aggressively and treats the other as an opponent who must be defeated.

The essence of distributive bargaining is depicted in Exhibit 15-6. Parties A and B represent two negotiators. Each has a *target point* that defines what he or she would like to achieve. Each also has *resistance point*, which marks the lowest outcome that is acceptable – the point below which they would break off negotiations rather than accept a less-favorable settlement. The area between these two points makes up each one’s aspiration range, as long as there is some overlap between A’s and B’s aspiration ranges, there exists a settlement range in which each one’s aspirations can be met.

When engaged in distributive bargaining, one's tactics focus on trying to get one's opponent to agree to a specific target point or to get as close to it as possible. Examples of such tactics are persuading your opponent of the impossibility of getting to his or her target point and the advisability of accepting a settlement near yours; arguing that your target is fair, while your opponent's isn't; and attempting to get your opponent to feel emotionally generous toward you and thus accept an outcome close to your target point.



But what are some less obvious examples of distributive bargaining tactics? One routine you have likely heard of – perhaps from your favorite crime show – is the good cop, bad cop routine where one negotiator is friendly and accommodating and the other is as tough as nails. Research shows that negotiating teams that use this tactic when engaged in distributive bargaining achieve better settlements than a negotiation team that doesn't use the good cop, bad cop tactic. But it appears that the good cop, bad cop routine works only when the positive negotiator follows the negative negotiator. Why? Because the positive negotiator seems much more accommodating and likeable after following the disagreeable negotiator. For examples, let's say you're negotiating over a lease for office space with two people: Jim and Susan. When you ask for a lower rental rate, Jim reacts very negatively – accusing you of deception, making threats about leasing the space to another party, and in general appearing irritated and disrespectful. Jim leaves and Susan takes over. Susan apologizes for Jim's behavior. She appears to be understanding of your position and also seems supportive and cooperative. But she politely says they've made the best offer they possibly can. Do you think you'd accept Susan's terms? Judging from past research, you probably would, because the contrast between Susan's and Jim's behavior leads you to believe that you've done your best, and you form a liking for Susan and want to cooperate with her.

Another distributive bargaining tactic is revealing a deadline. Consider the following example. Erin is human resources manager. She is negotiating salary with Ron, who is highly sought after new hire. Because Ron knows the company needs him, he decides to play hardball and ask for an extraordinary salary and many benefits. Erin tells Ron that the company can't meet his requirements. Ron tells Erin he is going to have to think things over. Worried the company is going to lose Ron to a competitor, Erin decides to tell Ron that she is under time pressure and that she needs to reach an agreement with him immediately or she will have to offer

the job to another candidate. Would you consider Erin to be a say negotiator? Well, she is. Why? Negotiators who reveal deadlines speed concessions from their negotiating counterparts, making them reconsider their position. And even though negotiators don't think this tactic works, in reality negotiators who reveal deadlines do better.

**Integrative Bargaining:** A sales representative for a women's sportswear manufacturer has just close a \$15,000 order from a small clothing retailer. The sales rep calls in the order to her firm's credit department. She is told that the firm can't approve credit to this customer because of a past slow-payment record. The next day, the sales rep and the firm's credit manager meet to discuss the problem the sales rep doesn't want to lose the business. Neither does the credit manager, but he also doesn't want to get stuck with an uncollectable debt. The two openly review their options. After considerable discussion, they agree on a solution that meets both their needs: The credit manager will approve the sale, but the clothing store's owner will provide a bank guarantee that will ensure payment if the bill isn't paid within 60 days. This sales-credit negotiation is an example of integrative bargaining. In contrast to distributive bargaining, integrative bargaining operates under the assumption that there exist one or more settlements that can create a win-win solution.

In terms of intraorganizational behavior, all things being equal, integrative bargaining is preferable to distributive bargaining. Why? Because the former builds long-term relationships. It bonds negotiations and allows them to leave the bargaining table feeling that they have achieved a victory. Distributive bargaining, however, leaves one party a loser. It tends to build animosities and deepen division when people have to work together on an ongoing basis.

Why, then, don't we see more integrative bargaining in organizations? The answer lies in the conditions necessary for this type of negotiation to succeed. These include parties who are open with information and candid about their concerns, as sensitivity by both parties to the other's needs, the ability to meet these conditions often don't exist in organizations, it isn't surprising that negotiations often take on a win-at-any-cost dynamic.

There are some ways to achieve more integrative outcomes. For example individuals who bargain in teams reach more integrative agreements than those who bargain individually. This happens because more ideas are generated when more people are at the bargaining table. So, try bargaining in team. Another way to achieve higher joint gain settlements is to put more issues on the table. The more negotiable issues that are introduced into a negotiation, the more opportunity there is for logrolling where issues are traded because of differences in preferences. This creates better outcomes for each side than if each issue were negotiated individually.

Finally, you should realize that compromise may be your worst ever in negotiating a win-win agreement. This is because compromising reduces the pressure to bargain integratively. After all, if you or your opponent caves in easily, it doesn't require anyone to be creative to reach a settlement. Thus, people end up settling for less than they could have obtained if they had been forced to consider the other party's interests, trade off issues, and be creative. Think of the classic example where two sisters like orange, then they never would have been forced to explore their reasons for wanting the orange, and thus they never would find the win-win solution: they could each have the orange because they want different parts of it!



## The Negotiation Process

Exhibit 15-7 provides a simplified model of the negotiation process. It views negotiation as made up of five steps: (1) preparation and planning; (2) definition of ground rules; (3) clarification and justification; (4) bargaining and problem solving, and (5) closure and implementation.

**Preparation and Planning:** Before you start negotiating, you need to do more homework.

That's the nature of the conflict? What's the history leading up to this negotiation? Who's involved and what are their perceptions of the conflict?

What do you want from the negotiation? What are *your* goals? If you're a supply manager at Dell Computer, for instance, and your goal is to get significant cost reduction from your supplier of *keyboards*, make sure that this goal stays often helps to put your goals in writing and develop a range of outcomes – from “most hopeful” to “minimally acceptable” – to keep your attention focuses.

You also want to prepare an assessment of what you think the other party's goals are. What are they likely to ask for? How entrenched are they likely to be in their position? What intangible or hidden interests may be important to them? What might they be willing to settle on? When you can anticipate your opponent's position, you are better equipped to counter arguments with the facts and figures that support your position.

The importance of sizing up the other party is illustrated by the experience of Keith Rosenbaum, a partner in a major Los Angeles Law firm. “Once when we were negotiating to buy a business, we found that the owner was going through a nasty divorce. We were on good terms with the wife's attorney and we learned the seller's net worth. California is a community-property-law state, so we knew he had to pay her half of everything. We knew his time frame. We knew what he was willing to part with and what he was not. We knew a lot more about him than he would have wanted us to know. We were able to twist him a little bit, and get a better price.

Once you've gathered your information, use it to develop a strategy for example, expert chess players have a strategy. They know ahead of time how they will respond to any given situation. As part of your strategy, you should determine yours and the other side's *Best Alternative To a Negotiated Agreement (BATNA)*. Your BATNA determines the lowest value acceptable to you for a negotiated agreement. Any offer you receive that is higher than your

BATNA is better than an impasse. Conversely, you shouldn't expect success in your negotiation effort unless you're able to make the other side an offer they find more attractive than their BATNA. If you go into your negotiation having a good idea of what the other party's BATNA is, even if you're not able to meet theirs, you might be able to get them to change it.

**Definition of Ground Rules:** Once you've done your planning and developed a strategy, you're ready to begin defining the ground rules and procedures with the other party over the negotiation itself. Who will do the negotiating? Where will it take place? What time constraints, if any, will apply? To what issues will negotiation be limited? Will there be a specific procedure to follow if

an impasse is reached? During this phase, the parties will also exchange their initial proposals or demands.

**Clarification and Justification:** When initial positions have been exchanged, both you and the other party will explain, amplify, clarify, bolster, and justify your original demands. This needn't be confrontational. Rather, it's an opportunity for educating and informing each other on the issues, why they are important, and how each arrived at their initial demands. This is the point at which you might want to provide the other party with any documentation that helps support your position.

**Bargaining and Problem Solving:** the essence of the negotiation process is the actual give-and-take in trying to hash out an agreement. It is here where concessions will undoubtedly need to be made by both parties.

**Closure and Implementation:** The final step in the negotiation process is formalizing the agreement that has been worked out and developing any procedures that are necessary for implementation and monitoring. For major negotiations – which would include everything from labor-management negotiations to bargaining over lease terms to buying a piece of real estate to negotiating a job offer for a senior management position – this will require hammering out the specifics in a formal contract. For most cases, however, closure of the negotiation process is nothing more formal than a handshake.

## Issues in Negotiation

We conclude our discussion of negotiation by reviewing four contemporary issues in negotiation: the role of mood and personality traits, gender differences in negotiating, the effect of cultural differences on negotiating styles, and the use of third parties to help resolve differences.

**The Role of Mood and Personality Traits in Negotiation:** You're probably not surprised to learn that mood matters in negotiation. Negotiators who are in positive moods negotiate better outcomes than those who are in average moods. Why? Negotiators who are upbeat or happy tend to trust the other part more and therefore reach more joint-gain settlements. Let's assume Carlos, a manager, is a very effective negotiator. One of the reasons Carlos is a good negotiator is because he opens negotiations by trying to put his counterparts in a good mood – he tells jokes, provides refreshments, or emphasizes the positive side of what's at stake. This technique makes his counterparts bargain more integratively because they communicate their priorities, they more accurately perceive other's interests, and they also think more creatively.

What about personality? Can you predict an opponent's negotiating tactics if you know something about his or her personality? It's tempting to answer "Yes" to this question. For instance, you might assume that high-risk takers would be more aggressive bargainers who make fewer concessions. Surprisingly, the evidence hasn't always supported this intuition.

Assessments of the personality-negotiation relationship have been that personality traits have no significant direct effect on either the bargaining process or the negotiation outcomes. However, recent research has started to question the theory that personality and the negotiation

process aren't connected. In fact, it appears that several of the Big Five traits are related to negotiation outcomes. For example, negotiators who are agreeable or extraverted are not very successful when it comes to distributive bargaining. Why? Because extraverts are outgoing and friendly, they tend to share more information than they should. And agreeable people are more interested finding ways to cooperate rather than but heads. These traits, while slightly helpful in integrative negotiations, are liabilities when interests are opposed. So, the best distributive bargainer appears to be a disagreeable introvert – that is, someone who is interested in his own outcomes versus pleasing the other party and having a pleasant social exchange.



A big ego can also affect negotiations. For example, Samantha is an executive with a major clothing manufacturer. She is convinced that everything she touches turns to gold, and she cannot stand to look bad. An important contract with one of her company's suppliers just came up for negotiation. Excited, Samantha thinks she will take the reins during the negotiation process, but her boss tells her she is off the negotiating team. Is her boss smart to keep such a hardliner of the case? Absolutely. Why? Because a study found that individuals who are concerned with appearing competent and successful in negotiations (that is, saving face) – can have a negative affect on the outcome of the negotiation process. Individuals who were more concerned with saving face were less likely to reach agreements than those who are overly competitive in negotiating negotiate to look good personally rather than to attain the best agreement for all concerned. So those who are able to check their egos at the door are able to negotiate better agreements – for themselves and for others, whether the bargaining situation is distributive or integrative.

**Gender differences in Negotiations:** do men and women negotiate differently? And does gender affect negotiation outcomes? The answer to the first question appears to be No. the answer to the second is a qualified Yes.

A popular stereotype held by many is that women are more cooperative and pleasant in negotiations than are men. The evidence doesn't support this belief. However, men have been found to negotiate better outcomes than women, although the difference is relatively small. It's been postulated that this difference might be due to men and women placing divergent values on

outcomes. “It is possible that a few hundred dollars more in salary or the corner office is less important to women than forming and maintaining an interpersonal relationship.

The belief that women are “nicer” than men in negotiations is probably due to confusing gender and the lower power typically held by women in most large organizations. The research indicates that low-power managers, regardless of gender, attempt to placate their opponents and to use softly persuasive tactics rather than direct confrontation and threats. In situations in which women and men have similar power bases, there shouldn’t be any significant differences in their negotiation styles. It’s interesting to note that when typical stereotypes are activated – that is, women are “nicer” and men are “tougher” – it becomes a self-fulfilling prophecy, reinforcing the stereotypical gender differences between male and female negotiators. For example, Maria may set lower aspirations and give in more readily when negotiating because she thinks, even subconsciously, that’s how women are expected to bargain. Similarly, Sunil may think he has to bargain aggressively because he believes that’s how men are expected to negotiate.

The evidence suggests those women’s attitudes toward negotiation and toward themselves as negotiators appear to be quite different from men’s. managerial women demonstrate less confidence in anticipation of negotiating and are less satisfied with their performance after the process is complete, even when their performance and the outcomes they achieve are similar to those for men. This latter conclusion suggests that women may unduly penalize themselves by failing to engage in negotiations when such action would be in their best interests.

**Cultural Differences in Negotiations:** Negotiating styles clearly vary across national cultures. The French like conflict. They frequently gain recognition and develop their reputations by thinking and acting against others. As a result, the French tend to take a long time in negotiating agreements and they aren’t overly concerned about whether their opponents like or dislike them. The Chinese also draw out negotiations but that’s because they believe negotiations never end. Just when you think you’ve pinned down every detail and reached a final solution with a Chinese executive, that executive might smile and start the process all over again. The Chinese – and the Japanese, too – negotiate to develop a relationship and a commitment to work together rather than to tie up every loose end. Compared to American negotiators, the Japanese communicate indirectly and adapt their behaviors to the situation. Americans are known around the world for their impatience and their desire to be liked. Astute negotiators from other countries often turn these characteristics to their advantage by dragging out negotiation and making friendship conditional on the final settlement. Exhibit 15-9 offers some insights into why American managers might have trouble in cross-cultural negotiations.

Exhibit 15-9	Why American manager Might Have Trouble in Cross-Cultural Negotiations
	<ul style="list-style-type: none"><li>• Italians, Germans, and French don’t soften up executives with praise before they criticize. Americans do, and to many Europeans this seems manipulative.</li><li>• Israelis, accustomed to fast-paced meetings, have no patience for American small talk.</li><li>• British executives often complain that their U.S. counterparts chatter too much.</li><li>• Indian executives are used to interrupting one another. When Americans listen</li></ul>

without asking for clarification or posing questions, Indians can feel the Americans aren't paying attention.

- Americans often mix their business and personal lives. They think nothing, for instance, about asking a colleague a question like, "How was your weekend?" in many cultures such a question is seen as intrusive because business and private lives are totally compartmentalized.

*Source: Adopted from L. Khosla, "You Say Tomato," Forges, Ma 21, 2001.*

The cultural context of the negotiation significantly influences the amount and type of preparation for bargaining, the relative emphasis on task versus interpersonal relationships, the tactics used, and even where the negotiation should be conducted to further illustrate some of these differences, let's look at two studies that compare the influence of culture on business negotiation.

The first study compared North Americans, Arabs, and Russians. Among the factors looked at were their negotiating style, how they responded to an opponent's arguments, their approach to making concessions, and how they handled negotiating deadlines. North Americans tried to persuade by relying on facts and appealing to logic. They countered opponents' arguments with objective facts. They made small concessions early in the negotiation to establish a relationship and usually reciprocated opponent's concessions. North American treated deadlines as very important. The Arabs tried to persuade by appealing to emotion. They countered opponent's arguments with subjective feelings. They made concessions throughout the bargaining process and almost always reciprocated opponents' concessions. Arabs approached deadlines very casually. The Russians based their arguments on asserted ideals. They made few, of any, concessions. Any concession offered by an opponent was viewed as a weakness and almost never reciprocated. Finally, the Russians tended to ignore deadlines.

The second study looked at verbal and nonverbal negotiation tactics exhibited by North Americans, Japanese, and Brazilians during half-hour bargaining sessions. Some of the differences were particularly interesting. For instance, the Brazilians on average said "No" 83 times, compared to 5 times for the Japanese and 9 times for the North Americans. The Japanese displayed more than 5 periods of silence lasting longer than 10 seconds during the 30 minute session. North Americans averaged 3.5 such periods; the Brazilians had none. The Japanese and North Americans interrupted their opponent about the same number of times, but the Brazilians interrupted 2.5 to 3 times more often than the North Americans and the Japanese. Finally, the Japanese and the North Americans had no physical contact with their opponents during negotiation except for handshaking, but the Brazilians touched each other almost five times every half hour.

Now that you know more about the different types of bargaining strategies, the negotiation process in general, and contemporary issues in negotiation, do you think you could negotiate with the best of them? Take the self-assessment to learn about your negotiating style.

## **International JOB**

### **Negotiating Across Cultures**

**OBTAINING A FAVORABLE OUTCOME IN A NEGOTIATION** – may in part depend on the cultural characteristics of your opponent. A study of negotiators in the United States, China, and Japan found that culture plays an important role in successful negotiation. The study that, overall, negotiators who had both a self-serving “egoistic” orientation and a high goal level fared the best overall compared to negotiators with an other-serving “prosocial” orientation and low goal level. In other words, the strategy combining a self-serving negotiation position, where one is focused only on maximizing one’s own outcomes, coupled with a strong desire to obtain the best outcomes, led to the most favorable negotiation results.

However, the degree to which this particular strategy resulted in better outcomes depended on the negotiating partner. The results showed that being self-serving and having a high negotiation goal level resulted in higher outcomes (in this case, profits) only when the negotiating opponent was other-serving. Negotiators from the United States are more likely to be self-serving and have high goal levels. In China and Japan, however, there is a greater likelihood that negotiators are other-serving and thus are more concerned with others outcomes. Consequently, negotiators from the United States are likely to obtain better outcomes for themselves when negotiation with individuals from China and Japan because American negotiators tend to be more concerned with their own outcomes, sometimes at the expense of the other party.

Though this study suggests that being self-serving can be beneficial in some situations, negotiators should be wary of being too self-serving. Though American negotiators may benefit from a self-serving negotiation position and a high goal level when negotiating with individuals from China or Japan, being too self-serving may result in damaged relationships, leading to less favorable outcomes in the long run.

*Source: Based on Y.Chen, E.A. Mannix, and T. Okumura “The importance of Who You Meet: Effects of Self-Versus Other-Concerns Among Negotiators in the United States, the People’s Republic of China, and Japan,” Journal of Experimental Social Psychology, January, 2003. pp. 1-15*

**Third-Party Negotiations:** To this point, we’ve discussed bargaining in terms of direct negotiations. Occasionally, however, individuals or groups representatives reach a stalemate and are unable to resolve their differences through direct negotiations. In such cases, they may turn to a third party to help them find a solution. There are four basic third-party roles: mediator, arbitrator, conciliator, and consultant.

## **JOB THE NEWS**

### **An Effective Negotiation Experience**

After Russ Berrie & Co. acquired the company that made Koosh Ball, it was Bernie Tenenbaum’s job to improve sales and profit. The balls were made in Asia so he began by flying to Hong Kong and meeting with the manufacturer. But before the meeting, he contacted another firm in Asia to get a competitive price. They offered to make the balls for 3 cents less per ball. Tenenbaum now knew there was room for cost cutting with his

primary manufacturer.

Upon arriving in Hong Kong, Tenenbaum and his executive team had a very elaborate dinner with the current manufacturer and his whole family to find out whether it was possible to get the price down. Tenenbaum says he had three goals at that dinner.

“First, we want to have a good relationship. Especially in China, your word really matters and the honor you give your partner means everything. If we had walked in and said,

‘I’ve second sourced your product and we can make it for 3 cents less,’ he might have walked away because we would’ve embarrassed him. Second, we wanted to let him know we were growing the business and there was an opportunity for him to make more products for us. Third, we had to ask for his help new never told him we needed to lower his price; we asked, was there anything he could do to help us. He understood what we meant, and he came back with a price that was a penny below the second source”

*Source: based on “How to Treat Your Adversary With Respect – and Win,” INC, August 2003, p.77*

**A mediator** is a neutral third party who facilitates a negotiated solution by using reasoning and persuasion, suggesting alternatives, and the like. Mediators are widely used in labor-management negotiations and in civil court disputes. The overall effectiveness of mediated negotiations is fairly impressive. The settlement rate is approximately 60 percent, with negotiator satisfaction at about 75 percent. But the situation is the key to whether or not mediation will succeed; the conflicting parties must be motivated to bargain and resolve their conflict. In addition, conflict intensity can’t be too high; mediation is most effective under moderate levels of conflict finally, perceptions of the mediator are important; to be effective, the mediator must be perceived as neutral and noncoercive.

**An arbitrator** is a third party with the authority to dictate an agreement. Arbitration can be voluntary (requested) or compulsory (forced on the parties by law of contract).

The authority of the arbitrator varies according to the rules set by the negotiators. For instance, the arbitrator might be limited to choosing one of the negotiator’s last offers or to suggesting an agreement point that is nonbinding, or free to choose and make any judgment he or she wishes.

The big plus of arbitration over mediation is that it always results in a settlement. Whether or not here is a negative side depends on how “heavy-handed” the arbitrator appears. If one party is left feeling overwhelmingly defeated, that party is certain to be dissatisfied and unlikely to graciously accept the arbitrator’s decision. Therefore, the conflict may resurface at a later time.

**A conciliator** is a trusted third party who provides an informal communication link between the negotiator and the opponent. This role was made famous by Robert Duval in the first Godfather film. As Don Corleone’s adopted son and a lawyer by training, Duval acted as an intermediary between the Corleone family and the other Mafioso families.

Conciliation is used extensively in international, labor, family, and community disputes. Comparing its effectiveness to mediation has proven difficult because the two overlap a great

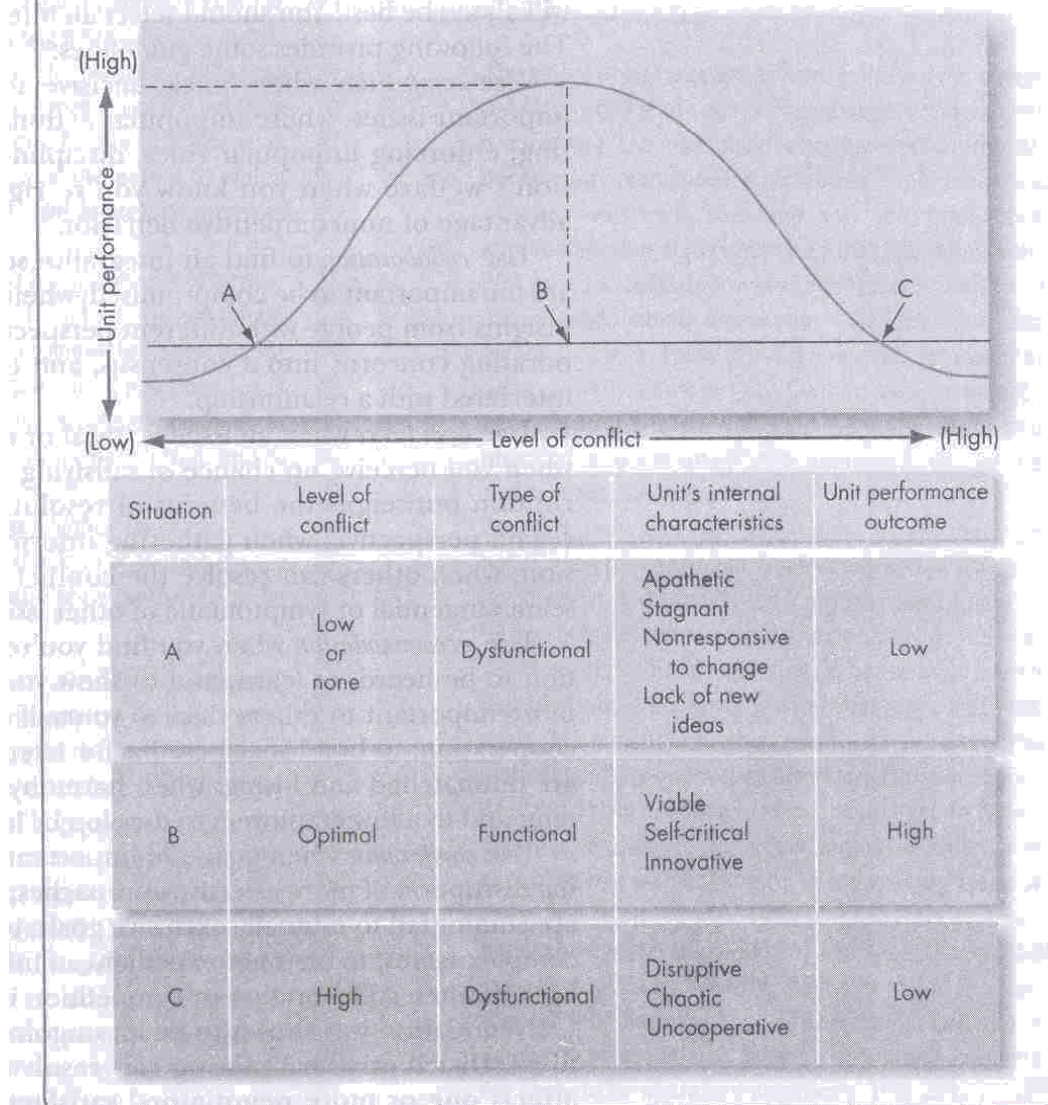
deal. In practice, conciliators typically act as more than mere communication conduits. They also engage in fact-finding, interpreting messages, and persuading disputants to develop agreements.

**A consultant** is a skilled and impartial third party who attempts to facilitate problem solving through communication and analysis, aided by a knowledge of conflict management. In contrast to the previous roles, the consultant's role is not to settle the issues, but, rather, to improve relations between the conflicting parties so that they can reach at settlement themselves. Instead of putting forward specific solutions, the consultant tries to help the parties learn to understand and work with each other. Therefore, this approach has a longer-term focus to build new and positive perceptions and attitudes between the conflicting parties.

## **Summary and Implications for Managers**

Many people automatically assume that conflict is related to lower group and organizational performance. This chapter has demonstrated that this assumption is frequently incorrect. Conflict can be either constructive or destructive to the functioning of a group or unit. As shown in Exhibit 15-10, level of conflict can be either too high or too low. Either extreme hinders performance. An optimal level is one at which there is enough conflict to prevent stagnation, stimulate creativity, allow tensions to be released, and initiate the seeds for change, yet not so much as to be disruptive or to deter coordination of activities.



**Exhibit 15-10** Conflict and Unit Performance

Inadequate or excessive levels of conflict can hinder the effectiveness of a group or an organization, resulting in reduced satisfaction of group members, increased absence and turnover rates, and, eventually, lower productivity. However, when conflict is at an optimal level, complacency and apathy should be minimized, motivation should be enhanced through the creation of a challenging and questioning environment with a vitality that makes work interesting, and there should be the amount of turnover needed to rid the organization of misfits and poor performers.

What advice can we give managers faced with excessive conflict and the need to reduce it? Don't assume there's one conflict-handling intention that will always be best! You should select an intention appropriate for the situation. The following provides some guidelines.

Use *collaboration* to find an integrative solution when both sets of concerns are too important to be compromised; when your objective is to learn; to merge insights from people with different perspectives; to gain commitment by incorporating concerns into a consensus; and to work through feelings that have interfered with a relationship.

Use *avoidance* when an issue is trivial or more important issues are pressing; when you perceive no chance of satisfying your concerns; when potential disruption outweighs the benefits of resolution; to let people cool down and regain perspective; when gathering information supersedes immediate decision; when others can resolve the conflict more effectively; and when issues seem tangential or symptomatic of other issues.

Use *accommodation* when you find you're wrong and to allow a better position to be heard, to learn, and to show your reasonableness; when issues are more important to others than to yourself and to satisfy others and maintain cooperation; to build social credits for later issues; to minimize loss when you are outmatched and losing; when harmony and stability are especially important; and to allow employees to develop by learning from mistakes.

Use *compromise* when goals are important but not worth the effort of potential disruption of more assertive approaches; when opponents with equal power are committed to mutually exclusive goals; to achieve temporary settlements to complex issues; to arrive at expedient solutions under time pressure; and as a backup when collaboration or competition is unsuccessful.

Negotiation was shown to be an ongoing activity in groups and organizations. Distributive bargaining can resolve disputes but it often negatively affects one or more negotiators' satisfaction because it focused on the short term and because it is confrontational. Integrative bargaining, in contrast, tends to provide outcomes that satisfy all parties and that build lasting relationships.

# **Data Analysis: An Introduction<sup>\*</sup>**

## **1. Purpose of Data Base**

Data is generated on regular basis in any administrative situation. We have to analyse data for various purposes such as monitoring, decision making and planning. Sometimes we may also like to generalise about a large population based upon data, which is generated on the basis of study of a sample of the same population. Depending upon the kind of analysis which is to be done and the kind of details which are required, different measures would be needed to arrive at the relevant statistics. Summarising raw data, drawing some inference and future production based upon past behaviour of the data set are some of areas where statistics is of immense help.

Summary statistics which are of a basic nature help in summarising and describing the pattern in a data set. These are also called 'Descriptive Statistics'. Starting with simple arrangements of data to classification of data in different interval classes, plotting as graphs and estimation of location and dispersion etc. of the data set are all part of descriptive statistics. In this note, a brief account of these methods is presented with the help of few examples. In addition a brief account of sampling distribution and correlation is also presented which shall be elaborated in a subsequent teaching note.

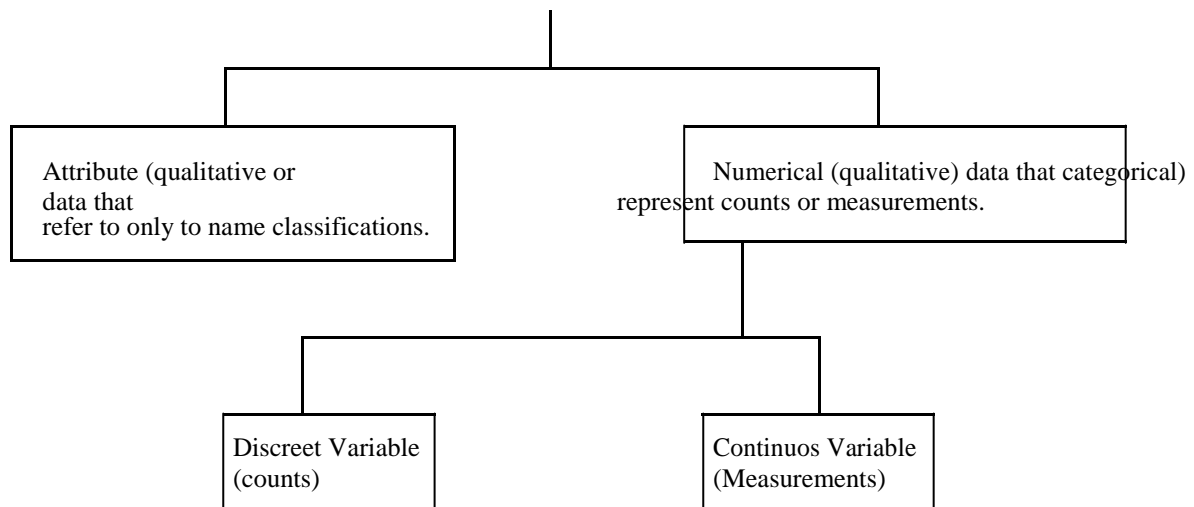
## **2. Kinds of Variables**

All the variables could be classified into three categories, dependent variable, independent variable and extraneous variable. The dependent variable is the variable to be estimated or to be studied. An independent variable is one that presumably exerts an influence on or explains variations in the dependent variable. For instance, if introduction of any kind of incentive decreases drop-outs in a class room setting, then incentives is called as independent variable and drop-outs is called as dependent variable. While plotting graphs the independent variable is plotted on X-axis and dependent variable on Y-axis. During research one may also observe other variables which affect the relationship between independent and dependent variable and those variables are called extraneous or environmental variation. For instance, in the previous example, providing better infrastructure or posting of a better teacher also led to the decrease in the drop-outs. In this case, these variables which are not the main variables are called extraneous variables. In research settings it is always to control extraneous variables. One of the ways to control the impact of these variables is by forming two situations: one in which the independent variable is introduced in a research setting (Experimental group) and second in which it is not introduced (Control group). A datum could be categorised as follows:

Data

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<sup>\*</sup> Prepared by Ajay Sinha, LBSNAA, Mussoorie.



A discreet variable is generally one that has a countable or finite number of distinct values. For instance, no. of students in a classroom is an example of discreet variable. A continuous variable is one that can assume any one of the continuous number of values along a line interval. A student's score in an achievement test could be an example of continuous variable:

The variables may take different forms. It could be qualitative or quantitative.

### 3. Method and Tools of Data Collection

The methods of collection of data depend upon the nature of data to be collected by the researcher and tools to be adopted. Some of the methods widely used in social science research are as follows:

- Examining historical and other records.
- Observing behaviour; process observation (it could be participative or non-participative).
- Interview method.
- Case history.
- Questionnaire method.
- Interview.
- PRA/RRA

Once a method of collecting data is identified, one or more of the following tools can be developed or used for collecting information.

- Diaries
- Questionnaires (structured or unstructured)
- Check lists
- Maps

- Rating scale
- Picture, Photos, drawing

#### 4. Organising Data Base

Once a large data base is prepared, there is necessity to organise the data into a compact form without obscuring essential facts. This purpose is achieved by grouping the arrayed data into a relatively small number of classes. Thus, a frequency distribution (or frequency table) groups data items into classes and then records the number of items that appear in each class.

Table 4.1

Table 4.2

The table 4.2 is called frequency distribution because of the frequency of occurrence of values in the various classes. While creating frequency distribution following precaution must be kept in mind. In formal presentations, the number of classes used to group the data generally varies from a minimum of 5 to a maximum of 18. Moreover, the actual number of classes used to depend on such factors as the number of observation being grouped, the purpose of the distribution and the arbitrary preferences of the analyst. Classes must be selected to conform to two rules. All data items from the smallest to the largest must be included, and each item (here the scores) must be assigned to only and only one class.

Whenever possible, the width of each class that is the class interval should be equal (here it is 10). Width can be estimated as following:

Of course, we have seen in Table 4.2

$$\text{Width} = 44/5 = 9$$

When there is a large no. of data, it is always convenient to arrange the data in an ascending or descending way (an array) and then go for frequency distribution.

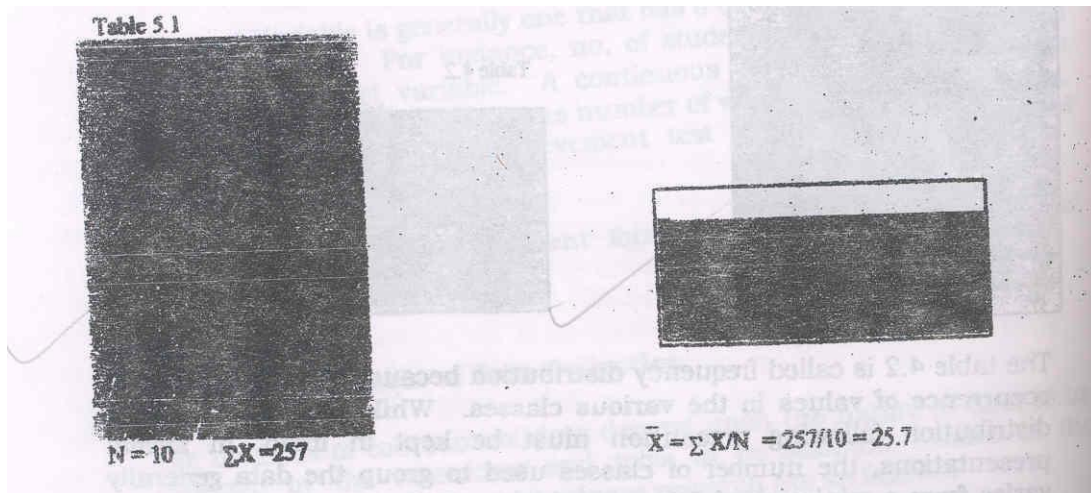
## 5. Treating Data Base

Mean, Median and Mode are measures of Central Tendency.

### Mean

When the data is ungrouped like in Table 4.1, it is always convenient to calculate average or arithmetic mean. For instance, lets see table 5.1.

Table 5.1



$N = 10$   $\Sigma X = 257$

$\bar{X} = \Sigma X/N = 257/10 = 25.7$

Table 5.1

When the data is grouped like in Table 4.2 the arithmetic mean can be calculated as follows:-

Table 5.2


$N = 10$   $\Sigma FM = 260$

$$\bar{X} = \Sigma FM/N = 260/10 = 26$$

### Median

The median occupies the middle position of an array of values. That is, half the data items fall below the median, and half are above that of the value. Now for forming array, the data must be put in an ascending or descending order before selecting the median value. Take for instance the Table 4.1 itself.

Table 5.3

Arrayed Data



### Mode

The mode, by definition, is the most commonly occurring value in a series. In the above example, 49 is the mode. If one wants to study the upper range of any score then mode is calculated.

### Measuring dispersion from the means

Three measures of dispersion are often computed from ungrouped or grouped data. These measures are the range, the mean absolute deviation and the standard deviation.

### Range

It is the simplest measure of dispersion, and it is merely the difference between the highest and lowest values in an array. If we look at Table 5.3 the range is  $49.5 - 44.7$

### Mean Absolute Deviation (MAD)

Lets copy the achievement scores of 10 students here and derive MAD and understand significance of it.

Table 5.4

Table 5.4

Achievement Score	Frequency
44.7	1
45.5	2
46.2	2
47.1	2
48.3	2
49.5	1

$\bar{x} = 257/10 = 25.7$



As is understood from the word, deviation denotes how much a score has deflected from the mean. Gross deflection from the mean divided by N (No. of sample) gives total deviation of data from the mean. Unlike the range, the MAD takes every observation into account and shows the average scatter of the data items about the mean; however, its still relatively simple to calculate and understand.

### The Standard Deviation (S.D.)

The SD is also used with the mean, and it is generally the most important and useful measure of dispersion. The SD again is a measure of how far away items in a data set are from their mean. Like the calculation of MAD, the computation of the SD is based on, and is representative of, the deviations of the individual data about the mean of those values. As the actual observations become more widely scattered about their mean, the SD becomes larger and larger. Of course, if all the items in a series are identical in value – that is, if there is no spread or scatter of values about the mean – the SD is zero. For ungrouped data, the SD would be calculated as follows:

Table 5.5


$$\bar{X} = 257/10 = 25.7$$

$$S.D. = \sqrt{\sum(X-\bar{X})^2/N-1} = \sqrt{2056.10/9} = 15.11$$

When data grouped in a frequency distribution must be processed, however, the primary measure of dispersion is the SD, which is used along with the mean for descriptive purposes. Computing the SD from a frequency distribution is similar to calculating the measure from ungrouped data. Let's take the previous table and calculate the SD.

Table 5.6

--



$$\bar{X} = \sum fm / N = 260 / 10 = 26$$

$$S.D. = \sqrt{N[\sum fm^2 - (\sum fm)^2 / N(N-1)]} = \sqrt{10[8450] - [260]^2 / 10(10-1)} = 13.70$$

### **What do we learn from SD**

We know that dispersion is the amount of spread or scatter that occurs in a data set. If, for example, the values in the set are clustered tightly about their mean, the measured dispersion – in the case the SD – is small. But if we have other data sets where the values become more and more scattered about their means, the SD for those sets become larger and larger. To summarise then, if a SD is small, the items in the data set are bunched about their mean, and if the SD is large the data items are widely scattered about their mean. In the nutshell we can conclude that:

- SD is the most frequently encountered measure of dispersion.
- It's a computed measure whose value is affected by the value of every observation in a series.
- Its value may be distorted too much by a relatively few extreme values.
- It can't be computed from an open ended distribution in the absence of additional information.

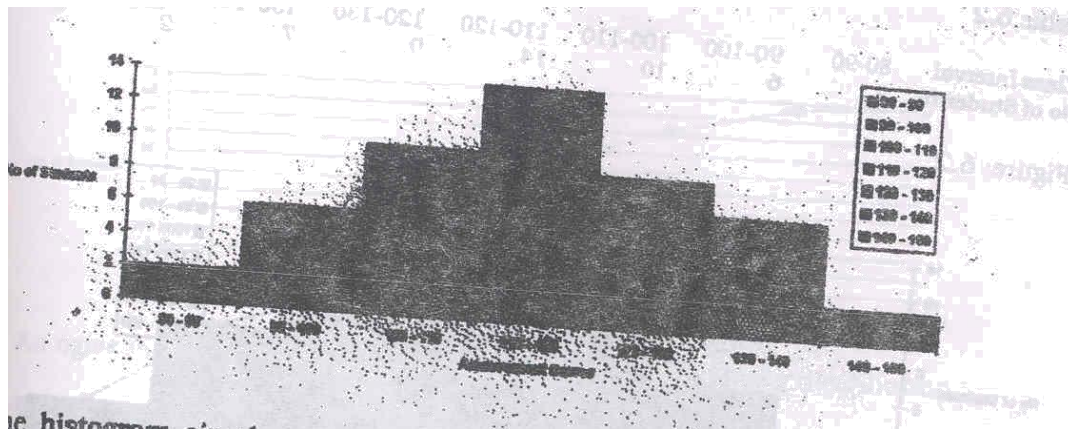
## **6. Graphic Representations of Frequency Distributions**

Having learnt to group data into a more compact form, the frequency distribution can be used for analysis, interpretation, and communication, purposes. It's often possible to prepare a graphic presentation of a frequency distribution to achieve one or more of these aims. Such a presentation of the data is more likely to get the attention of the casual reader, and it may show trends or relationships that might be over looked in a table. So, let's see how can graphic presentation of frequency distribution be prepared.

### **Histogram**

A histogram is a bar graph that can portray the data found in a frequency distribution. Given below is the graph indicating achievement scores of 50 students:

Table 6.1

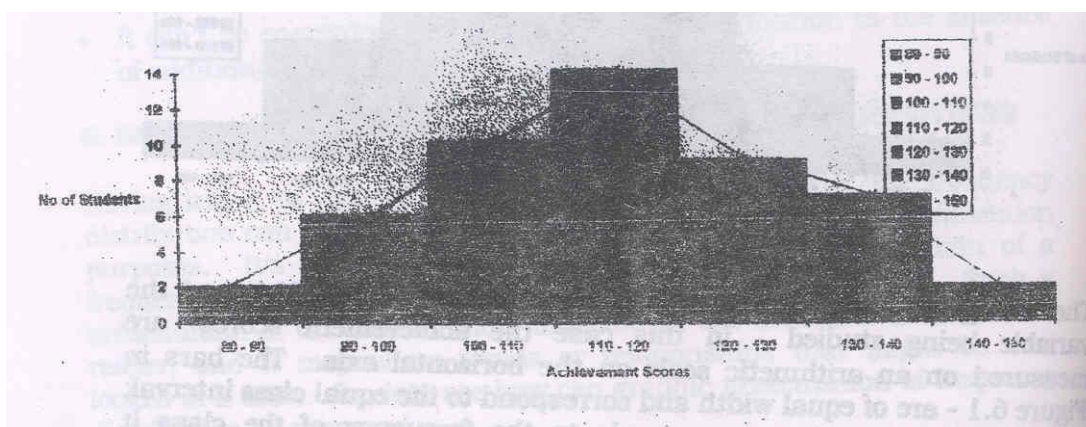


The histogram simply consists of a set of vertical bars. Value of the variable being studies – in this case the achievement scores – are measured on an arithmetic scale on the horizontal axis. The bars in Figure 6.1 – are of equal width and correspond to the equal class interval; the height of each bar corresponds to the frequency of the class it represents. Thus, the area of the bar above each class interval is proportional to the frequencies represented in that class. If unequal class interval were used in a frequency distribution, the areas of the bars above the various class intervals would still have to be proportional to the frequencies represented in the classes.

### Frequency Polygon

Another popular graphic tool is the frequency polygon. A frequency polygon is a line chart that depicts the data found in a frequency distribution. It is thus a graphic representation tool that may be used as an alternative to the histogram.

Table 6.2

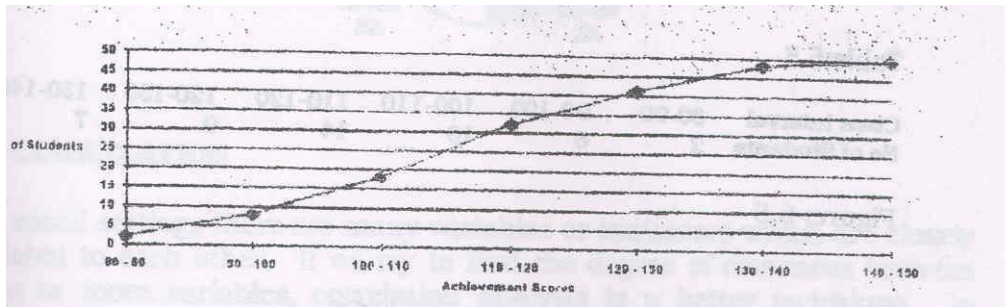


In the above figure, in order to plot frequency polygons points are placed at the mid-points of each class interval. These points are then connected by a series of straight lines. It's customary to close the polygon at both ends by placing points on the baseline half a class interval to the left of the first class and half a class interval to the right of the last class and then drawing lines from the points representing the frequencies in the first and last classes to there baseline points.

### A Cumulative – Frequency Graph

When we aim to find the number of data items that fall above or below a certain value rather than within a given interval a cumulative frequency graph may become handy. In such cases, a regular frequency distribution may be converted to a cumulative frequency distribution – one that adds the number of frequencies as shown in table 6.4.

Table 6.3

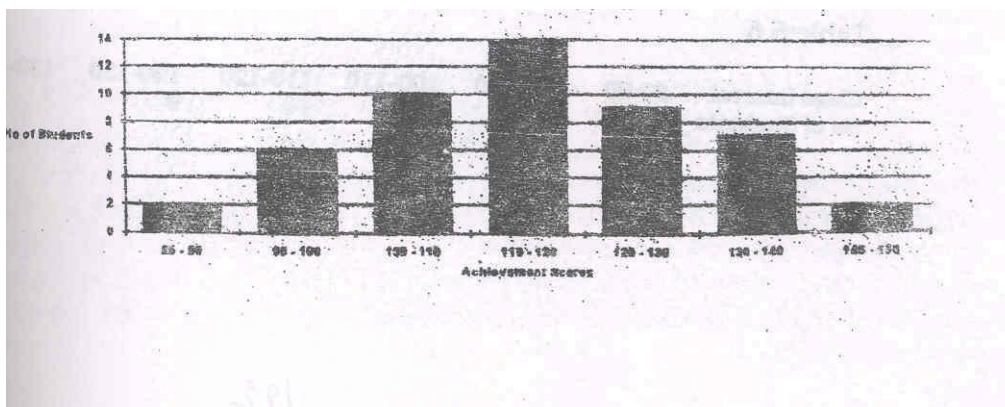


A graphic presentation of a cumulative frequency distribution.

### Bar Charts

A bar (or column) chart used the length of horizontal bars or height of vertical columns to represent quantities or percentages. As in the case of line charts, one scale on the bar chart measures values while the other may show time or some other variables. The bars typically start from zero point and are frequently used to show multiple comparison.

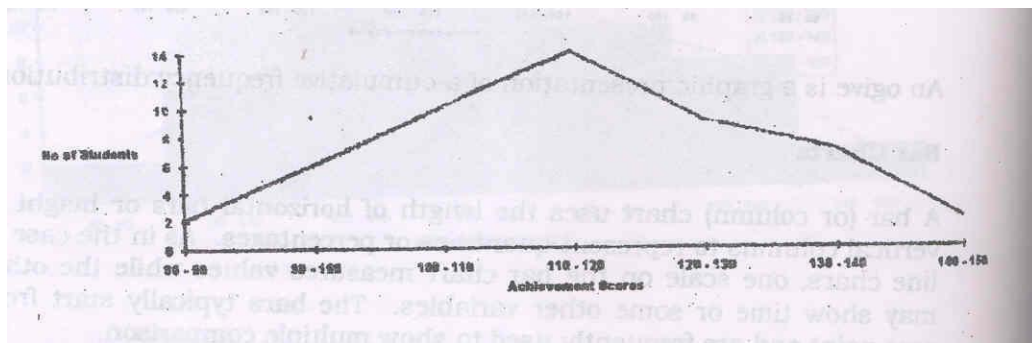
Table 6.4



## Line Charts

A line chart is one in which data points on a grid are connected by a continuous line to convey information. The vertical axis in a line chart is usually measured in quantities or percentages, while the horizontal axis is often measured in units of time (and then a line chart becomes a time series chart). Line charts don't present specific data as well as tables, but they are usually able to show relationships more clearly. Multiple series can also be depicted on line charts. The lines of the figures are all plotted against the same baseline.

Table 6.5



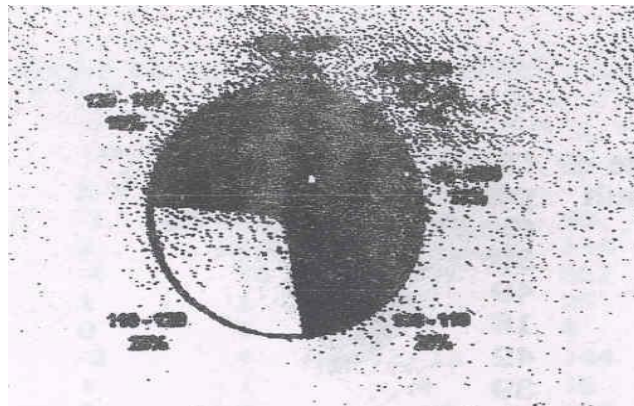
## Pie Charts

Pie-charts are circle divided into sectors, usually to show the components parts of a whole. Single circles can be used, or several pie charts can be drawn to compare changes in the component parts over time. It's a technique often used to separate a segment of the drawing from the rest of the pie to emphasize an important piece of information.

Table 6.6

Class Interval	80-90	90-100	100-110	110-120	120-130	130-140	140-150
No. of students	2	6	10	14	9	7	2

Figure: 6.6



## 7. Correlation

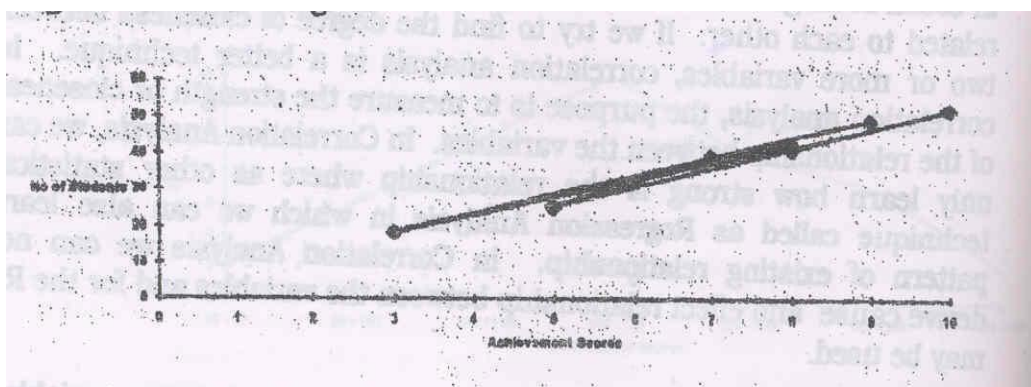
In social settings there are many variables or indicators which are closely related to each other. If we try to find the degree of closeness between two or more variables, correlation analysis is a better technique. In correlation analysis, the purpose is to measure the strength or closeness of the relationship between the variables. In Correlation Analysis, we can only learn how strong is the relationship where as other statistical technique called as Regression Analysis in which we can also learn pattern of existing relationship. In Correlation Analysis we can not derive cause and effect relationship between the variables and for the RA may be used.

In order to judge whether logical relationship exists between variables, we may plot a graph called scatter diagram.

Table: 7.1

Student	Aptitude test result	Class performance results
1.	6	30
2.	9	49
3.	3	18
4.	8	42
5.	7	39
6.	5	25
7.	8	41
8.	10	52

Figure: 7.1 Scatter diagram



Each point represents a study member for which we have an X (independent or explanatory) value and a Y (dependent or response) value. The scatter diagram helps us to see if there is a useful relationship between the two variables and secondly it also helps us to determine the type of equation to use to describe the relationship.

As one can see in Figure 7.1, the eight points form a path that can be approximated by a straight line. Thus, there appear to be a linear relationship between the variables. And a high degree of relationship is indicated by the fact that the points are all close to this straight – line part. There is a positive relationship between the variables – that is, as aptitude test scores increases, class performance result also increases. There could be another instances where increase in one variable may lead to decrease in another variable and this negative relationship is known as negative correlation. For instance, many studies have shown that increase in harsh punishment in a classroom has led to high drop-outs and hence they are negatively correlated. Value of correlation varies from 0-11. Zero indicates no correlation and +1 indicates perfect correlation.

Now let's see how to derive coefficient of correlation from the table given above.

Pupil	X	Y	X-X (dx)	dx <sup>2</sup>	Y-Y (dy)	dy <sup>2</sup>	dx dy
1.	6	30	-1	1	-7	49	7
2.	9	49	2	4	12	144	24
3.	3	18	-4	16	-19	361	76
4.	8	42	1	1	5	25	5
5.	7	39	0	0	2	4	0
6.	5	25	-2	4	-12	144	24
7.	8	41	1	1	4	16	4
8.	10	52	3	9	15	225	45
N = 8	Σx = 56	ΣY = 296		Σdx <sup>2</sup> = 36		Σdy <sup>2</sup> = 968	Σdx dy = 185

$$\bar{X} = 56/8 = 7$$

$$\bar{Y} = 296/8 = 37$$

$$r \text{ (coefficient of correlation)} = \Sigma dx dy / \sqrt{\Sigma dx^2 \Sigma dy^2} = 185 / \sqrt{36 \times 968} = 185/186.68 = 0.99$$

A coefficient of .99 indicates very high degree of correlation between the two variables. The formula used for calculating coefficient of correlation is called as Karl Person's coefficient of correlation which is widely used by the researchers.



# **Sampling Theory**

## **Samples and Populations**

### **1. Introduction**

To the non-statistician the word 'population' implies a group of people living in a certain area or country. A statistical population covers a much wider field and can apply to both people and objects. For example, a survey into the different types and amounts of beer drunk in the United Kingdom would not involve people who did not drink beer, and the statistical population would therefore consist of all people in the UK who drink beer. Where a packaging machine is filling bags with 1 lb of rice, the statistical population would be every bag of rice produced by the machine.

It is unlikely that time or money (usually both) would allow every member of a statistical population to be asked questions or tested. Samples are usually chosen and the test applied only to the numbers of the samples. With care as regards size and method of selection of the samples, the results can be extremely accurate. Sampling is absolutely essential in some forms of quality control (eg. Testing ammunition) where the test destroys the item under scrutiny.

The following methods of data collection may all incorporate some sampling:

#### **(a) Observation**

This involves watching or counting events as they happen and is used primarily for traffic censuses and in work study. Of all the methods listed, this is the one that will give the most accurate results. But in most cases, it would be uneconomical and in certain circumstances inapplicable. For example, it would be ridiculous to follow people around every day to find out how often they clean their teeth!

#### **(b) Telephone**

Asking questions by telephone is not usually a very good method, because people who possess telephones form a biased sample. Also it is possible to hang up on the questioner, and it is easier for someone to refuse to answer questions over the telephone than it is in a face-to-face interview. Time may well be wasted 'phoning people who are not at home'.

#### **(c) Interviews**

Informal interviewing can lead to poor results for several reasons. If several interviewers are used there may be:

- (i) discrepancies between the way they phrase the questions;
- (ii) different reactions evoked from the respondents (the people required to answer the questions);
- (iii) a difference in the way the interviewers record the replies.

These difficulties can be overcome by using a more formalised interview structure or a questionnaire (see next paragraph). There are, however, two further problems which cannot be solved so easily; namely, a bad memory or a deliberate desire to mislead on the part of the respondent. The interviewers must also take care not to put answers into the respondent's mouth.

#### **(d) Questionnaires**

These can be used either as a list of questions sent by post or as a method of producing an absolutely standard interview to be performed by many different field workers (normally called enumerators in the context).

The postal questionnaire suffers from the fact that it produces few replies, and those are of a biased nature. People will not normally make the effort to return a postal questionnaire (even with a pre-paid envelope) unless they have a particular interest in the subject of the survey or they are legally bound to do so. One solution has been for small gifts to be offered in return for a completed questionnaire. For example, a manufacturer of small cigars may include a questionnaire in every packet of five (possibly to investigate consumption or loyalty to the brand) and a free packet of cigars may be given on receipt of the completed form.

Use of questionnaires which are filled in by enumerators is the most satisfactory method of obtaining complete and unbiased results, providing that the enumerators have been carefully briefed on their task. They will know exactly how to phrase the questions, which order they are to be asked and can fill in the questionnaires more accurately than the respondents themselves.

#### **(e) Experimental Results**

This method of data collection is used more by the scientist than the businessman and is linked closely to the method of direct observation.

### **1.2 Design of a questionnaire**

You may have had personal experience of being stopped in the street and asked if you would mind answering some questions, for example, what television programmes you watch. You may even have been one of the minority who filled in and returned a postal questionnaire. If so, try to remember to what extent the questionnaire with which you were confronted met with the requirements.



The drafting of a questionnaire is one of the most difficult parts of the whole enquiry and the following are guidelines for the design of a good questionnaire:

- (a) questions must be easily understood – keep them as simple as possible;
- (b) questions should not be ambiguous;
- (c) questions should be phrased to allow a concise answer. The best kind of questions are similar to those used in multiple choice computer marked exams where the answer merely requires a tick in the correct box, e.g.:
  - (i) male ☐
  - (ii) female ☐
  - (iii) don't know ☐
- (d) questions should not require the respondent to perform calculations or decide upon classification;
- (e) questions should obviously be relevant to the enquiry, although sometimes one questionnaire may be used for two separate enquiries;
- (f) questions must not be in such a form that the answers will be biased. This involves excluding personal, offensive or leading questions. An example of a leading question might be: 'Don't you agree that all sensible people use Gleaming Gnashers toothpaste?' expecting the answer 'yes';
- (g) vague words such as 'large', 'small' or 'overweight' should be avoided. If people are asked whether they earn a 'large' salary then different people will have different ideas about what constitutes a large salary;
- (h) the questions should be asked in logical sequence;
- (i) the questionnaire should be as short as possible.

### **1.3 Pilot Studies**

An important aspect of any survey by questionnaire is the ability of the questionnaire to elicit the information required. Rather than going ahead with such a survey immediately, it is often advantageous to try out the questionnaire on a small or pilot sample. This will show whether the questions are clearly understood by the respondents. If there are any difficulties these can then be corrected prior to the main survey.

## **2. Sampling Methods**

## **2.1 Introduction**

Much emphasis has already been placed on the need for samples in statistical work and in following paragraphs we describe the most common methods of choosing a sample from a statistical population. Important advantages and disadvantages are pointed out, but there is no one method that is better than the rest under all circumstances. The situation, including time and money available, must be assessed before the best method of selecting a sample can be chosen.

## **2.2 Sampling frame**

This is a list or collection of all members of a population. Probability sampling methods require a sampling frame, so that, without such a frame the choice of methods is restricted to non-probability or judgmental methods.

## **2.3 Statistical laws**

There are two statistical laws which express formally what you probably know intuitively about samples and sample results.

- (a) The law of statistical regularity states that a reasonably large sample selected at random from a large population will, on average, be representative of that population. The key phrases here are:
  - (i) 'large population';
  - (ii) 'reasonably large sample' (explained in more detail when the theory is covered later); and
  - (iii) 'selected at random'.
- (b) The law of inertia of large numbers states that, on average, the larger the sample size, the better the result.

When a sample is chosen, there is always the chance that a freak result may be obtained but the likelihood of this happening is reduced as the sample size increases (if the sample is chosen at random).

## **2.4 Simple random sampling**

The word random in this context does not mean haphazard. It refers to a definite method of selection aimed at eliminating bias as far as possible. A random sample is a sample selected in such a way that every member of the population has an equal chance of being selected. The simplest example of pure random sampling is a raffle or lottery. Thus to take a random sample of the population of the UK, the name of each resident would have



of items is required from a population of items, every 10<sup>th</sup> one will be selected. Provided that there are no characteristics in the population which recur every 10th item, the sample will be unbiased; indeed this may be thought of simply as a short cut (the population does not need to be numbered) method of producing a random sample.

The following four methods may be used in conjunction with either of the previous two in an attempt to produce an unbiased result with less time, money and effort.

## **2.6 Multi-stage Sampling**

Surveys covering the whole UK are frequently required but, as you can imagine, simple random sampling or even stratified sampling will not give an easy solution. Where the population is very spread out, particularly geographically, simple random sampling will result in a dispersed sample. As an enumerator you would probably object to doing a grand tour of the country, asking questions of only one particular person in each place you visited. Some method is needed to 'narrow the field down' to a smaller area, with the resultant cost saving. Multi-stage sampling attempts to do this without adversely affecting the 'randomness' of the result.

The first step is to divide the population into manageable, convenient groups or areas. For a geographical population the areas may be rating authorities, whereas an auditor may divide a population of invoices into months or weeks. Either one or several areas are then selected at random and the enumerators will work purely on the items in these groups. The process may be taken one (or several) stages further to reduce the sample area to more manageable proportions. For example, having chosen a random sample of rating authorities, each one may be divided into political wards or streets or households. Finally, a simple random or systematic sample will be chosen.

## **2.7 Cluster Sampling**

It is easy to confuse this with multi-stage sampling as the first step appears to be identical. The important difference is that cluster sampling is used when the population has not been listed and it is the only way to obtain a sample. It is not used primarily as a means of cutting costs.

As an example, suppose that a survey is to be done on the proportion of elm trees attacked by Dutch elm disease in the UK. Obviously there is no list of the complete population of elm trees neither would it be possible to try and cover the whole population. To use cluster sampling in this case, the population could be divided into small 'clusters' by drawing a grid over the map for the country and choosing, at random, a few of these clusters for observation, each cluster being a small area. The investigators will then be asked to find as many elm trees as possible within each area and note how many of them are diseased.

## **2.8 Stratified Sampling**

It is possible, in some instances, to improve on simple random sampling by stratification of the population. This is particularly true where the population is heterogeneous (i.e., made up of dissimilar groups) and the population can be stratified into homogeneous (i.e., similar) classes. These classes should define mutually exclusive categories.

Suppose that a bakery makes three different types of loaf, large small and cottage. If a simple random sample were taken of the daily output, it would be possible, although unlikely, for it to include only one type of loaf. Stratification of the population before sampling can prevent this and, if carried out as described below, can produce a sample which is truly representative of the population.

Assume that the bakery's output is 50% large, 40% small and 10% cottage loaves. The different loaves divide the population into three strata. Now if a sample of 50 loaves is required it should contain 25 large, 20 small and 5 cottage, thus ensuring that the proportions of each type of loaf in the population are reflected in the sample. Within these constraints, however, selection should be made on a random basis.

## 2.9 Sequential Sampling

In paragraph 2.3(b) the law of inertia of large numbers stated that, an average, large samples will give better results than small samples, but obviously more time and effort will go into selecting a large sample than a small one. Practical situations, such as quality control on a manufacturing process, require that the sampling is done quickly and efficiently, which precludes taking very large samples all the time. Sequential sampling offers a compromise solution to the problem by first selecting a relatively small sample and gradually building the sample size up by taking successive small samples and using the cumulative result. However, as soon as a definite result has been produced the sampling will stop. This is best illustrated by a numerical example where the quality controller is testing for defective items by taking successive sample of 50 items.

Sample No.	Sample Size	Cumulative Sample Size	Stop sampling if the number of defectives in sample is less than or equal to	
			OR Greater than or equal to	
1	50	50	0	2
2	50	100	1	4
3	50	150	2	5
4	50	200	3	6
5	50	250	3	7

**(All figures are purely imaginary – don't try to derive them.)**

This table could theoretically go on for every, but in practice, the controller will soon come to a point where the cumulative results show a number of defectives outside the limits given. The sampling has then produced a definite result that either the process is

well under control (very few defectives) and may continue, or that the process is producing too many defectives and must be stopped for investigation.

Thus it is only if the first sample of 50 does not produce a definite result (i.e., it contains exactly one defective) that the sampling will continue.

## **2.10 Non-random Sampling**

The previous paragraphs have been concerned with methods of random sampling, basically simple random sampling with several variations and refinements. Statisticians prefer to deal with random sampling because (as you will see in later sessions) the sampling error can be measured and therefore the results can be interpreted.

Unfortunately occasions often arise when the selection of a random sample is not feasible. This may be because:

- (a) it would be too costly;
- (b) it would take too long; or
- (c) all the items in the population are not known.

For these reasons the following three methods of non-random sampling are used, particularly in the field of market research.

## **2.11 Judgment Sampling**

In this case an expert, or team of experts, uses personal judgment to select what is a truly representative sample. It certainly cannot be called a random sample as it involves human judgment, which could involve bias.

On the other hand, the sampling process does not require any numbering of the population or random number tables. It can be done more quickly and economically than random sampling and, if carried out sensibly, can produce very good results.

## **2.12 Quota Sampling**

This is the method most often used in market research where the data is collected by an enumerator armed with questionnaires. To avoid the expense of having to 'track down' specific people chosen by random sampling methods, the enumerators are given a quota of say 400 people, and are told to interview all the people they can until their quota has been met. Such a quota is nearly always divided up into different types of people with sub quotas for each type. For example, out of a quota of 400, the enumerator may be told to interview 250 working wives, 100 non-working wives and 50 unmarried women, and within each of these three classes to have 50% who smoke and 50% non-smokers.

The main advantage of this method is that, if a respondent refuses to answer the questions for any reason, the interviewer will just look for another person in the same category.

With true random sampling, once a sample item has been decided upon, it must be used. Any substitution results in a non-random sample.

### **2.13 Convenience Sampling**

As the name implies, the most important factor here is the ease of selecting the sample. No effort is made to introduce any element of randomness. An example of this is the quality controller who takes the first 20 items off the production line as his sample, a dangerous procedure as any fault in the process occurring after this could remain unnoticed until the next sample is taken.

For most purposes, this sampling method is simply not good enough but, for some pilot surveys, the great savings in cost, time and effort outweigh the disadvantages. The aim of a pilot survey could be to establish the most satisfactory form of questionnaire to be used in the actual survey. Since the actual sample results would not be used it does not matter that the sample was not selected at random.

### **2.14 Sampling with probability proportional to Size**

This is a method of sampling in the first or second stage of a multi-stage sample. It is designed to ensure that the probability of selection of a sub-unit is proportional to the number of elements of the population in the sub-unit.

## Sampling and Sampling Distributions

1. There are many situations in administration and management where we are interested in making deductions about the entire population based upon the study of a sample either because of the large size of population or because of time constraints. The problems of this nature can broadly be classified as problems of statistical inferences. For example, we may be interested in estimating the average per capita income of households in a block. However, due to large amount of effort involved we would prefer a quick method of arriving at an estimate on the basis of a sample.
2. Before we analyse the methods for taking a sample and then using the sample statistics to estimate the population, it would be useful to describe certain definitions.

As you know we can describe a population on the basis of its mean and standard deviation. When these terms describe the characteristics of a population they are called parameters and when they describe the characteristics of a sample they are called statistics. We use different notations to denote statistics and parameters as indicated in the following table:

**Table A**

### Differences Between Population and Samples

	<b>Population</b>	<b>Sample</b>
Definition	Collection of items being considered.	Part or portion of the population Chosen for study.
Characteristics	‘Parameters’	‘Statistics’
Symbols	Population size – N	Sample Size – n
	Population mean - $\mu$	Sample mean - $\bar{X}$
	Population standard deviation - $\sigma$	Sample standard deviation - s

### 3. Methods of Sampling

There are two methods of selecting samples from populations – nonrandom or judgement sampling and random or probability sampling. In probability sampling, all the items in the population have a chance of being chosen in the sample. In judgement sampling, personal knowledge and opinion are used to identify those items from the population that are to be included in the sample. A sample selected by judgement sampling is based on



someone's expertise regarding the population. Although, there is merit in taking a sample on the basis of judgement since we cannot validate the results there is likelihood that the judgement sample may become non-representative and conclusions based on such a sample may be erroneous. In many case therefore, judgement sampling is used to clarify issues regarding population to decide how to take a random sample later. As far as the random sampling is concerned the main techniques are:

1. Simple random sampling
2. Systematic sampling
3. Stratified sampling
4. Cluster sampling

These techniques have been described in a detailed note circulated by Dr. H.C. Pokhriyal titled "Answering the Questions: Some Steps in Research Methodology for Administrators".

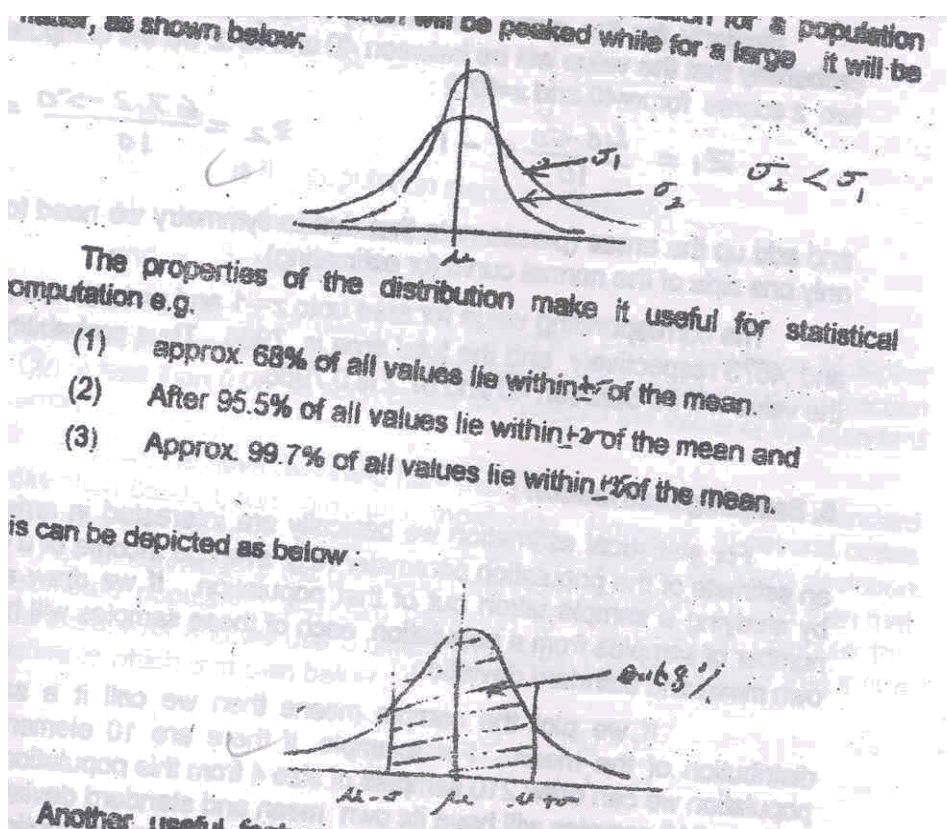
Systematic sampling, stratified sampling and cluster sampling attempt to approximate simple random sampling. All are methods that have been developed for their precision, economy, or physical ease. The principles of simple random sampling are the foundation of statistical inference – the process of making inferences about populations from information contained in samples. However before we take up the issues relating to estimation it would be useful to understand the normal distribution.

#### **4. Normal Distribution**

Normal distribution is a very important continuous probability distribution and is also often called Gaussian distribution. Its importance in statistics is partly because many observed phenomenon follow a normal distribution and also because of its use in statistical inference. The characteristics of a normal distribution are:

- (1) The curve has a single peak
- (2) The mean lies at the centre
- (3) Because of its symmetrical nature the mean, median and mode are equal
- (4) The two tails extend to infinity

To define a particular normal curve we need to specify its mean  $\mu$  and its standard deviation ( $\sigma$ ). The shape of the normal distribution depends on its standard deviation. Normal distribution for a population with smaller standard deviation will be peaked while for a large it will be flatter, as shown below:



The properties of the distribution make it useful for statistical computation e.g.

- (1) Approx. 68% of all values lie within  $\pm \sigma$  of the mean.
- (2) After 95.5% of all values lie within  $\pm \sigma$  of the mean and
- (3) Approx. 99.7% of all values lie within  $\pm \sigma$  of the mean.

This can be depicted as below:

Another useful feature is that any normal distribution may be reduced to a standard normal distribution and then we can use the standard normal probability distribution tables (enclosed) to estimate the probabilities of the random variable lying in different value ranges. This is accomplished by using a normal deviate (called Z) defined as below:

$$Z = \frac{X - \mu}{\sigma}$$

If we plot distribution of Z it will have a mean of 0 and standard deviation of 1. Thus any normal distribution may be converted to standard normal deviate and then standard normal tables can be used. For example, if we have a normal distribution with mean = 50 and standard

deviation of 10 and we want to estimate the probability that the value of this variable will exceed 65. To find this out we first compute, the corresponding z value:

$$Z = \frac{65 - 50}{10} = 1.5$$

If we need the standard table the area to the right of mean upto  $z = 1.5$  is given in the ascend column as .4332. Since we are interested in values exceeding this score we subtract this area from 0.5 (which is the total area to the right of the mean) and we obtain .8888 as the probability that the value will exceed  $z = 1.5$  or  $x = 65$ .

Similarly for the same distribution, if we wanted to find out the probability that the value will be between 40 and 67.2 we will compute the two z scores for  $x = 40$  and  $x = 67.2$ :

$$Z_1 = \frac{40 - 50}{10} = -1$$

$$Z_2 = \frac{67.2 - 50}{10} = 1.72$$

and add up the areas (please note that due to symmetry we need to use only one side of the normal curve for estimating).

The corresponding value for area upto  $z = 1$  and  $z = 1.72$  are .3413 and .4573 respectively and the total area is .7986. Thus probability that the value will be between 40 and 67.2 is 0.7986.

## 5. Sampling distribution

For statistical estimation we basically are interested in arriving at an estimate of the population parameter (e.g. average income of a group) by studying a sample taken out of that population. If we draw a large number of samples from a population, each of these samples will have its own mean and standard deviation.

If we plot the sample means then we call it a sampling distribution of the mean. For example, if there are 10 elements in a population we can draw 210 samples of size 4 from this population. Each of these 210 samples will have its own mean and standard deviation and if we plot the sample means we will obtain the sampling distribution which will have a mean and standard deviation. As we are averaging 4 observations and then taking standard deviation we would expect the standard deviation of this sampling distribution to be lower than that of the original population.

We are helped in our estimation exercise by some useful properties of these sampling distributions:

- (1) The central limit theorem suggests that the sampling distribution of the mean will approach normally regardless of the shape of the population distribution. Generally sample sizes above 30 are good enough to assume that the distribution will be normal. This properly permits us to use sample statistics to make

inferences about population parameters without knowing anything about the shape of the frequency distribution of the population.

- (2) The mean of the sampling distribution  $\sigma_{\mu/x}$  is equal to the population mean, regardless of the sample size.
- (3) Standard deviation of the sampling distribution of the mean is also called standard error of the mean, it is so called as this error is arising on account of the chance that a particular sample may be picked up out of a large number of possible samples. As standard error decreases the sample means will cluster closely around the mean and if standard error is large the sample means will be more dispersed around the mean. The standard error ( $\sigma/x$ ) is computed as:

$$\sigma/x = \frac{\sigma}{\sqrt{n}} \sqrt{\frac{N-n}{N-1}}$$

Where:

$\sigma$  is the population standard deviation  
 $N$  is the population size  
 and  $n$  is the sample size

In the above formula  $\sqrt{\frac{N-n}{N-1}}$  is called the Finite Population Multiplier which

approximates 1 for large populations and when sampling fraction ( $n/N$ ) is less than 0.05. In such cases we use  $\sigma/\sqrt{n}$  as the value of the standard error.

Also, we have assumed here that we know the population standard deviation based upon some past knowledge. However, in several cases this may not be true. In such cases, we use sample standard deviation ( $\hat{\sigma}$ ) as an estimate for the population standard deviation ( $\sigma$ ) and then that estimated population standard deviation ( $\hat{\sigma}$ ) is used to compute the standard error and we use a different notation ( $\sigma/x$ ) to indicate that it is a estimate which is shown below:

$$(\sigma/x) = \hat{\sigma}/n \sqrt{\frac{N-n}{N-1}}$$

## 6. Estimation

As discussed earlier, our main purpose behind studying a sample statistics is to estimate a population parameter. For example, if we take a sample of 40 OTs and if the average age of OTs in this sample is 24.2 years, what can be said about the average age of OTs for the entire batch? Such problems fall into the category of statistical inference.

### 6.1 Point Estimation

A point estimate is a single number that is used to estimate an unknown population parameters. So, based on sample mean of 24.2 years if we conclude that the average age of the entire batch of 1996 FC is 24.2 years it will be a point estimate. It will be a useful exercise but the problem with the point estimates is that they will be either right or wrong, as they do not specify the error that might be involved in the estimate. As discussed earlier, ultimately a sample will have its own mean which only in few cases will be equal to the population mean. And we would be interested in knowing what could be the likely error in our estimation or to put it differently what is the confidence we can attach to this estimate. For this we have to determine interval estimates of population parameter.

## 6.2 Interval Estimates

An interval estimate describes a range of values within which a population parameter is likely to lie.

Our earlier discussion regarding distribution of sample means will help us in estimating this interval. As we know the sample means will be distributed normally with a mean equal to population mean and standard deviation (standard error) of  $(\sigma/\sqrt{n})$  (for large population). Now, any mean can be described in terms of its distance from the mean of the sampling distribution. We also know that for a normal distribution an interval of  $\pm\sigma$  around mean will have an area of 0.68 i.e. if we construct this interval around mean it will contain 68% of the sample means. In other words, if we construct intervals of  $\pm\sigma$  around all sample means 68% of them will contain the population mean or in other words we can say that if we take a sample and we construct a  $\pm\sigma$  interval around its mean we can be 68% confident that population mean will lie in this interval. Similarly knowing the properties of normal distribution we can further say that our confidence level is 95.5% that an interval of  $\pm\sigma$  around the sample mean will contain the population mean. We can now define the two terms we have used here:

- (a) Confidence interval is the range of estimates we are making.
- (b) Confidence level is the probability that we associate with a confidence interval that it will contain the population mean.

For example, if in the case discussed above, standard error of the sample mean is 0.7 years then we can estimate the following intervals with associated confidence levels:

$$23.5 \leq \text{Population mean} \leq 24.9 \text{ with 68\% confidence}$$

$$22.8 \leq \text{Population mean} \leq 25.6 \text{ with 95.5\% confidence etc.}$$

A detailed example would further clarify the above:

Suppose we have taken a sample of 50 out of 700 families living in a village and following results are obtained:

N	=	700
n	=	50
x	=	Rs. 4800 = mean income of the sample
s	=	Rs. 950 = Sample standard deviation

We want to construct a 90% confidence interval for the mean income of the all families in the village. Then:

- (a) Since we don't know the population standard deviation, we use sample standard deviation to estimate the population standard deviation or

$$\sigma = S = 950$$

- (b) Standard error of the sample means will be

$$\frac{\sigma}{\sqrt{x}} = \sigma \sqrt{\frac{N-n}{N-1}} = \frac{950}{\sqrt{50}} \sqrt{\frac{700-50}{700-1}} = 129.57$$

- (c) Since we are interested in 90% confidence level and since an interval of 1.64 around mean contains 90% observation our interval will be:

$$\begin{aligned} \text{Upper limit} &= \mu/x + 1.64 \sigma \sqrt{x} = 4800 + 1.64 \times 129.57 \\ &= 5012.50 \end{aligned}$$

$$\begin{aligned} \text{Lower limit} &= \mu/x - 1.64 \sigma \sqrt{x} \\ &= 4800 - 1.64 \times 129.57 \\ &= 4587.50 \end{aligned}$$

That is, we can say with 90% confidence that the income of all families residing in the village is between Rs. 5012.50 and Rs. 4587.50.

## 7. Some Exercises

- (1) The manager of General Electric's lightbulb division must estimate the average number of hours that a lightbulb made by each lightbulb machine will last. A sample of 35 lightbulbs was selected from machine A and the average burning time was 842 hours. The standard deviation of burning time is known to be 25 hours.
  - (a) Compute the standard error of the mean.
  - (b) Construct a 90 percent confidence interval for the true population mean.
- (2) Upon collecting a sample of 200 from a population with known standard deviation of 5.23, the mean is found to be 76.3.

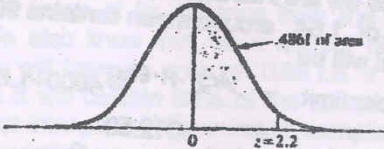
- (a) Find a 90 percent confidence interval for the mean.
  - (b) Find a 98 percent confidence interval for the mean.
- (3) Ranjan, an overzealous officer trainee, has just completed a first draft of his 150 page term paper. Ranjan has typed this paper himself and is interested in knowing the average number of typographical errors per page, but does not want to read the whole paper. Knowing a little bit about business statistics, Ranjan selected 40 pages at random to read and found that the average number of typos per page was 4.3 while the sample standard deviation was 1.2 typos per page.
- (4)
- (a) calculate the estimated standard error of the mean.
  - (b) Construct a 90% confidence interval for the true mean.

## Tables

**TABLE A Standard Normal Distribution**

**Tables**

**TABLE A Standard Normal Distribution\***



Values in the table correspond to the shaded area in the figure: the relative frequency (or probability) of scores between the mean and a particular  $z$  score, for normal distributions.

$z$	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
0.0	.0000	.0040	.0080	.0120	.0160	.0199	.0239	.0279	.0319	.0359
0.1	.0398	.0438	.0478	.0517	.0557	.0596	.0636	.0675	.0714	.0753
0.2	.0793	.0832	.0871	.0910	.0948	.0987	.1026	.1064	.1103	.1141
0.3	.1179	.1217	.1255	.1293	.1331	.1368	.1406	.1443	.1480	.1518
0.4	.1554	.1591	.1628	.1664	.1700	.1736	.1772	.1808	.1844	.1879
0.5	.1915	.1950	.1985	.2019	.2054	.2088	.2123	.2157	.2190	.2224
0.6	.2257	.2291	.2324	.2357	.2389	.2422	.2454	.2486	.2517	.2549
0.7	.2580	.2611	.2642	.2673	.2704	.2734	.2764	.2794	.2823	.2852
0.8	.2881	.2910	.2939	.2967	.2995	.3023	.3051	.3078	.3106	.3133
0.9	.3159	.3186	.3212	.3238	.3264	.3289	.3315	.3340	.3365	.3389
1.0	.3413	.3438	.3461	.3485	.3508	.3531	.3554	.3577	.3599	.3621
1.1	.3643	.3665	.3686	.3708	.3729	.3749	.3770	.3790	.3810	.3830
1.2	.3849	.3869	.3888	.3907	.3925	.3944	.3962	.3980	.3997	.4015
1.3	.4032	.4049	.4066	.4082	.4099	.4115	.4131	.4147	.4162	.4177
1.4	.4192	.4207	.4222	.4236	.4251	.4265	.4279	.4292	.4306	.4319
1.5	.4332	.4345	.4357	.4370	.4382	.4394	.4406	.4418	.4429	.4441
1.6	.4452	.4463	.4474	.4484	.4495	.4505	.4515	.4525	.4535	.4545
1.7	.4554	.4564	.4573	.4582	.4591	.4599	.4608	.4616	.4625	.4633
1.8	.4641	.4649	.4656	.4664	.4671	.4678	.4686	.4693	.4699	.4706
1.9	.4713	.4719	.4726	.4732	.4738	.4744	.4750	.4756	.4761	.4767
2.0	.4772	.4778	.4783	.4788	.4793	.4798	.4803	.4808	.4812	.4817
2.1	.4821	.4826	.4830	.4834	.4838	.4842	.4846	.4850	.4854	.4857
2.2	.4861	.4864	.4868	.4871	.4875	.4878	.4881	.4884	.4887	.4890
2.3	.4893	.4896	.4898	.4901	.4904	.4906	.4909	.4911	.4913	.4916
2.4	.4918	.4920	.4922	.4925	.4927	.4929	.4931	.4932	.4934	.4936
2.5	.4938	.4940	.4941	.4943	.4945	.4946	.4948	.4949	.4951	.4952
2.6	.4953	.4955	.4956	.4957	.4959	.4960	.4961	.4962	.4963	.4964
2.7	.4965	.4966	.4967	.4968	.4969	.4970	.4971	.4972	.4973	.4974
2.8	.4974	.4975	.4976	.4977	.4977	.4978	.4979	.4979	.4980	.4981
2.9	.4981	.4982	.4982	.4983	.4984	.4984	.4985	.4985	.4986	.4986
3.0	.4987	.4987	.4987	.4988	.4988	.4989	.4989	.4989	.4990	.4990

\* From Robert D. Mason, *Elements of Statistics*, 4th ed., p. 307. Reprinted by permission of Prentice-Hall, Inc., Englewood Cliffs, New Jersey.

## Some References

1. Lapin L. Lawrence, Business Statistics
2. Levin I. Richard, Statistics for Management
3. Levin I. Richard and others, Quantitative Approaches to Management
4. Taro Yamane, Statistics: An introductory analysis



## Understanding Financial Statements: An Introduction

Financial Statements record the performance of your business and allow you to diagnose its strengths and weaknesses by providing a written summary of financial activities. There are two primary financial statements: the Balance Sheet and the Statement of Income.

### The Balance Sheet

The Balance Sheet provides a picture of the financial health of a business at a given moment, usually at the close of an accounting period. It lists in detail those material and intangible items the business owns (known as its assets) and what money the business owes, either to its creditors (liabilities) or to its owners (shareholders' equity or net worth of the business).

Assets include not only cash, merchandise inventory, land, buildings, equipment, machinery, furniture, patents, trademarks, and the like, but also money due from individuals or other businesses (known as accounts or notes receivable).

Liabilities are funds acquired for a business through loans or the sale of property or services to the business on credit. Creditors do not acquire business ownership, but promissory notes to be paid at a designated future date.

Shareholders' equity (or net worth or capital) is money put into a business by its owners for use by the business in acquiring assets.

At any given time, a business's assets equal the total contributions by the creditors and owners, as illustrated by the following formula for the Balance Sheet:

$$\text{Assets} = \text{Liabilities} + \text{Net worth}$$

This formula is a basic premise of accounting. If a business owes more money to creditors than it possesses in value of assets owned, the net worth or owner's equity of the business will be a negative number.

The Balance Sheet is designed to show how the assets, liabilities, and net worth of a business are distributed at any given time. It is usually prepared at regular intervals; e.g., at each month's end, but especially at the end of each fiscal (accounting) year.

By regularly preparing this summary of what the business owns and owes (the Balance Sheet), the business owner/manager can identify and analyze trends in the financial strength of the business. It permits timely modifications, such as gradually decreasing the amount of money the business owes to creditors and increasing the amount the business owes its owners.

All Balance Sheets contain the same categories of assets, liabilities, and net worth. Assets are arranged in decreasing order of how quickly they can be turned into cash (liquidity). Liabilities are listed in order of how soon they must be repaid, followed by retained earnings (net worth or owner's equity).

The categories and format of the Balance Sheet are established by a system known as Generally Accepted Accounting Principles (GAAP). The system is applied to all companies, large or small, so anyone reading the Balance Sheet can readily understand the story it tells.

### **Balance Sheet Categories**

Assets and liabilities are broken down into categories as described as follows:

**Assets:** An asset is anything the business owns that has monetary value.

Current Assets include cash, government securities, marketable securities, accounts receivable, notes receivable (other than from officers or employees), inventories, prepaid expenses, and any other item that could be converted into cash within one year in the normal course of business.

Fixed Assets are those acquired for long-term use in a business such as land, plant, equipment, machinery, leasehold improvements, furniture, fixtures, and any other items with an expected useful business life measured in years (as opposed to items that will wear out or be used up in less than one year and are usually expensed when they are purchased). Those assets are typically not for resale and are recorded in the Balance Sheet at their net cost less accumulated depreciation.

Other Assets include intangible assets, such as patents, royalty arrangements, copyrights, exclusive use contracts, and notes receivable from officers and employees.

**Liabilities:** Liabilities are the claims of creditors against the assets of the business (debts owed by the business).

Current Liabilities are accounts payable, notes payable to banks, accrued expenses (wages, salaries), taxes payable, the current portion (due within one year) of long term debt, and other obligations to creditors due within one year.

Long-term Liabilities are mortgages, intermediate and long-term bank loans, equipment loans, and any other obligation for money due to a creditor with a maturity longer than one year.

Net Worth is the assets of the business minus its liabilities. Net worth equals the owner's equity. This equity is the investment by the owner plus any profits or minus any losses that have accumulated in the business.

### **The Statement of Income**

The second primary report included in a business's Financial Statement is the Statement of Income. The Statement of Income is a measurement of a company's sales and expenses over a specific period of time. It is also prepared at regular intervals (again, each month and fiscal year end) to show the results of operating during those accounting periods. It too follows Generally Accepted Accounting Principles (GAAP) and contains specific revenue and expense categories regardless of the nature of the business.

### **Statement of Income Categories**

The Statement of Income categories are calculated as described below:

Net Sales (gross sales less returns and allowances)  
Less Cost of Goods Sold (cost of inventories)  
Equals Gross Margin (gross profit on sales before operating expenses)  
Less Selling and Administrative Expenses (salaries, wages, payroll taxes and benefits, rent, utilities, maintenance expenses, office supplies, postage, automobile/vehicle expenses, insurance, legal and accounting expenses, depreciation).  
Equals operating profit (profit before other non-operating income or expense)  
Plus Other Income (income from discounts, investments, customer charge accounts) Less Other Expenses (interest expense)  
Equals Net Profit (or Loss) before Tax (the figure on which your tax is calculated) Less Income Taxes (if any are due)  
Equals Net Profit (or Loss) After Tax  
Calculating the Cost of Goods Sold

Calculation of the Cost of Goods Sold category in the Statement of Income (or Profit-and-Loss Statement as it is sometimes called) varies depending on whether the business is retail, wholesale, or manufacturing. In retailing and wholesaling, computing the cost of goods sold during the accounting period involves beginning and ending inventories.

This, of course, includes purchases made during the accounting period. In manufacturing it involves not only finished goods inventories, but also raw materials inventories, goods in process inventories, direct labour, and direct factory overhead costs.

Regardless of the calculation for Cost of Goods Sold, deduct the Cost of Goods Sold from net Sales to get Gross Margin or Gross Profit. From Gross Profit, deduct general or indirect overhead, such as selling expenses, office expenses, and interest expenses to calculate your Net Profit.

This is the final profit after all costs and expenses for the accounting period have been deducted.

## **Understanding Financial Statements** **(From Finance Sense – Prasanna Chandra)**

Managers, shareholders, creditors and other interested groups seek answers to the following important questions about a firm:

- What is the financial position of the firm at a given point of time?
- How has the firm performed financially over a given period of time?
- What have been the sources and uses of cash over a given period of time?

To answer the above questions, the accountant prepares two principal statements – the balance sheet and the profit and loss account – and an ancillary statement, the cash flow statement. The balance sheet shows the financial position (or condition) of the firm at a given point of time. It provides a snapshot and may be regarded as a static picture. The profit and loss account reflects the performance of the firm over a period of time. Finally, the cash flow statement displays the sources and uses of cash during the period.

This chapter provides a primer on financial statements. It is divided into five sections which are as follows:

- Basic concepts underlying financial accounting.
- Balance Sheet.
- Profit and loss account.
- Cash flow statement.
- Manipulation of the bottom line.

### **Basic Concepts Underlying Financial Accounting**

The framework of financial accounting is based on several concepts (also referred to as postulates, conventions, and principles) which have received widespread, though not universal, acceptance by accountants. Following is a brief description of important concepts.

**Entity Concept** For purposes of accounting, the business firm is regarded as a separate entity. Accounts are maintained for the entity as distinct from the persons who are connected with it. The accountant records transactions as they affect this entity and regards owners, creditors, suppliers, employees, customers, and the government as parties transacting with this entity.

**Money Measurement Concept** Accounting is concerned with only those facts which are expressible in monetary terms. The use of a monetary yardstick provides a means by which heterogeneous elements, such as land, plant and equipment, inventories, securities and goodwill may be expressed in a common denominator.

**Stable Monetary Unit Concept** An implicit assumption in accounting, as it is practised, is that the monetary unit remains stable and values recorded at the time that events occur are not changed. Put differently, changes in the purchasing power of money are not considered. This

principle has been challenged and forceful arguments have been advanced for making adjustments for price level changes. Despite the great plausibility of these arguments, the practice of accounting is still based on the stable monetary unit assumption.

**Going Concern Concept** According to the going concern concept, accounting is normally based on the premise that the business entity will remain a going concern for an indefinitely long period.

**Cost Concept** Assets acquired by a business are generally recorded at their cost and this is used for all subsequent accounting purposes. For example, depreciation is charged on the basis of the original cost. Thus, it is evident that, this concept is related to the stable monetary unit concept.

**Conservatism Concept** This concept modifies the cost concept in the case of current assets. It is usually stated as follows: “anticipate no profit, but, provide for all possible losses”.

In accordance with this concept, current assets are generally valued at cost or market value, whichever is lower.

**Dual Aspect concept** Regarded as the most distinctive and fundamental concept of accounting, the dual aspect concept provides the basis for accounting mechanics. Before explaining this concept, let us define the terms ‘assets’ and ‘liabilities’. Assets are resources owned by a firm. They are very broadly divided into two categories; fixed assets and current assets. Liabilities are the claims of various parties against the assets owned by a firm. There are two types of liabilities: owners’ equity and outside liabilities. Owners’ equity represents the claims of the owners. Outside liabilities, on the other, reflect the claims of the creditors of the firm.

Since the resources owned by the firm are equal to its liabilities, the basic accounting identity is:

$$\text{Assets} = \text{Liabilities}$$

Now according to the dual aspect concept, each event has two aspects. These are such that the accounting identity is always preserved. Exhibit 1.1 illustrates how transactions are processed in terms of the dual aspect concept.

**Accounting Period Concept** In order to know the results of business operations and financial position of the firm periodically, time is divided into segments referred to as accounting periods. Income is measured for these periods and the financial position is assessed at the end of an accounting period.

**Accrual Concept** Income is measured by changes in the owners’ equity arising from the operations of the business. An increase in owners’ equity arising from the business operations is called a revenue and a decrease, an expense. When revenues exceed expenses, the difference is known as income; when expenses exceed revenues, the difference is called loss.

**Realisation Concept** According to the realisation concept, revenue is deemed to be earned only when it is realised. When is revenue realized? It is normally deemed realised when goods are

shipped or delivered to the customer, and not when a sales order is received or a contract signed or goods manufactured.

**Matching Concept** Once revenues for an accounting period are recognised, expenses incurred in generating these revenues are matched against them. This ensures that sales and cost of goods sold in the income statement refer to the same products. Note that expenses are matched to revenues and not vice versa.

### Exhibit Transactions Processing in terms of Dual Aspect Principle

Mr. Ram starts a proprietary business styled. Ram Enterprises. The four financial transactions of the business are as follows:

1. Mr. Ram contributes Rs. 400,000 as equity capital which is kept in a bank account.
2. Rs. 300,000 is paid for acquiring business premises.
3. The business obtains merchandise worth Rs. 200,000 on credit from Mr. Shyam.
4. Merchandise worth Rs. 100,000 is sold for Rs. 120,000 in cash.

The effects of these transactions from the point of view of the business firm, Ram Enterprises, are as follows:

**Transaction 1** An asset (bank deposit) increases by Rs. 400,000 and owner's equity increases by Rs. 400,000. The accounting records of the business would show the following position after the first transaction:

Owner's equity	Rs. 400,000	Bank deposit	Rs. 400,000
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**Transaction 2** An asset (business premises) increases by Rs. 300,000 and another asset (bank deposit) decreases by Rs. 300,000. The accounting records of the business would show the following position after the second transaction:

Owner's equity	Rs. 400,000	Bank deposit	Rs. 100,000
		Business premises	Rs. 300,000

**Transaction 3** An asset (merchandise) increases by Rs. 200,000 and a liability (trade credit) increases by Rs. 200,000. The accounting records of the business after the third transaction would show the following position:

Owner's equity	Rs. 400,000	Bank Deposit	Rs. 100,000
Trade credit	Rs. 200,000	Business premises	Rs. 300,000
		Merchandise	Rs. 200,000

**Transaction 4** An asset (merchandise) decreases by Rs. 100,000 another asset (cash) increases by Rs. 1,20,000 and the owner's equity increases by Rs. 20,000. The accounting records of the business would show the following position after the fourth transaction:

Owner's equity	Rs. 420,000	Bank Deposit	Rs. 220,000
Trade Credit	Rs. 200,000	Business premises	Rs. 300,000

Merchandise

Rs. 100,000

It will be helpful to explain here how the above transaction resulted in an increase of Rs. 20,000 in owner's equity. The transaction led to reduction of merchandise by Rs. 100,000 and an increase in cash by Rs. 120,000. Let us consider these aspects individually. If we look at the reduction of Rs. 100,000, so, there should be a corresponding decrease in the owner's equity.

Next, when we consider increase of Rs. 120,000 and hence the owner's equity should increase by Rs. 120,000. The net effect is that the owner's equity increases by Rs. 20,000. Note that an increase in owner's equity resulting from a business operation is called a revenue, while a decrease resulting from a business operation is called an expense. When revenues exceed expenses, the difference is called income; when expenses exceed revenues, the difference is called loss.

## Balance Sheet

The balance sheet shows the financial condition of a business at a given point of time. As per the Companies Act, the balance sheet of a company shall be in either the account form or the report form. Exhibit 1.2 shows these forms – part A of this Exhibit the account form and part B the report form. Exhibit 1.3 shows the balance sheet of Horizon Limited as on March 31, 2001, cast in the account, as well as the report form. While the report form is most commonly used by companies, it is more convenient to explain the contents of the balance sheet of Horizon Limited, cast in the account form, as given in Exhibit 1.4.

<b>A. Horizontal Form</b>	
<b>Liabilities</b>	<b>Assets</b>
<ul style="list-style-type: none"> <li>• Share capital</li> <li>• Reserves and surplus</li> <li>• Secured loans</li> <li>• Unsecured loans</li> <li>• Current liabilities and provisions <ul style="list-style-type: none"> <li>• Current liabilities</li> <li>• Provisions</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Fixed assets</li> <li>• Investments</li> <li>• Current assets, loans and advances <ul style="list-style-type: none"> <li>• Current assets</li> <li>• Loans and advances</li> </ul> </li> <li>• Miscellaneous expenditures and losses</li> </ul>
<b>B. Vertical Form</b>	
<b>I. Sources of Funds</b> <ol style="list-style-type: none"> <li>1. Shareholders' funds <ol style="list-style-type: none"> <li>(a) Share capital</li> <li>(b) Reserves and surplus</li> </ol> </li> <li>2. Loan funds <ol style="list-style-type: none"> <li>(a) Secured loans</li> <li>(b) Unsecured loans</li> </ol> </li> </ol>	

## II. Application of funds

1. Fixed assets
2. Investments
3. Current assets, loans and advances  
Less: Current liabilities and provisions  
Net current assets
4. Miscellaneous expenditures and losses

Before discussing various account categories found on the balance sheet of Horizon Limited, note that:

- The balance sheet is prepared for Horizon Limited which is regarded as a separate accounting entity (entity concept).
- The figures in the balance sheet are expressed in monetary terms (monetary concept).
- The balance sheet assumes that Horizon Limited is a going concern (going concern concept).
- The fixed assets are stated at cost less depreciation (cost concept).
- The current assets are stated at cost or market value, whichever is lower (conservatism concept).
- Assets are equal to liabilities (dual aspect concept)

### Liabilities

Liabilities, defined very broadly, represent what the business entity owes others. The Companies Act classifies them as follows:

- Share capital
- Reserves and surplus
- Secured loans
- Unsecured loans
- Current liabilities and provisions

**Share Capital** This is divided into two types equity capital and preference capital. The first represents the contribution of equity shareholders who are theoretically the owners to the firm. Equity capital being risk capital, carries no fixed rate of dividend. Preference capital represents the contribution of preference shareholders and the dividend rate payable on it is fixed.

**Reserves and Surplus** Reserves and surplus are profits which have been retained in the firm. There are two types of reserves: revenue and capital reserves. Revenue reserves represent accumulated retained earnings from the profits of normal business operations. These are held in various forms: general reserve, investment, allowance reserve, capital redemption reserve, dividend equalisation reserve, etc. Capital reserves arise out of gains which are not related to normal business operations. Examples of such gains are the premium on issue of shares are gain on revaluation of assets.



**Exhibit 1.3 Balance Sheet of Horizon Limited as on March 31, 2001**

A. Account form				Rs. in million	
Liabilities	2001	2000	Assets	2001	2000
Share capital	15.00	15.00	Fixed assets	33.00	32.20
Equity	15.00	15.00			
Preference	-	-			
Reserves and surplus	11.20	10.60	Investments	1.00	1.00
Secured loans	14.30	13.10	Current assets, loans and advances	23.40	15.60
Unsecured loans	6.90	2.50	Miscellaneous expenditures and losses	0.50	0.50
Current liabilities and provisions	10.50	8.10			
	57.90	49.30		57.90	49.30
B. Report Form					
				2001	2000
1. Sources of funds				26.20	25.60
1. Shareholders' funds					
(a) Share capital	15.00				
(b) Reserves & surplus	11.20				
2. Loan Funds				21.20	15.60
(a) Secured loans	14.30				
(b) Unsecured loans	6.90				
				47.40	41.20
II. Application of funds					
1. Fixed assets				33.00	32.20
2. Investments				1.00	1.00
3. Current assets, loans and advances				23.40	15.60
Less: Current liabilities and provisions				10.50	8.10
Net current assets				12.90	7.50
4. Miscellaneous expenditures and losses				0.50	0.50
				47.50	41.20

**Exhibit 1.4 Balance Sheet of Horizon Limited as on March 31, 2001.  
A Detailed Version.**

					Rs. in million
Liabilities	2001	2000	Assets	2001	2000
Share capital	15.00	15.00	Fixed Assets		
Equity	15.00	15.00	(net)	33.00	32.20
Preference	-	-	Gross block	50.00	46.20
			Acc. Depn.	17.00	14.00
Reserves & surplus	11.20	10.60	Investments	1.00	1.00
Secured loans	14.30	13.10	Current assets,		
Term loans	7.00	5.58	Loans and advances	23.40	15.60
Cash credit	7.30	7.30	Cash & bank	1.00	0.60
Unsecured loans	6.90	2.50	Debtors	11.40	6.80
Bank credit	2.50	2.50	Inventories	10.50	7.20
Inter-corporate	4.40	-	Advances	0.50	0.00
Deposits current liabilities			Miscellaneous exp. & losses	0.50	0.50
& provisions	10.50	8.10			
Trade credit	7.50	6.00			
Advances	2.00	1.30			
Provisions	1.00	0.80			
	57.90	49.30		57.90	49.30

- Note that, the working capital advance provided by banks is shown under secured loans or unsecured loans (depending on whether it is secured or not) and not under current liabilities and provisions.
- During the year, the firm paid term loans to the extent of Rs. 0.60 million and took new term loans to the extent of Rs. 1.80 million.
- During the year, the firm sold plant and machinery worth Rs. 2.0 million and bought plant and machinery worth Rs. 5.8 million.

Surplus is the balance in the profit and loss account which has not been appropriated to any particular reserve account. Note that, reserves and surplus along with equity capital represent owners' equity, which is also called networkth.

**Secured Loans** These denote borrowings of the firm against which specific security has been provided. The important components of secured loans are debentures, loans from financial institutions, and loans from commercial banks.

**Unsecured Loans** These are the borrowings of the firm against which no specific security has been provided. The major components of unsecured loans are: fixed deposits, loans and advances from promoters, inter-corporate borrowings, commercial paper, and unsecured loans from banks.

**Current Liabilities and Provisions** Current liabilities and provisions, as per the classification under the Companies Act, consist of the following: amounts due to the suppliers of goods and services bought on credit, advance payments received, accrued expenses, unclaimed dividend, and provisions for taxes, dividends, gratuity, pensions, etc.

Current liabilities for managerial purposes (as distinct from their definition in the Companies Act) are obligations which are expected to mature in the next twelve months. So defined, they include the following: (i) loans which are payable within one year from the date of balance sheet, (ii) accounts payable (creditors) on account of goods and services purchased on credit for which payment has to be made within one year, (iii) provisions for taxation, (iv) accruals for wages, salaries, rentals, interest and other expenses (these are expenses for services that have been received by the company but for which the payment has not fallen due); and (v) advance payments received for goods or services to be supplied in the future.

## **Assets**

Broadly speaking, assets represent resources which are of some value to the firm. They have been acquired at a specific monetary cost by the firm for the conduct of its operations. Assets are classified as follows under the Companies Act:

- Fixed assets
- Investments
- Current assets, loans and advances
- Miscellaneous expenditures and losses

**Fixed Assets** These assets have two characteristics: they are acquired for use over relatively long periods for carrying on the operations of the firm and they are ordinarily not meant for resale. Examples of fixed assets are land, buildings, plant, machinery, patents and copyrights.

**Investments** These are financial securities owned by the firm. Some investments represent long-term commitment of funds. (Usually these are the equity shares of other firms held for income and control purposes). Other investments are short-term in nature and may rightly be classified under current assets for managerial purposes. (Under requirements of the companies Act, however, short-term holding of financial securities also has to be shown under investments and not under current assets).

**Current Assets, Loans and Advances** This category consists of cash and other resources which get converted into cash during the operating cycle of the firm. Current assets are held for a shorter period of time as against fixed assets which are held for relatively longer periods. The major components of current assets are: cash, debtors, inventories, loans and advances, and pre-paid expenses. Cash denotes funds readily disburseable by the firm. The bulk of it is usually in the form of bank balance, the rest comprises of currency held by the firm. Debtors (also called accounts receivable) represent the amounts owed to the firm by its customers who have bought goods and services on credit. Debtors are shown in the balance sheet at the amount owed, less an allowance for the bad debts. Inventories (also called stocks) consist of raw materials, work in process, finished goods, and stores and spares. They are usually reported at lower of cost or market value. Loans and advances are the amounts loaned to employees, advances given to suppliers and contractors, advance tax paid and deposits made with governmental and other agencies. They are shown at the actual amount. Prepaid expenses are expenditures incurred for services to be rendered in the future. These are shown at the cost of unexpired service.

**Miscellaneous Expenditures and Losses** This category consists of two items: (i) miscellaneous expenditures, and (ii) losses. Miscellaneous expenditures represent certain outlays such as preliminary expenses and pre-operative expenses which have not been written off. From the accounting point of view, a loss occurs, the owners' equity should be reduced by that amount. However, as per the company law requirements, the share capital (representing owner's equity) cannot be reduced when a loss occurs. So the share capital is kept intact on the left hand side (the liabilities side) of the balance sheet and the loss is shown on the right hand side (the assets side) of the balance sheet.

### 1.3 Profit and Loss Account

The Companies Act has prescribed a standard form for the balance sheet, but none for the profit and loss account. However, the Companies Act does require that the information provided should be adequate to reflect a true and fair picture of the operations of the company for the accounting period. The Companies Act has also specified that the profit and loss account must show specific information as required by Schedule IV.

The profit and loss account, like the balance sheet, may be presented in the horizontal form (account form) or the vertical form (the report form). Typically, companies employ the report form. The report form statement may be a single step statement or a multi-step statement. In a single-step statement, all revenue items are recorded first, followed by the expense items and finally, the net profit is given. Exhibit 1.5 presents a single step profit and loss account for Horizon Limited for the year ending on March 31, 2001.

#### **Exhibit 1.5 Profit and Loss Account of Horizon Limited for the Year Ending on March 31, 2001.**

	Rs. in million
Income	
Sales	0.1
Expenditure	

Material and other expenditure	8.2
Interest	2.1
Depreciation	3.0
Profit before tax	6.8
Provision for tax	3.4
Profit after tax	3.4
Prior period adjustments	-
Profit available for appropriations	3.4
Appropriations	
Debenture redemption reserve	-
Dividend	2.8
General reserve	0.6
Surplus carried to balance sheet	-

While a single step profit and loss account aggregates all revenues and expenses, a multi step profit and loss account provides disaggregated information. Further, instead of showing only the final profit measure, viz., the profit after tax figure, it presents profit measures at intermediate stages as well. Exhibit 1.6 gives a multi step profit and loss account for Horizon Limited for the year ending March 31, 2001. The form given in this

**Exhibit 1.6 Profit and Loss Account of Horizon Limited for the Year Ending on March 31, 2001.**

		Rs. in million	
		2001	2000
Net Sales		70.1	62.3
Cost of goods sold		55.2	47.5
Stocks	42.1		
Wages and salaries	6.8		
Other manufacturing expenses	6.3		
Gross profit		14.9	14.8
Operating expenses		6.0	4.9
Depreciation	3.0		
General administration	1.2		
Selling	1.8		
Operating profit		8.9	9.9
Non-operating surplus/deficit		-	0.6
Profit before interest and tax		8.9	10.5

Interest	2.1	2.2
Profit before tax	6.8	8.3
Tax	3.4	4.1
Profit after tax	3.4	4.2
Dividends	2.8	2.7
Retained earnings	0.6	1.5
Per share data (in rupees)		
Earnings per share	2.27	2.80
Dividend per share	1.87	1.80
Market price per share	21.00	20.00
Book value per share	17.46	17.07

table highlights the following:

- Net sales
  - Cost of goods sold
  - Gross profit
  - Operating expenses
  - Operating profit
  - Non-operating surplus/deficit
  - Profit before interest and tax
  - Interest
  - Profit before tax
  - Tax
  - Profit after tax
  - Dividends
  - Retained earnings
  - Per share data
- Net sales are obtained as follows:

$$\text{Sales} = \text{sales inwards} - \text{excise duty}$$

Sales are the sum of the invoice price of goods sold and services rendered during the period. Sales inwards represents the invoice value of goods returned by the customers. Excise duty refers to the amount paid to the government.

- Cost of goods sold is the sum of costs incurred for manufacturing the goods sold during the accounting period. It consists of direct material cost, direct labour cost, and factory overheads. It should be distinguished from the cost of production. /the latter represents the cost of goods produced in the accounting year, and not the cost of goods sold during the same period.

- Gross profit is the difference between net sales and cost of goods sold. Most companies show this amount as a separate item (as in the table here). Some companies, however, show all the expenses at one place without making gross profit a separate item.
- Operating expenses consist of general administrative expenses, selling and distribution expenses, and depreciation. (Many accountants include depreciation under cost of goods sold as a manufacturing overhead rather than under operating expenses. This treatment is also quite reasonable).
- Operating profit is the difference between gross profit and operating expenses. As a measure of profit, it reflects operating performance and is not affected by non-operating gains/losses, financial leverage, and tax factor.
- Non-operating surplus represents gains arising from sources other than normal operations of the business. Its major components are income from investments and gains from disposal of assets. Likewise, non-operating deficit represents losses from activities unrelated to the normal operations of the firm.
- Profit before interest and taxes is the sum of operating profit and non-operating surplus/deficit. Referred to also as earnings before interest and taxes (EBIT), This represents a measure of profit which is not influenced by financial leverage and the tax factor Hence, it is pre-eminently suitable for inter-firm comparison.
- Interest is the expense incurred for borrowed funds, such as term loans, debentures, public deposits, and working capital advances.
- Profit before tax is obtained by deducting interest from profits before interest and taxes.
- Tax represents the income tax payable on the taxable profit of the year.
- Profit after tax is the difference between the profit before tax and tax for the year.
- Dividends represents the amount earmarked for distribution to shareholders.
- Retained earnings are the difference between profit after tax and dividends.
- Per share data include information about earnings per share, dividend per share, market price per share, and book value per share.

### **Unaudited Quarterly Financial Results**

A listed company is required to furnish unaudited financial results on a quarterly basis within a month of expiry of the period to the stock exchange where the company is listed. Further, the company is required to advertise the details within 48 hours of the disclosure. The advertisement must appear in at least one national English daily and, one regional newspaper published from where the registered office of the company is located.

The proforma specified for such disclosure calls for providing the following details:

- Net sales/income from operations.
- Other income
- Total expenditure
- Interest
- Gross profit/loss after interest but before depreciation and taxation.
- Provision for taxation
- Net profit/loss
- Paid-up equity capital and reserves excluding revaluation reserves (as per the balance sheet of the previous accounting year)

The proforma requires a company to give financial results for the quarter ended, for the corresponding quarter of the previous year, and for the previous accounting year. The Listing Agreement (under which the unaudited quarterly financial results have to be furnished) stipulate certain conditions to maintain the quality of such disclosures.

#### 1.4 Cash Flow Statement

From a financial point of view, a firm basically generates cash and spends cash.

It generates cash when it issues securities, raises a bank loan, sells a product, disposes an asset, so on and so forth. It spends cash when it redeems securities, repays a bank loan, purchases materials, acquires an asset, so on and so forth. The activities that generate cash are called sources of cash and the activities that absorb cash are called uses of cash.

To understand how a firm has obtained cash and how it has spent cash during a given period; we need to look at the changes in each of the items in the balance sheet over that period. As an illustration, Exhibit 1.7 shows the balance sheets of Horizon Limited as on 31.3.2000 and 31.3.2001. The changes in various items of the balance sheet are noted in the last two columns of that exhibit.

#### Exhibit 1.7 Changes in Balance Sheet Items

Rs. in million				
Changes in Balance Sheet Items				
	Mar' 31	Mar'31	Increase	Decrease
	2001	2000		
Owners' Equity and Liabilities				
Share Capital				
Equity capital	15.00	15.00	-	-
Preference capital	-	-	-	-
Reserves & Surplus	11.20	10.60	0.60	-
Secured Loans				
Term loans	7.00	5.80	1.20	



Cash credit	7.30	7.30	-	-
Unsecured Loans				
Bank credit	2.50	2.50	-	-
Inter-corporate deposit	4.40	-	4.40	-
Current Liabilities & Provisions				
Trade credit	7.50	6.00	1.50	-
Advance (taken)	2.00	1.30	0.70	
Provisions	1.00	0.80	0.20	-
Assets				
Fixed Assets (net)	33.00	32.20	0.80	-
Investments	1.00	1.00	-	-
Current Assets, Loans & Advances				
Cash & bank	1.00	0.60	0.40	-
Debtors	11.40	6.80	4.60	-
Inventories	10.50	7.20	3.30	-
Advances	0.50	1.00	-	0.50
Miscellaneous exp. & losses	0.50	0.50	-	-

Looking at Exhibit 1.7, we find that a number of things have changed over the year. For example, term loans increased by Rs. 1.20 million and fixed assets (net) increased by Rs. 0.80 million. Which of these changes represent a source of cash and which a use of cash? Our common sense tells us that a firm generates cash when it increases its liabilities (as well as owners' equity), and it uses cash when it buys assets or reduces its liabilities (as well as owners' equity). Thus, the following picture emerges:

Sources of Cash	Uses of Cash
<ul style="list-style-type: none"> <li>• Increase in liabilities and owners' equity</li> <li>• Decrease in assets</li> </ul>	<ul style="list-style-type: none"> <li>• Decrease in liabilities and owners' equity</li> <li>• Increase in assets</li> </ul>

Using the above framework, we can summarize the sources and uses of cash from the balance sheet data as follows:

Rs. in million			
Sources		Uses	
Increase in reserves & surplus	0.6	Increase in fixed assets (net)	0.8
Increase in term loans	1.2	Increase in debtors	4.6
Increase in inter-corporate deposit	4.4	Increase in inventories	3.3
Increase in trade credit	1.5		
Increase in advances (taken)	0.7		
Increase in provisions	0.2		
Decrease in advances (given)	0.5		

Total	9.1	Total uses	8.7
		Net addition to cash	0.4

Note that the net addition to cash is Rs. 0.40 million and it tallies with the Rs. 0.40 million change shown on the balance sheet.

This simple statement tells us a lot about what happened during the year, but it does not convey the full story. For example, the increase in reserves and surplus is equal to: profit after tax – dividends. If these are reported separately, it would be more enlightening. Likewise, it would be more illuminating to know the break-up of net fixed asset acquisition in terms of gross assets acquisition and depreciation charge.

To get these details, we have to draw on the profit and loss account of Horizon shown in Exhibit 1.6. The amplified sources and uses of cash statement is as follows:

(Rs. in million)

Sources		Uses	
Net profit	3.4	Dividend payment	2.8
Depreciation	3.0	Purchase of fixed assets	3.8
Increase in term loans	1.2	Increase in debtors	4.6
Increase in inter-corporate deposit	4.4	Increase in inventories	3.3
Increase in trade credit	1.5		
Increase in advances (taken)	0.7		
Increase in provisions	0.2		
Decrease in advances (given)	0.5		
Total Sources	14.9	Total uses	14.5
		Net addition to cash	0.4

### **Classified Cash Flow Statement**

The statement presented above lumped together all sources of cash and all uses of cash. To understand better how cash flows have been influenced by various decisions, it is helpful to classify cash flows into three categories: cash flows from operating activities, cash flows from investing activities, and cash flows from financing activities. Though this format calls for more detail, it provides useful information on how cash flows have been influenced by different kinds of decisions. Given the greater informational content of such a format, the discussion paper on ‘Cash Flow Statements’ prepared by the Accounting Principles Board of the Institute of Chartered Accountants of India recommends this format. Incidentally, the listing guidelines of stock exchanges in India now require that all listed companies must include a ‘Cash Flow Statement’, prepared according to the format suggested in the discussion paper, in their annual reports.

### **Exhibit 1.8 Classified Cash Flow Statement for Horizon Limited for the Period 1.4.2000 to 31.3.2001**

(Rs. in million)

(A) Cash flow from Operating Activities	
Net profit before tax and extraordinary items	6.8
Adjustment for Interest Paid	2.1
Depreciation	3.0
Operating profit before working capital changes	11.9
Adjustments for	
Debtors	(4.5)
Inventories	(3.0)
Advances	0.5
Trade credit	1.5
Advances	0.7
Provisions	0.2
Cash generated from operations	6.9
Interest paid	(2.1)
Interest tax paid	(3.4)
Cash flow before extraordinary items	1.4
Extraordinary item	-
Net cash flow from operating activities	1.4
(B) Cash Flow from Investing Activities	
Purchase of fixed assets	(3.8)
Net cash flow from investing activities	(3.8)
(C) Cash flow from Financing Activities	
Proceeds from term loans	1.2
Proceeds from inter-corporate deposits	4.4
Dividend paid	(2.8)
Net cash flow from financing activities	2.8
(D) Net increase in cash and cash equivalents	0.4
Cash and cash equivalents as on 1.4.2000	0.6
Cash and cash equivalents as on 31.3.2001	1.0

The classified cash flow statement for Horizon Limited is given in Exhibit 1.8. Before looking at this exhibit, let us take a look at the definitions provided in the discussion paper issued by the Institute of Chartered Accountants of India.

- Cash comprises cash on hand and demand deposits.
- Cash equivalents are short-term, highly liquid investments that are readily convertible into known amount of cash and which are subject to an insignificant risk of changes in value.
- Cash flows are inflows and outflows of cash and cash equivalents.
- Operating activities are the principal revenue producing activities of the enterprise and other activities that are not investing or financing activities.
- Investment activities are the acquisition and disposal of long-term assets and other investments not included in cash equivalents.
- Financing activities are activities that result in changes in the size and composition of the owners' capital (including preference share capital) and borrowings of the enterprise.

## FINANCIAL STATEMENT ANALYSIS

In the previous chapter, we looked at the contents of the financial statements and pointed towards the limitations of accounting numbers. Yet, financial analysts depend primarily on these statements to diagnose financial performance. Why? It appears that these are three principal reasons: (i) As long as the accounting biases remain more or less the same over time, meaningful interferences can be drawn by examining trends in raw data and in financial ratios. (ii) Since similar biases characterize various firms in the same industry, inter-firm comparisons are useful. (iii) Experience seems to suggest that financial analysis ‘works’ if one is aware of accounting biases and makes adjustments for the same.

If properly analyzed and interpreted, financial statements can provide valuable insights into a firm’s performance. Analysis of financial statements is of interest to lenders (short-term as well as long-term), investors, security analysts, managers, and others. Financial statement analysis may be done for a variety of purposes, which may range from simple analysis of the short-term liquidity position of the firm to a comprehensive assessment of the strengths and weaknesses of the firm in various areas.

This chapter discusses the tools of financial statement analysis. It is divided into five sections:

- Financial ratios
- Comparative analysis
- Du Pont analysis
- Problems in financial statement analysis
- Guidelines for financial statement analysis

### 2.1 FINANCIAL RATIOS

A ratio is an arithmetical relationship between two figures. Financial ratio analysis is a study of ratios between various items or groups of items in financial statements. Financial ratios have been classified in several ways. For our purposes, we divide them into five broad categories as follows:

- Liquidity ratios
- Leverage ratios
- Profitability ratios
- Valuation ratios

To facilitate the discussion of various ratios, the financial statements of Horizon Limited, shown in Exhibits 2.1 and 2.2 will be used.

Exhibit 2.1 Horizon Limited: Profit and Loss Account for the year Ending 31<sup>st</sup> March 20X1

	(Rs in crore)	
Net Sales	70.1	62.3
Cost of goods sold	55.2	47.5
Stocks	42.1	37.0
Wages and salaries	6.8	5.5
Other manufacturing expenses	6.3	5.0
Gross profit	14.9	14.8
Operating expenses	6.0	4.9
Depreciation	3.0	2.6
General administration	1.2	1.1
Selling	1.8	1.2
Operating Profit	8.9	9.9
Non-operating surplus/deficit	-	0.6
Profit before interest and tax	8.9	10.5
Interest	2.1	2.2
Profit before tax	6.8	8.3
Tax	3.4	4.1
Profit after tax	3.4	4.2
Dividends	2.8	2.7
Retained earnings	0.6	1.5
Per share data (in rupees)		
Earnings per share	2.27	2.80
Dividends per share	1.87	1.80
Market price per share	21.00	20.00
Book value per share	17.47	17.07

### Liquidity Ratio

Liquidity refers to the ability of a firm to meet its obligations in the short run, usually one year. Liquidity ratios are generally based on the relationship between current assets (the sources for meeting short-term obligations) and current liabilities. The important liquidity ratios are: current ratio and acid-test ratio.

**Current Ratio** A very popular liquidity ratio, the current ratio is defined as”:

$$\frac{\text{Quick assets}}{\text{Current liabilities}}$$

Current assets include cash, marketable securities, debtors, inventories (stocks), loans and advances, and prepaid expenses. For the sake of simplicity, they may be equated with the balance sheet item 'current assets, loans and advances', which as we have discussed earlier does not include marketable securities. Current liabilities represent liabilities that are expected to mature in the next twelve months. For the sake of simplicity they may be equated with the item 'current liabilities and provisions' on the balance sheet. More precisely, they must also include loans due next year.

Exhibit 2.2 Horizon Limited: Balance sheet as on 31<sup>st</sup> March 20XI

(Rs.in crore)

<b>I Sources of Funds</b>		
1. Shareholders' funds	26.20	25.60
(a) Share capital	15.00	15.00
(b) Reserves and surplus	11.20	10.60
2. Loan funds	21.20	15.60
(a) Secured loans	14.30	13.10
(b) Unsecured Loans	6.90	2.50
<b>Total</b>	<b>47.40</b>	<b>41.20</b>
<b>II Application of Funds</b>		
1. Fixed assets	33.00	32.20
2. Investments	1.00	1.00
3. Current assets, loans and advances	23.40	15.60
(a) Cash & bank	1.00	0.60
(b) Debtors	11.40	6.80
(c) Inventories	10.50	7.20
(d) Prepaid expenses	0.50	1.00
Less: Current liabilities and provisions	10.50	8.10
	12.90	7.50
Net current assets	0.50	0.50
4. Miscellaneous expenditures and losses		
<b>Total</b>	<b>47.40</b>	<b>41.20</b>

Horizon's current ratio for the 20x1 year-end is:

$$23.4 + 10.5 = 2.23$$

The current ratio measures the ability of the firm to meet its current liabilities- current assets get converted into cash during the operating cycle of the firm and provide the funds needed to pay current liabilities. Apparently, the higher the current ratio, the greater the short-term solvency. However, in interpreting the current ratio the composition of current assets must not be overlooked. A firm with a high proportion of current assets in the form cash and debtors is more liquid than one with a high proportion of current assets in the form of inventories even though both the firms have the same current ratio. Banks and financial institutions apply a general norm of 1.33 for the current ratio.

Acid-test Ratio also called the quick ratio, the acid-test ratio is defined as:

$$\frac{\text{Quick assets}}{\text{Current liabilities}}$$

Quick assets are defined as current assets excluding inventories.

Horizon's acid test ratio for 20X1 year-end is:

$$12.9 \div 10.5 = 1.23$$

The acid-test ratio is a fairly stringent measure of liquidity. It is based on those current assets which are highly liquid – inventories are excluded from the numerator of this ratio because inventories are deemed to be the least liquid component of current assets.

### Leverage Ratios

Financial leverage refers to the use of debt finance. While debt capital is a cheaper source of finance, it is also a riskier source of finance. Leverage ratios help in assessing the risk arising from the use of debt capital. The important leverage ratios are: debt-equity ratio, interest coverage ratio, and debt service coverage ratio.

**Debt-equity Ratio.** The debt-equity ratio shows the relative contributions of creditors and owners. It is defined as:

$$\frac{\text{Debt}}{\text{Equity}}$$

The numerator of this ratio consists of loan funds<sup>1</sup> and the denominator represents shareholders' funds<sup>2</sup>. Horizon's debt-equity ratio for the 20X1 year-end is:

$$21.2 \div 26.2 = 0.809$$

In general, the lower the debt-equity ratio, the higher the degree of protection employed by the creditors. In using this ratio, however, the following points should be borne in mind:

The book value of equity may understate its true value in a period of rising prices. This happens because assets are carried at their historical values less depreciation, not at current values.

Some forms of debt (like term loans, secured debentures, and secured short-term borrowing) are usually protected by charge on specific assets and may enjoy superior protection.

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<sup>1</sup> Alternatively the ratio of long-term debt to equity may be calculated. What is important is that the same ratio is used consistently when comparisons are made.

<sup>2</sup> For the sake of simplicity, preference capital is subsumed under equity. Since preference capital is usually a very minor source of finance, its inclusion or exclusion hardly makes any difference.

**Interest Coverage Ratio** : Also called the times interest earned, the interest coverage ratio is defined as:

$$\frac{\text{Profit before interest and taxes}}{\text{Interest}}$$

Horizon' interest coverage ratio for 20X1 is:

$$8.9 \div 2.1 = 4.23$$

Note that profit before interest and taxes is used in the numerator of this ratio because the ability of the firm to pay interest is not affected by tax payment, as interest on debt funds is a tax-deductible expense. A high interest coverage ratio means that the firm can easily meet its interest burden even if profit before interest and taxes suffers a considerable decline. A low interest coverage ratio may result in financial embarrassment when profit before interest and taxes declines. This ratio is widely used by lenders to assess a firm's debt capacity.

Though popular, this ratio is not a very appropriate measure of interest coverage because the source of interest payment is cash flow before interest and taxes not profit before interest and taxes. In view of this, we may use modified interest coverage ratio:

$$\frac{\text{Profit before interest and taxes} + \text{Depreciation}}{\text{Debt interest}}$$

For Horizon Limited, this ratio for 20X1

$$\text{is: } 12.9 \div 2.1 = 6.14$$

**Debt Service Coverage Ratio.** Used by term-lending financial institutions in India, the debt service coverage ratio is defined as:

$$(\text{Profit after tax} + \text{Depreciation} + \text{Other non-cash charges} + \text{Interest on term loan} + \text{lease rental})$$

Financial institutions calculate the average debt service coverage ratio for the period during which the term loan for the project is repayable. Normally financial institutions regard a debt service coverage ratio of 1.5 to 2.0 as satisfactory.

## Turnover Ratios

Turnover ratios, also referred to as activity ratios or asset management ratios, measure how efficiently the assets are employed by a firm. These ratios reflect the relationship between the level of activity, represented by sales or cost of goods sold, and the levels of various assets. The important turnover, and total assets turnover.

**Inventory Turnover.** The inventory turnover or stock turnover measures how fast the inventory is moving through the firm and generating sales. It is defined as:

$$\frac{\text{Net Sale}}{\text{Inventory}}$$

Horizon's inventory turnover for 20X1 is:

$$70.1 \div 10.5 = 6.68$$



The inventory turnover reflects the efficiency of inventory management. The higher the ratio, the more efficient the management of inventories and vice versa. However, this may not always be true. A high inventory turnover may be caused by a low level of inventory which may result in frequent stockouts and loss of sales and customer goodwill.

Note that we have divided net sales by closing inventory. As inventories tend to change over the years, it is more appropriate to use the average of opening and closing inventories. In general, averages may be used when a flow measure (like sales) is related to a stock measure (like inventories). However, for the sake of simplicity, we will use to closing figures.

**Debtors Turnover:** This ratio shows how many times accounts receivables (debtors) turn over during the year. It is defined as:

$$\frac{\text{Net credit sales}}{\text{Debtorsx}}$$

If the figure for net credit sales is not available, one may have to make do with the net sales figure.

Horizon's debtors turnover for 20X1 is:

$$70.1 \div 11.4 = 6.15$$

Obviously, the higher the debtors turnover the greater the efficiency of credit management. Directly related to the debtors turnover the greater is the average collection period which represents the number of days worth of credit sales that is locked in debtors (accounts receivable). It is defined as:

$$\frac{\text{Debtors}}{\text{Average daily credit sales}}$$

Horizon's average collection period is :

$$(11.4 \div) + (70.1/365) = 59.4 \text{ days}$$

Note that the average collection period and the debtors turnover are related as follows:

$$\text{Average collection period} = \frac{365}{\text{Debtors turnover}}$$

The average collection period may be compared with the firm's credit terms to judge the efficiency of credit management. For example, if the credit terms are 2/10, net 45, an average collection period of 85 days means that the collection is slow and an average collection period of 40 days means that the collection is prompt. An average collection period which is shorter than the credit period allowed by the firm needs to be interpreted carefully. It may mean efficiency of credit management or excessive conservatism in credit granting that may result in the loss of some desirable sales.

**Fixed Assets Turnover:** This ratio measures sales per rupee of investment in fixed assets. It is defined as:

$$\frac{\text{Net sales}}{\text{Net fixed assets}}$$

Horizon's fixed assets turnover ratio for 20X1 is:

$$70.1 \div 33.0 = 2.12$$

This ratio is supposed to measure the efficiency with which fixed assets are employed – a high ratio indicates a high degree of efficiency in asset utilization and a low ratio reflects inefficient use of assets. However, in interpreting this ratio, one caution should be borne in mind. When the fixed assets of the firm are old and substantially depreciated, the fixed assets turnover ratio tends to be high because the denominator of the ratio is very low.

**Total Assets Turnover:** Akin to the output-capital ratio in economic analysis, the total assets turnover is defined as:

$$\frac{\text{Net sales}}{\text{Total assets}}$$

Horizon's total assets turnover ratio for 20X1 is:

$$70.1 \div 47.4 = 1.48$$

This ratio measures how efficiently assets are employed, overall.

Profitability reflects the final result of business operations. There are two types of profitability ratios: profit margin ratios and rate of return ratios. Profit margin ratios show the relationship between profit and sales. The two popular profit margin ratios are : gross profit margin ratio and net profit margin ratio. Rate of return ratios reflect the relationship between profit and investment. The important rate of return measures are: return on capital employed (also called return on assets) and return on equity.

**Gross Profit Margin Ratio.** The gross profit margin ratio is defined as:

$$\frac{\text{Gross profit}}{\text{Net sales}}$$

Gross profit is defined as the difference between net sales and cost of goods sold.

Horizon's gross profit margin ratio for 20X1 is:

$$14.9 \div 70.1 = 0.21 \text{ or } 21 \text{ per cent}$$

This ratio shows the margin left after meeting manufacturing costs. It measures the efficiency of production as well as pricing. To analyze the factors underlying the variation in gross profit margin the proportion of various elements of cost (labour, material, and manufacturing overhead) to sales may be studied in detail.

**Net Profit Margin Ratio:** The net margin ratio is defined as

$$\frac{\text{Net Profit}}{\text{Net sales}}$$

Horizon's net profit margin ratio for 20X1 is:

$$3.4 \div 70.1 = 0.049 \text{ or } 4.9 \text{ per cent.}$$

This ratio shows the earnings left for shareholders (both equity and preference) as a percentage of net sales. It measures the overall efficiency of production, administration, selling, financing, pricing, and tax management. Jointly considered, the gross and net profit margin ratios provide a valuable understanding of the cost and profit structure of the firm and enable the analyst to identify the sources of business efficiency/inefficiency.

### **Return on Capital Employed.**

The return on capital employed (ROCE), also called the return on asset (ROA), is very popular measure of profitability. There are several variants of ROCE:

The values of these measures for the Horizon Limited for the year 20×1 are:

ROCE1, though widely used, is an odd measure because its numerator measures the return to shareholders (equity and preference) whereas its denominator represents the contribution of all investors (shareholders as well as lenders).

ROCE2, also **earning power**, is a measure of business performance which is not affected by interest charges and tax burden. It abstracts away the effect of capital structure and tax factor and focuses on operating performance. Hence it is eminently suited for inter-firm comparison. Further, it is internally consistent. The numerator represents a measure of pre-tax earnings belonging to all sources of finance and the denominator represents total financing.

ROCE3, is the post-tax version of ROCE2. It considers the effect of taxation, but not the capital structure. It is internally consistent. Its merit is that it is defined in such a way that it can be compared directly with the post-tax weighted average cost of capital of the firm.

**Return on Equity** A measure of great interest to equity shareholders, the return on equity is defined as:

The numerator of this ratio is equal to profit after tax less preference dividends. The denominator includes all contributions made by equity shareholders (paid-up capital + reserves and surplus). This ratio is also called the return on net worth.

Horizon's return on equity for 20×1 is:

$$3.4 \div 26.2 = 0.130 \text{ or } 13.0 \text{ per cent}$$

The return on equity measures the profitability of equity funds invested in the firm. It is regarded as a very important measure because it reflects the productivity of the ownership (or risk) capital employed in firm. It is influenced by several factors: earning power, debt-equity ratio, average cost of debt funds, and tax rate.

In judging all the profitability measures it should be borne in mind that the historical valuation of assets imparts an upward bias to profitability measures during an inflationary period. This happens because the numerator of this measure represents current values, whereas the denominator represents historical values.

### **Valuation Ratios**

Valuation ratios indicate how the equity stock of the company is assessed in the capital market. Since the market value of equity reflects the combined influence of risk and return, valuation ratios are the most comprehensive measures of a firm's performance. The important valuation ratios are: price earnings ratio, yield, and market value to book value ratio.

**Price-earnings Ratio** Perhaps the most popular financial statistic in stock market discussion, the price earnings ratio is defined as:

The market price per share may be the price prevailing on a certain day or the average price over a period of time. The earnings per share is simply: profit after tax less preference dividend divided by the number of outstanding equity shares.

Horizon's price-earnings ratio at the end of 20×1  
is:  $21.0 \div 2.27 = 9.25$

The price earnings ratio (or the **price earnings multiple** as it is commonly referred to) is a summary measure which primarily reflects the following factors: profitability, growth prospects, risk characteristics, shareholder orientation, corporate image, and degree of liquidity.

**Yield** This is a measure of the rate of return earned by shareholders. It is defined as

This may be split into two parts:

For Horizon, the dividend yield and the capital gains yield for 20×1 are as follows:

Dividend yield =  $1.87/20.0 = 9.35$  per cent;

Capital gain yield =  $1.0/20.0 = 5$  per cent.

Hence, the total yield for 20×1 was 14.35 per cent.

Generally companies with low growth prospects offer a higher dividend yield and a lower capital gains yield. On the other hand, companies with superior growth prospects offer a low dividend yield and a high capital gains yield.

**Market Value to Book Value Ratio** Another popular stock market statistic, the market value to book value ratio is defined as:

Horizon's market value to book value ratio at the end of 20×1 was:

$$21.00 \div 17.47 = 1.20$$

In a way, this ratio reflects the contribution of a firm to the wealth of the society. When this ratio exceeds 1 it means that the firm has contributed to the creation of wealth in the society-if this ratio is, say 2, the firm has created a wealth of one rupee for every rupee invested in it. When this ratio is equal to 1, it implies that the firm has neither contributed nor detracted from the wealth of society.

## 2.2 COMPARATIVE ANALYSIS

We have discussed a long list of financial ratios. For judging whether the ratios are high or low, you may do comparative analysis such as a cross-section analysis (in which the industry averages may be used as benchmark) or time series analysis (in which the ratios of the firm are compared over time)

### Comparison with Industry Averages

Exhibit 2.3 shows the ratios of Horizon Limited along with industry averages. Note that industry averages often provide useful benchmarks for comparison. Sometimes the ratios of few competitor firms may be used as benchmarks.

- Comparing the ratios of Horizon Limited with industry averages we find that:
- Horizons Limited has a favourable liquidity position. All the liquidity ratios of Horizon Limited are higher than the industry averages.
- Leverages ratios of Horizon Limited are more or less comparable with industry averages.
- Turnover ratios of Horizon Limited are a shade lower than the industry averages.
- Profit margin ratios of Horizon Limited are somewhat higher than the industry averages. The rates of return measures of Horizon Limited are also higher than the industry averages.
- The valuation ratios of Horizon Limited compare favourably in relation to industry averages.

Exhibit 2.3: Comparison of Ratios of Horizon Limited with Industry Average

Ratios	Formula	Horizon Limited	Industry Average
<b>Liquidity</b>			
Current Ratio	$\frac{\text{Current assets}}{\text{Current liabilities}}$	2.23	2.15
Acid-test ratio	$\frac{\text{Quick assets}}{\text{Current liabilities}}$	1.23	1.20
<b>Leverage</b>			
Debt-equity Ratio	$\frac{\text{Debt}}{\text{Equity}}$	0.809	0.860

Current Ratio	$\frac{PBIT}{Interest}$	4.23	4.14
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**Turnover**

Inventory turnover	$\frac{Net\ sales}{Inventory}$	6.68	6.90
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Debtors turnover	$\frac{Net\ Credit\ sales}{Debtors}$	6.15	5.95
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Fixed Assets turnover	$\frac{Net\ Sales}{Net\ fixed\ assets}$	2.12	2.20
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Total assets turnover	$\frac{Net\ sales}{Net\ fixed\ assets}$	1.48	1.43
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### Profitability

Gross Profit margin ratio	$\frac{Gross\ profit}{Net\ sales}$	21.0%	18.0
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Net Profit margin ratio	$\frac{Net\ profit}{Net\ sales}$	4.9 0%	4.0%
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ROCE	$\frac{Net\ Profit}{Total\ assets}$	7.2%	6.9%
------	-------------------------------------	------	------

ROCE	$\frac{PBIT}{Total\ assets}$	18.8%	17.7%
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ROCE	$\frac{PBIT\ (1 - T)}{Total\ assets}$	9.4%	8.8%
------	---------------------------------------	------	------

Return on equity	$\frac{Equity\ earnings}{Net\ worth}$	13.0%	12.55%
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### Valuation

Price earnings ratio	$\frac{Market\ price\ per\ share}{Earnings\ per\ share}$	9.25	9.00
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Yield	$\frac{Dividend + Price\ per\ share}{Earning\ per\ share}$	14.35%	14.1%
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	$\frac{\text{Market Price per share}}{\text{Book value per share}}$	1.20%	1.16
Market value to book value ratio			

## Time Series of Financial Ratios

Besides looking at the ratios for one year, one would like to look at the ratios for several years. This helps in detecting secular changes and avoiding the bias introduced by transitory forces. Exhibit 2.4 presents the time series of select financial ratios for Horizon Limited for a period for five years. Looking at Exhibit 2.4 we find that:

- The current ratio increased for two years initially but declined thereafter and recovered finally.
- The debt equity ratio improved for three years in succession but finally reverted back to its original level.
- The total assets turnover ratio increased in the third and fourth years but finally reverted back to its original level.
- The net profit margin ratio improved impressively in the second year but subsequently declined somewhat steeply over the remaining three years.
- The return on equity followed the pattern of the net profit margin ratio.
- The price earnings ratio deteriorated steadily over time except in the last year.

## 2.3 DU PONT ANALYSIS

The Du Pont Company of the US pioneered a system of financial analysis which has received widespread recognition and acceptance. The Du Pont system blends information from profit and loss account and balance sheet into key measures of performance. Exhibit 2.5 depicts the Du Pont system with Horizon's Limited financial numbers and ratios. The upper portion summarizes the profit and loss account activities; the lower portion, the balance sheet activities.

The Du Pont system expresses return on equity as a product of two basic ratios return on total assets and financial leverage multiplier. The return on total assets, in turn, is the product of two key ratios: net profit margin and total asset turnover. Hence

$$\frac{\text{Profit after tax}}{\text{Net worth}} = \frac{\text{Profit after tax}}{\text{Net sales}} \times \frac{\text{Net sales}}{\text{Total assets}} \times \frac{\text{Total assets}}{\text{Net worth}}$$

The profit and loss account information provides the details underlying the net profit margin. Examining them may indicate areas where cost reduction may be effected to improve the net profit margin. The balance sheet information throws light on how turnover may be improved and what scope exists for exploiting financial leverage.

#### Exhibit 2.4 Time Series of Key Financial Ratios

	1	2	3	4	5*
Current ratio	2.16	2.25	2.32	1.93	2.23
Debt-equity ratio	0.80	0.67	0.63	0.61	0.81
Total assets turnover	1.48	1.46	1.55	1.56	1.48
Net profit margin	9.0%	11.5%	10.0%	6.9%	4.9%
Price earnings ratio	12.56	12.30	10.34	7.14	9.25

\*Year 5 is 20x1

#### Exhibit 2.5 Du Pont Chart Applied to Horizon Limited

### 2.4 PROBLEM IN FINANCIAL STATEMENT ANALYSIS

Financial statement analysis can be a very useful tool for understanding a firm's performance and condition. However, there are certain problems and issues encountered in such analysis which call for care, circumspection, and judgment.

**Heuristic and Intuitive Character** Most of the ratios found in the traditional literature on financial statement analysis have been proposed in a somewhat heuristic or intuitive fashion. The ratios are often not related logically to a well-defined theoretical framework. Instead they have been suggested in a somewhat impressionistic manner. In the absence of a well-defined theoretical underpinning, the traditional univariate approach to financial statement analysis seems to be lacking in direction. It appears ad hoc, informal, subjective and somewhat disjointed.

**Development of Benchmarks** Many firms, particularly the larger ones, have operations spanning a wide range of industries. Given the diversity of their product lines, it is difficult to find suitable benchmarks for evaluating their financial performance and condition. Hence, it appears that meaningful benchmarks may be available only for firms which have a well-defined industry classification.

**Window Dressing** Firms may resort to window dressing to project a favourable financial picture. For example, a firm may prepare its balance sheet at a point when its inventory level is very low. As a result, it may appear that the firm has a very comfortable liquidity position and a high turnover of inventories. When window dressing of this kind is suspected, the financial



analyst should look at the average level of inventory over a period of time and not the level of inventory at just one point of time.

**Price Level Changes** Financial accounting, as it is currently practices in India and most other countries, does not take into account price level changes. As a result, balance sheet figures are distorted and profits misreported. Hence, financial statement analysis can be vitiated.

**Variations in Accounting Policies** Business firms have some latitude in the accounting treatment of items like depreciation, valuation of stocks, research and development expenses, foreign exchange transactions, installment sales, preliminary and pre-operative expenses, provision of reserves, and revaluation of assets. Due to diversity of accounting policies found in practice, comparative financial statement analysis may be vitiated.

**Interpretation of Results** Though industry averages and other yardsticks are commonly used in financial ratios, it is somewhat difficult to judge whether a certain ratio is 'good' or 'bad'. A high current ratio, for example, may indicate a strong liquidity position (something good) or excessive inventories (something bad). Likewise, a high turnover of fixed assets may mean efficient utilization of plant and machinery or continued flogging of more or less fully depreciated, worn out, and inefficient plant and machinery.

Another problem in interpretation arises when a firm has some favourable ratios and some unfavourable ratios- and this is rather common. In such a situation, it may be somewhat difficult to form an overall judgement about its financial strength or weakness. Multiple discriminate analysis, a statistical tool, may be employed to sort out the net effect of several ratios pointing in different directions.

**Correlation among Ratios** Notwithstanding the previous observation, financial ratios of a firm often show a high degree of correlation. Why? This is because several ratios have some common element (sales, for example, is used in various turnover ratios) and several items tend to move in harmony because of some common underlying factor. In view of ratio correlations, it is redundant and often confusing to employ a large number of ratios in financial statement analysis. Hence it is necessary to choose a small group of ratios, consisting of say six to nine ratios, from a large set of ratios. Such a selection requires a good understanding of the meaning and limitations of various ratios and an insight into the economics of the business.

## **2.5 GUIDELINES FOR FINANCIAL STATEMENT ANALYSIS**

From the foregoing discussion, it is clear that financial statement analysis cannot be treated as a simple, structured exercise. When you analyse financial statements bear in mind the following guidelines.

1. **Use ratios to get clues to ask the right questions:** By themselves, ratios rarely provide answers, but they definitely help you to raise the right questions.
2. **Be selective in the choice of ratios:** You can compute scores of different ratios and easily drown yourself into confusion. For most purposes a small set of ratios – three to seven – would suffice. Few ratios, aptly chosen, would capture most of the information that you can derive from financial statements.

3. **Employ proper benchmarks:** It is a common practice to compare the ratios (calculated from a set of financial statements) against some benchmarks. These benchmarks may be the average ratios of the industry or the ratios of the industry leaders or the historic ratios of the firm itself.
4. **Know the tricks used by accountants.** Since firms tend to manipulate the reported income, you should learn about the devices employed by them.
5. **Read the footnotes:** Footnotes sometimes contain valuable information. They may reveal things that management may try to hide. The more difficult it is to read a footnote, the more information it may be.
6. **Remember that financial statement analysis is an odd mixture of art and science.** Financial statement analysis cannot be regarded as a simple, structured exercise. It is a process requiring care, thought, common sense, and business judgement – a process for which there are no mechanical substitutes.

### SUMMARY

- Financial statements contain a wealth of information which, if properly analysed and interpreted, can provide valuable insights into a firm's performance and position. Analysis of financial statements is of interest to several groups interested in a variety of purposes.
- The principal tool of financial statement analysis is financial ratio analysis which essentially involves a study of ratios between various items or groups of items in financial statements. Financial ratios may be divided into five broad types: liquidity ratios, leverages ratios, turnover ratios, profitability ratios, and valuation ratios.
- Liquidity refers to the ability of the firm to meet its obligations in the short run, usually one year. Liquidity ratios are generally based on the relationship between current assets and current liabilities. The important liquidity ratios are: current ratio and acid test ratio.
- Leverage refers to the use of debt finance. Leverage ratios reflect the ratio of debt to equity and the ability of the firm to meet its debt-related commitments. The important leverage ratios are: debt-related ratio, times interest, and debt-servicing burden.
- Turnover ratios, also referred to as activity ratios or assets management ratios, measure how efficiently the assets are employed by the firm. These ratios are based on the relationship between the level of activity and the level for various assets. The important turnover ratios are: inventory turnover ratio, debtors' turnover ratio and total assets turnover ratio.
- Profitability ratios reflect the final results of business operations. There are two types of profitability ratios: profit margin ratios and rate of return ratios. Profit margin ratios show the relationship between profit and sales. The two popular profit margin ratios are: gross profit margin ratio and net profit margin ratio. Rate of return ratios reflect the relationship between profit and investment. The important rate of return ratios are: net income to total assets ratio, return on total assets, and return on equity.

- Valuation ratios indicate how the equity stock of the company is assessed in the capital market. Since the market value of equity reflects the combined influence of risk and return, valuation ratios are the most comprehensive measures of a firm's performance. The important valuation ratios are: price earnings ratios, yield, and market value to book value ratio.
- Generally, the financial ratios of a company are compared with some benchmark ratios. Industry averages often serve as benchmark ratios. Sometimes the ratios of a firm which is deemed to be representative may be used as benchmarks.
- While analysis based on a single set of financial statements is helpful, it may often have to be supplemented with time series which provides insight into a firm's performance and condition over a period of time. In this context, an analysis of time series of financial ratios is helpful.
- The Du Pont chart is a popular tool of financial analysis. A useful diagnostic tool, it provides insights into the two determinants of return on total assets: net profit margin and total assets turnover ratio. By including the financial leverage multiplier, the Du Pont analysis may be extended to explore the determinants of the return on equity.
- While financial statement analysis can be a very useful tool, there are certain problems and issues encountered in such analysis that call for care, circumspection, and judgement.

# Financial Appraisal of Projects

## 1. Introduction

Financial appraisal seeks to ascertain whether the proposed project will be financially viable in the sense of being able to meet the burden of servicing debt and whether the proposed project will satisfy the return expectations of those who provide capital. The aspects looked into while conducting financial appraisal are:

- Investment outlay and cost of project.
- Means of financing.
- Cost of capital.
- Project Profitability.
- Break-even point.
- Cash flows of the project.
- Investment worthwhileness judged in terms of various criteria of merit.
- Projected financial position and flows.
- Level of risk.

## 2. Significance of Decision

The investment decision is significant for four reasons:

1. Investment funds are limited and versatile.
2. Investment opportunities are plenty and varied in terms of return on investment (ROI) and risk.
3. Investment decisions have long term impact.
4. Investment decisions are practically irreversible.

## 3. Time Value of Money

Analysis of an investment project involves comparison of costs and benefits associated with it. It is not only the amount of costs and benefits that are relevant for this purpose, but also the timings of their occurrences. This is because money has time value for the following reasons:

- (a) Earning power of money
- (b) Inflation/deflation
- (c) Uncertainty

Whenever there are investment opportunities, money has the earning power. The earning power is represented by the opportunity cost of money, the least of which would be the

rate at which banks accept deposits. By this virtue, today's sum of money is equivalent to a larger sum in the future.

Money is needed not for its own sake but for its purchasing power, which varies inversely with the price level. Thus during inflation, today's sum of money is equivalent to a larger sum in the future.

"A bird in the hand is worth two in the bush". There is a trade off between a certain sum today and an uncertain sum in the future. Due to this uncertainty, today's sum of money is equivalent to a larger sum in the future.

### 3(a). Compounding Principle

Under the compounding principle, the future value of a present sum is found, given the earning power (interest rate) of money and the frequency of compounding. The general formula is:

$$Y = X (1 + I)^n$$

Where

Y = Final sum

X = Present sum

I = Interest rate per period (year)

T = Number of periods (Year)

Which on further generalization on the number of times interest is compounded to n times in a period leads to

$$Y = X (1 + I/n)^{nT}$$

**Exercise:** If you deposit Rs. 1,000 today in a bank which pays 10 per cent interest compounded annually, how much will the deposit grow to after 8 years and 12 years?

**Exercise:** How much does a deposit of Rs. 5,000 grow to at the end of 6 years, if the nominal rate of interest is 12 per cent and the frequency of compounding is 4 times a years?

### 3(b). Discounting Principle

This discounting principle is just the inverse of the compounding principle. Under this theory, one finds the present value of a future sum, given the rate of interest, the future date and

the frequency of discounting/the two discounting formulae corresponding to the three compounding formulas of above would be the following:

$$(i) \quad X = Y \left[ \frac{1}{1 + I} \right]^T$$

$$(ii) \quad X = Y \left[ \frac{1}{1 + I/n} \right]^{nT}$$

#### 4. Criteria for Evaluation

Let us take a hypothetical projects for the sake of simplicity, the above example assumes that all alternative projects have uniform investment cost (Rs. 25 lakhs), are commissionable within a year, and have uniform project life (3 years).

Project	Investment cost in a year	Net cash in flows in the year		
A	0	1	2	3
B	2500	2500	125	125
C	2500	1250	1250	1250
D	2500	500	1000	3000

##### 4(a). Payback Period

The pay back (or pay off) period is the number of years a project takes to recover its investment (original) cost. For calculating its value, one simply takes a cumulative sum of NCI until the sum equals (or exceeds) the investment cost. The number of years of which this amount is cumulative, gives the pay-back period. Putting it mathematically, the pay-back period is defined as P where P is the lowest value of t for which the following condition holds:

$$C \leq \sum_{t=1}^P R_t$$

where

C = Project (investment) cost

R<sub>t</sub> = net cash inflow in year t

If NCIs are uniform, the pay-back period (P) is given by

$$P = \frac{C}{R}$$

Where

R = NCI in a year

**Exercise:** For the four projects in the above hypothetical example, calculate the pay back period.

On the pay-back period criterion, a project would be acceptable if and only if its pay back period is no more than the desired pay-back period as stipulated by the investor.

**Evaluation:**

A widely used investment criterion, the pay-back period seems to offer the following advantages:

- (1) It is simple, both in concept and application. It does not use involved concepts and tedious calculations and has few hidden assumptions.
- (2) It is a rough and ready method for dealing with risk. It favours projects which generate substantial cash inflows in earlier years and discriminates against projects which bring substantial cash inflows in later years but not in earlier years. Now, if risk tends to increase with futurity – in general, this may be true – the payback criterion may be helpful in weeding out risky projects.
- (3) Since it emphasizes earlier cash inflows, it may be a sensible criterion when the firm is pressed with problems of liquidity.

The limitations of the payback criterion, however, are very serious:

1. It fails to consider the time value of money. Cash inflows, in the payback calculation, are simply added without suitable discounting. This violates the most basic principle of financial analysis which stipulates that cash flows occurring at different point of time can be added or subtracted only after suitable compounding/discounting.
2. It ignores cash flows beyond the pay-back period. This leads to discrimination against projects which generate substantial cash inflows in later years. To illustrate, consider the cash flows of two projects, A and B:

Year	Cash Flow of A	Cash Flow of B
0	Rs. (100,000)	Rs. (100,000)
1	50,000	20,000
2	30,000	20,000
3	20,000	20,000
4	10,000	40,000
5	10,000	50,000
6	-	60,000

The payback criterion prefers A, which has a payback period of 3 years, in comparison to B, which has a payback period of 4 years, even though B has very substantial cash inflows in years 5 and 6.

3. It is a measure of a project's capital recovery, not profitability

#### 4(b). Net Present Value

The net present value (NPV) of an investment is defined as the difference between the discounted value of all net cash flows (called the present value) and the capital cost of the project. Symbolically, it can be stated as:

$$NPV = \sum_{t=1}^T \frac{R_t}{(1+i)^t} - C$$

Where the new notation  $i$  stands for the appropriate discount rate. The NPV of project A at  $i = 10$  percent would thus be given by

$$NPV_A = \frac{2500}{1+0.10} + \frac{125}{(1+0.10)^2} + \frac{125}{(1+0.10)^3} - 2500 = -30$$

This means that if project A is undertaken, the investor would have a negative NPV of Rs. 30 thousands.

**Exercise:** Calculate the NPV of the remaining projects.

#### Evaluation:

The net present value criterion has considerable merits.

1. It takes into account the time value of money.
2. It considers the cash flow stream in its entirety.
3. It squares neatly with the financial objective of maximisation of the wealth of stockholders.
4. The net present value of various projects, measured as they are in today's rupees, can be added. For example, the net present value of a package consisting of two projects, A and B, will simply be the sum of the net present value of these projects individually:

$$NPV(A + B) = NPV(A) + NPV(B)$$

The additivity property of net present value ensures that a poor project (one which has a negative net present value) will not be accepted just because it is combined with a good project (which has a positive net present value).



The above mentioned advantages make the net present value a formidable investment appraisal criterion. Indeed, conceptually the net present value is virtually unassailable. However, from a pragmatic point of view, the net present value suffers from a limitation. As it is expressed as an absolute number, it is not readily intelligible to decision makers who may be wanted to think in relative terms (like rate of return of profitability index).

#### 4(c). Benefit – Cost Ratio

The benefit cost ratio (BCR) measure is essentially a variant of the NPV measure. Under this method, one takes the ratio of the discounted value of all the net cash flows from the project instead of their difference as under the NPV measure. Thus, mathematically, it is defined as:

$$\text{BCR} = \frac{\sum_{t=1}^T \frac{R_t}{(1+I)^t}}{C} = \frac{\text{PV}}{C}$$

The BCR from project at A at I = 10 per cent could be computed as

$$\begin{aligned} \text{BCR}_A &= \frac{\frac{2500}{1+1} + \frac{125}{(1.1)^2} + \frac{125}{(1.1)^3}}{2500} \\ &= \frac{2470}{2500} \\ &= 0.988 \end{aligned}$$

**Exercise:** Calculate the BCR of the other projects.

#### Evaluation:

The proponents of benefit cost ratio argue that since this criterion measures net present value per rupee of outlay, it can discriminate better between large and small investments and hence is preferable to the net present value criterion.

How valid is this argument? Weingartner who examined this criterion theoretically, finds that:

(1) Under unconstrained conditions, the benefit-cost ratio criterion will accept and reject the same projects as the net present value criterion. (2) When the capital budget is limited in the current period, the benefit cost ratio criterion may rank projects correctly in order of decreasingly efficient use of capital. However, its use is not recommended because it provides

no means for aggregating several smaller projects into a package that can be compared with a large project. (3) When cash outflows occur beyond the current period, the benefit cost ration criterion is unsuitable as a selection criterion.

#### 4(d). Internal Rate of Return

The internal rate of return (IBR) is defined as that rate at which NPV = 0. Mathematically it is given by

$$C = \sum_{t=1}^T \frac{R_t}{(1+r)^t}$$

Where,  
r = IRR

Using the IRR formula, the IRR from any project could be found if its capital cost and net cash inflows during the project life are known. Thus, the IRR from project A would be given by:

$$2500 = \frac{2500}{1+r} + \frac{125}{(1+r)^2} + \frac{125}{(1+r)^3}$$

Solution of the IRR equation for project A yields  $r = 8.8\%$

#### Evaluation:

A popular discounted cash flow method, the internal rate of return criterion has several virtues.

1. It takes into account the time value of money.
2. It considers the cash flow stream in its entirety.
3. It makes sense of businessmen who are wonted to think in terms of rate of return and find an absolute quantity, like net present value, somewhat difficult to work with.

The internal rate of return criterion, however, has its own limitations.

4. The internal rate of return may not be uniquely defined. If the cash flow stream of a project has more than one change in sign, there is a possibility that there are multiple rates of return.
5. The internal rate of return criterion can be misleading when choosing between mutually exclusive projects that have substantially different outlay. Consider projects P and Q.

Cash Flows		Internal Rate of return (%)	Net present value (assuming k = 12 per cent)
0	1		

P Rs. (10,000)	20,000	100	7,857
Q Rs. (50,000)	75,000	50	16,964

Both the projects are good, but Q, with its higher net present value, contributes more to the wealth of the stockholders. Yet from an internal rate of return point of view, P looks better than Q. Hence the internal rate of return criterion seems unsuitable for ranking projects of different scales.

## 5. Compatibility of Various Techniques

The various criteria discussed above, while usually yielding consistent investment decisions, are capable of producing inconsistent ranking decisions. The results of the exercise are detailed below:

Project	Payback Period	NPV (1 = 10%)	BCR Ratio Rank (1 = 10%)	IRR
	RANK	RANK	RANK	RANK
A	1	4	4	4
B	3	3	3	3
C	4	1	1	2
D	1	2	2	1

### Discuss:

What are the reasons for the inconsistencies?

## **Concepts of Project Management**

Project management is fast becoming an exciting new profession. Project managers are in great demand. They may be required for a publishing house, a university, agricultural rural development, social work or industrial construction projects. It appears they are required wherever there is work. Project management seems to have captured the attention of all those who are looking for results. The prospects were not so bright some years ago. For that matter even now, none of the universities in India offer a full-fledged degree course in project management. This necessarily poses a problem. What a project manager does in Company 'X' is not the same as what another does in Company 'Y'. Today anyone holding a responsible position in a project is a Project Manager – and if he pursues his own style in discharging his so-called project management responsibilities, he can hardly be blamed.

### **Concept of a Project**

To understand project management we must first understand what a project really is. We hear of cement projects, power projects, refinery projects, fertilizer projects, etc., but while the term project is common to all of them, the plants are not. In each case the project is for the plant but as soon as the plant is operational, the project is deemed to be completed. Similar is the case with any other project – say a project for methods improvement. The project is complete when methods improvement has been achieved. The explicit use of the term 'project' is not always necessary, even then it could be considered a project – our Lok Sabha election is such an example.

A project, therefore, is not a physical objective, nor is it the end-result – it has something to do with the goings on in between, which must be same, whether we build a high technology process plant or merely hold an election, to deserve a common name and to be termed as a project.

To understand what a project is, let us study how a project is conceived. In a business setting, whether in the public or private sector, an organisation must grow at least for the sake of its survival. The organisation, therefore, is continuously on the lookout for good business ideas which may require growth, either on the existing lines of business or in diversified areas. But the idea must be technically feasible, economically viable, politically suitable and socially acceptable. Once the ideas pass these tests, an investment proposal is made. When the investment proposal is approved, the project commences.

A project is, thus, initiated to achieve a mission – whatever the mission, may be. A project is completed as soon as the mission is fulfilled. The project lives between these two cut-off points and, therefore, this time-span is known as project life cycle.

What then is a project? It starts from scratch with a definite mission, generates activities involving a variety of human and non-human resources all directed towards fulfillment of the mission and stops once the mission is fulfilled. The Project Management Institute, U.S.A. has a

good definition for it. A project, according to the institute, is a one-shot, time limited, goal directed, major undertaking, requiring the commitment of varied skills and resources.” It also describes a project as “a combination of human and non-human resources pooled together in a temporary organisation to achieve a specific purpose.” The purpose and the set of activities which can achieve that purpose distinguish one project from another.

### **Characteristics of a Project**

A project is typified by its various characteristics. To start with, a project is a big work-but it is basically a work – one whole thing. This means that while there may be contributions from many different people, it can still be recognised as one whole thing. A comparison can be made with a book to fully understand it. While there may be many chapters in the book, sometimes written by different authors, the book is a single entity and is supposed to serve a single purpose. The various works that constitute the whole are inter-related and together they tell the whole story. In the same way, all works that are inter-related and are being performed to serve a common purpose can be grouped together and termed as a project, only if it could be made into a composite affair. When this approach for grouping of work is used many work environment, we may say that work has been ‘projectised’.

With a project, we have seen that there is a concept of wholeness despite diversities of work. The concept of wholeness does, of course, exist in a factory, an office or in any other work situation also. The difference is that in case of a project the whole has to be completed in one shot – once and for all. It is not a process that can perpetuate. It can, of course, be repeated but only in blocks of whole, similar to batch mode of production in a factory.

Also, with a project there is some sort of a missionary zeal, an unknown force, pushing people forward for achievement of something beyond their immediate work. The completion of one’s own work, and whatever it may result in, does not seem to be what one is really working for in a project. One would never say that one’s project is complete till the whole thing is complete and is performing satisfactorily. That is the spirit of the project, which makes everyone feel important, contributing to a big cause, though in reality he may actually be a very small cog in the big wheel of the project.

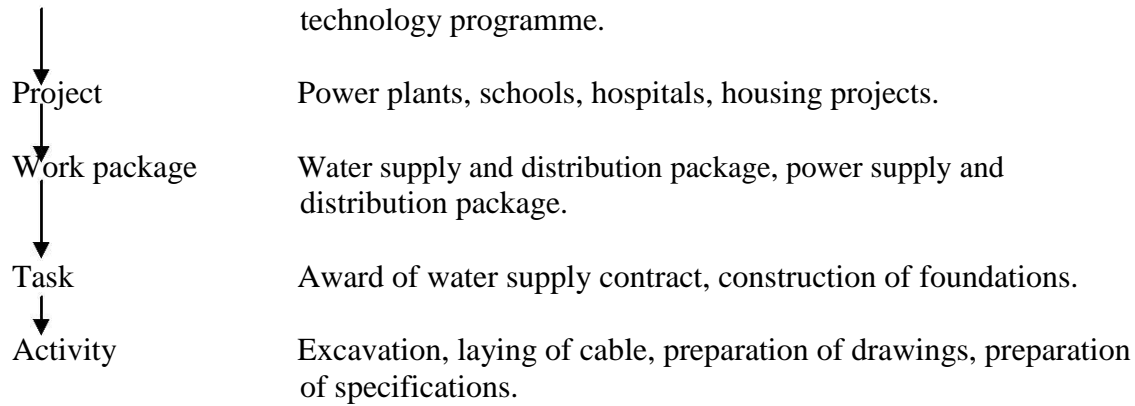
The special features of a project that would differentiate it from any other ongoing activity, say production, can be summarised as in Table 1.1.

### **Project Family Tree**

A project normally originates from a plan-national plan or corporate plan. In the normal scheme of things, the family tree for a project would be as in Fig. 1.1. Sometimes, however, the term project may be used for what should be termed as programme or work package. This is not quite unexpected in view of their closeness in the hierarchy. A programme is not the same thing as a project; for one thing, it is not time limited like a project and also its scope and boundaries are not so well delineated. It is, however, another thing that the approach for management of programmes may be the same as that for a project.

Table 1.1 Characteristics features of a project

Sl. No.	Characteristic features	
1.	Objectives	A project has a fixed set of objectives. Once the objectives have been achieved, the project ceases to exist.
2.	Life span	A project cannot continue endlessly. It has to come to an end. What represents the end would normally be spelt out in the set of objectives.
3.	Single entity	A project is one entity and is normally entrusted to one responsibility centre while the participants in the project are many.
4.	Team work	A project calls for team work – the team again is constituted of members belonging to different disciplines, organisations and even countries.
5.	Life cycle	A project has a life cycle reflected by growth, maturity and decay. It has, naturally, a learning component.
6.	Uniqueness	No two projects are exactly similar even if the plants are exactly identical or are merely duplicated. The location, the infrastructure, the agencies and the people make each project unique.
7.	Change	A project sees many changes throughout its life. While some of these changes may not have any major impact, there can be some changes which will change the entire character or course of the project.
8.	Successive principle	What is going to happen during the life cycle of a project is not fully known at any stage. The details get finalised successively with the passage of time. More is known about a project when it enters the construction phase than what was known, say, during the detailed engineering phase.
9.	Made to order	A project is always made to the order of its customer. The customer stipulates various requirements and puts constraints within which the project must be executed.
10.	Unity in Diversity	A project is a complex set of thousands of varieties. The varieties are in terms of technology, equipment and materials, machinery and people, work culture and ethics. But they remain interrelated and unless this is so they either do not belong to the project or will never allow the project to be completed.
11.	High level of sub-contracting	A high percentage of the work in a project is done through contractors. The more the complexity of the project, the more will be the extent of contracting. Normally around 80% of the work in a project is done through sub-contractors.
12.	Risk and uncertainty	Every project has risk and uncertainty associated with it. The degree of risk and uncertainty will depend on how a project has passed through its various life cycle phases. An ill defined project will have extremely high degree of risk and uncertainty. Risk and uncertainty are not part and parcel of only R & D projects – there simply cannot be a project without any risk and uncertainty.
<hr/>		
Plan	National/Corporate plan with targets for growth.	
↓		
Programme	Health programme, educational programme, science and	

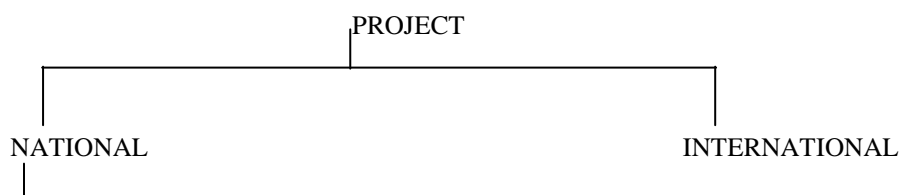


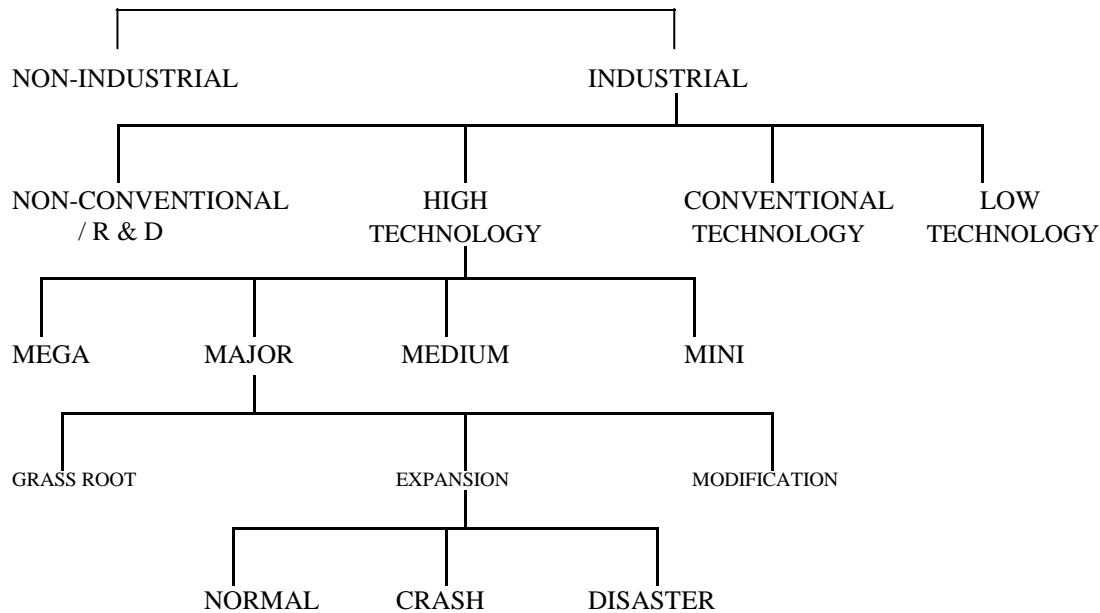
**Fig. 1.1 Project family tree**

Similarly, a work package is not a project though it may be so treated for the purpose of its management. Several work packages will constitute a project. A work package, however, has to be time limited as there is absolutely no ambiguity regarding its scope and boundaries.

### Categories of Project

Much of what the project will comprise and consequently its management will depend on the category it belongs to. The location, type, technology, size, scope and speed are normally the factors which determine the effort needed in executing a project. Figure 1.2 shows the various categories not which industrial projects may be fitted. A grass root mega-high technology project is not the same thing as a modification work in a low technology mini plant – though both will be seen as projects. Therefore, though characteristics of all projects are the same, they cannot be treated alike. An R & D project even though value-wise it may belong to the mini category, it must not receive the same attention as a low – technology mini plant. Recognition of this distinction is important for management of project. Projects are often categorised in terms of their speed of implementation. Management of disaster projects, often categorised in terms of their speed of implementation. Management of disaster projects, as in the case of the Bhopal gas tragedy, would not belong to the same category as that of putting up a plant in a normal situation – say, the same insecticide plant itself. The Asiad project is another example which was not exactly normal and illustrates the point that any another project would not be executed in the same way. Depending on the speed needed for execution of a project, there can be further categorisation as below:





**Fig. 1.2 Categories of projects**

**Normal Projects** In this category of projects adequate time is allowed for implementation of the project. All the phases in a project are allowed to take the time they should normally take. This type of project will require minimum capital cost and no sacrifice in terms of quality.

**Crash Projects** In this category of projects additional capital costs are incurred to gain time. Maximum overlapping of phases is encouraged and compromises in terms of quality are also not ruled out. Savings in time are normally achieved in procurement and construction where time is bought from the vendors and contractors by paying extra money to them.

**Disaster Projects** Anything needed to gain time is allowed in these projects. Engineering is limited to make them work. Vendors who can supply ‘yesterday’ are selected – irrespective of the cost. Quality short of failure level is accepted. No competitive bidding is resorted to. Round – the – clock work is done at the construction site. Naturally, capital cost will go up very high, but project time will get drastically reduced.

### **Project Life Cycle Phases**

The attention that a particular project receives is again not uniformly distributed through out its life span, but varies from phase to phase. At a particular phase of project life, depending on the requirement of that phase, appropriate attention has to be paid. We, therefore, need to know the various phases in the life of a project. By and large, all projects have to pass through the following five phases:

1. Conception phase
2. Definition phase
3. Planning and organising phase



4. Implementation phase
5. Project clean-up phase

While ideally these phases should follow one another in sequence, this rarely happens in real life. Not only do the succeeding phases overlap with the preceding ones, it is also not too uncommon to find complete overlap of all the phases. Sometimes this overlapping is done deliberately in the interest of compressing the overall project schedule. There are others who would encourage natural growth. To understand this aspect fully, we need to discuss the life cycle phases in a little more detail.

### **Conception Phase**

This is the phase during which the project idea germinates. The idea may first come to the mind when one is seriously trying to overcome certain problems. The problems may be non-utilisation of either the available funds, plant capacity, expertise or simply unfulfilled aspirations. When one is seized with the problems, he looks in and around to find out ways of overcoming them. It may so happen that an idea will suddenly come to his mind as he surveys the environment. It is also possible that ideas will be put to him by his well wishers or those working on the problems for him. Whatever may be the case, the ideas need to be put in black and white and given some shape before they can be considered and compared with competitive ideas.

An operating cement plant may be having low capacity utilisation, high power consumption and consequently higher cost of production. In such a situation it might be a good idea to introduce new technology, replace some critical items selectively or scrap the plant altogether. There may be financial constraints, the existing staff may need to be on roll, limestone deposits may last for limited number of years and so on. The ideas need to be examined in light of objectives and constraints and what finally becomes acceptable may form the future project. All projects are usually conceived this way.

It is easy to appreciate that if this phase is avoided or truncated; the project will have innate defects and may eventually become liability for the investors. In this phase, however, it is not supposed to be considered as to how the project will be implemented. Considerations of later phases of a project life when the project is not even born will not only prolong this period but may end up in unnecessary arguments. It is just like considering which medical college your child would be admitted to when the child is still in the womb.

A well conceived project will go a long way for successful implementation and operation of a project. It is quite possible that ideas may undergo some changes as the project progresses. This is understandable since at the conception stage all pertinent data are not available and also the real life scenario may undergo considerable change compared to what may have been assumed initially.

### **Definition Phase**

The definition phase of the project will develop the idea generated during the conception phase and produce a document describing the project in sufficient details covering all aspects necessary

for the customer and/or financial institutions to make up their minds on the project idea. The areas to be examined during this phase, say for a cement plant, may be as follows:

1. **Raw Materials** Qualitative and quantitative evaluation of limestone reserves.
2. **Plant size/capacity** Enumeration of plant capacity for the entire plant and for the main departments.
3. **Location and site** Description of location supported by a map.
4. **Technology/process selection** Selection of optimum technology, reasons for selection and description of the selected technology.
5. **Project layout** Selection of optimum layout, reasons for selection and appropriate drawings.
6. **Plant and Machinery** Selection of optimum equipment, reasons for selection, description of selected equipment and machinery, stating number, type, specification, capacity, source and cost.
7. **Electrical and instrumentation works** Listing the broad features of the major electrical and instrumentation items, suggesting a broad scheme for power distribution and power grid map.
8. **Civil Engineering works** Selection of optimum civil works, reasons for selection, description of selected civil work and cost estimates.
9. **Utilities – fuel, power and water** Selection and description of utilities stating qualitative properties, quantities, source, availability and unit costs.
10. **Manpower and organizational pattern** Selection of labour and staff considering organizational structure/layout, skill requirement and level of training, availability and cost estimates.
11. **Financial analysis** Total investment costs, sources of finance, total production costs and evaluation of financial viability.
12. **Implementation schedule** This phase, therefore, clears some of the ambiguities and uncertainties associated with the formation made during the conceptual phase. This phase also establishes the risk involved in going ahead with the project in clear terms. A project can either be accepted or get dropped at this stage itself.

But what is the industry practice? In most cases, it may be seen that the effort during this phase is concentrated in protecting the project conceived during the

conceptual stage. Anything else would amount to killing an embryo. What, therefore, sometimes comes out at this stage is what will satisfy the customer or the bank authorities. No wonder this phase is repeated – sometimes with different agencies and under different names. Sometimes studies in further depth are also asked for. But it is clear, if this phase is not done properly, it will increase the risk content of the project. Haste makes waste. Further, avoidance of this step or allowing this phase to proceed with the implementation phase can be expensive and often disastrous for the project. This has led the bank authorities to introduce strict appraisal procedures for the clearance of a project. Thus, ideally, a project can be said to have been born only after it has been cleared for implementation at the end of the definition stage. We will discuss more on this subject later.

### **Plan and Organising Phase**

This phase can effectively start only after definition phase but in practice it starts much earlier, almost immediately after the conception phase. This phase overlaps so much with the definition and also with implementation phases that no formal recognition is given to this by most organisations. Some organisations, however, prepare documents such as Project Execution Plan to mark this phase.

By and large, organisations, during this phase, deal with the following, and in most cases take necessary action for realisation of the same.

1. Project infrastructure and enabling services
2. System design and basic engineering package
3. Organisation and manpower
4. Schedules and budgets
5. Licensing and governmental clearances
6. Finance
7. Systems and procedure
8. Identification of project manager
9. Design basis, general conditions for purchase and contracts
10. Site preparation and investigations
11. Construction resource and materials
12. Work packaging

Thus, this phase is involved with preparation for the project to take off smoothly. This phase is often taken as a part of the implementation phase since it does not limit itself to paper work and thinking but many activities, including field work, are undertaken during this phase.

Planning, as it is often defined, is making a decision in advance. If this is not done, we will only be resolving crisis after crisis. It is, therefore, essential that this phase is completely gone through before three next phases, namely, the implementation phase starts. Many of the decisions and actions taken during this phase relate to project basics, and if the project jumps into the implementation phase without freezing the basics, the project is bound to falter and flounder if not fail altogether. We will discuss more about this phase later.

## Implementation Phase

This is a period of hectic activity for the project. It is during this period that something starts growing in the field and people for the first time can see the project. Preparation of specifications for equipment and machinery, ordering of equipment, lining up construction contractors, issue of construction drawings, civil construction and construction of equipment foundations, equipment and machinery erection, plant electricals, piping instrumentation, testing, checking, trial run and commissioning of the plant take place during this phase. As far as the volume of work is concerned, 80-85% of project work is done in this phase only. Naturally, therefore, people want to start this phase as early as they can. Since the bulk of the work in a project is done during this phase only, people will always want this phase to be completed in as short a time as possible. All techniques of project management, therefore, are applied to this area essentially.

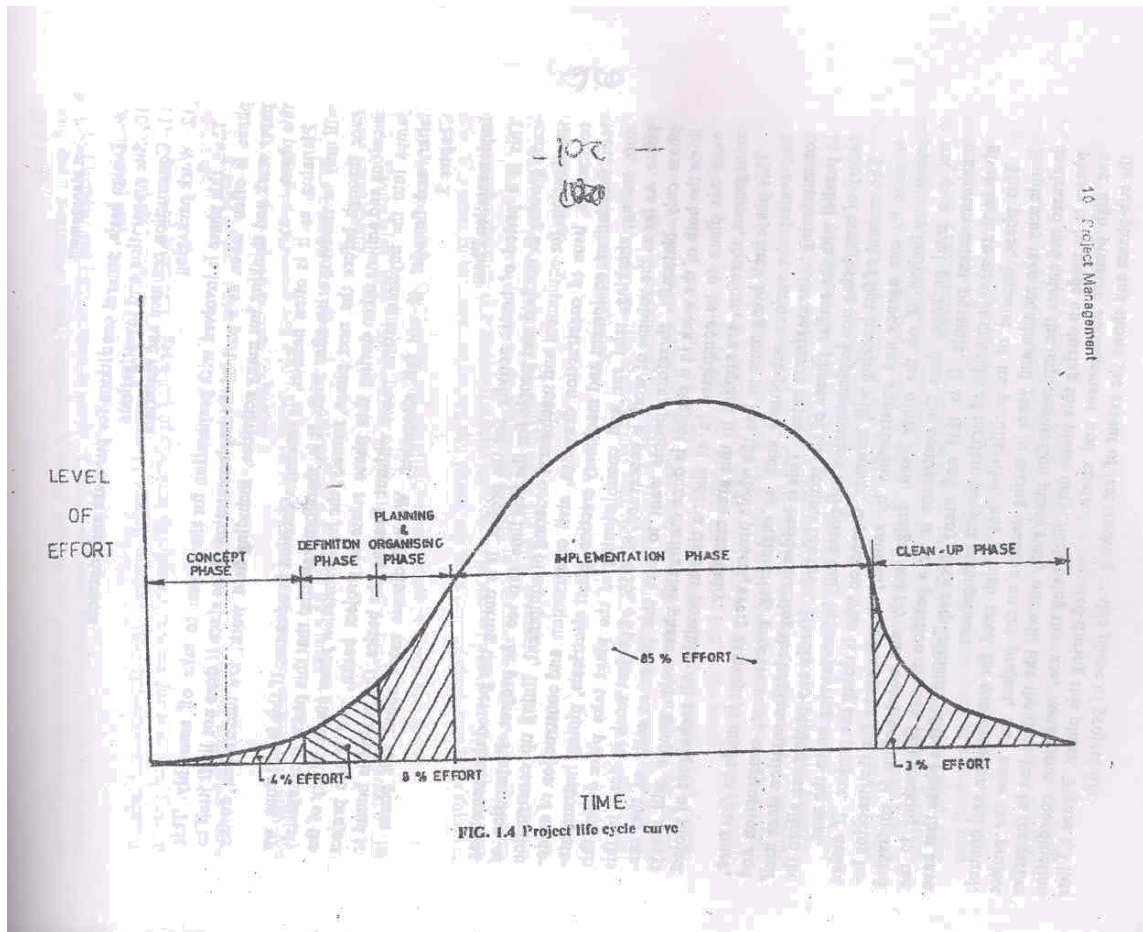
This phase itself being more or less the whole project every attempt is made to fast track, i.e., overlap the various sub-phases such as engineering, procurement, construction and commissioning to the maximum extent. This is besides starting the implementation stage itself in parallel with the earlier phases of the project life cycle. Hardly any project can afford the luxury of completing one implementation sub-phase fully before moving on to the next.

The amount of fast tracking will, however, depend on who is doing the project. If design is done by one agency and construction by another, then the scope for fast tracking becomes very limited. If, on the other hand, design, supply and construction is contracted out as a total package, then the contractor is in a position to use fast tracking to the maximum extent possible. It is this and many such requirements of this phase that have given birth to what is considered modern project management.

This phase, because of its peculiarities, has a high need for coordination and control. People may take months and years in taking decision on the project, but once the project is cleared and enters the implementation phase every one will like the time lost in the earlier phases to be made up during this phase only. Such being the case, meticulous coordination and high pressure management and control is required during this phase. Figure 1.3 lists the sub-phases and shows the extent of fast tracking in this phase of project life.

Sub Phase No.	Sub Phase Description	Months											
		1	2	3	4	5	6	7	8	9	10	11	12
I	DETAILED ENGINEERING												
II	ORDERING												
III	DELIVERY												
IV	CONSTRUCTION & ERECTION												
V	START UP												





**Fig.1.4 Project life cycle curve**

This parabolic pattern of growth, maturity and decay manifests itself in all phases of the project life. Thus, in the implementation phase of a project, the life cycle pattern is evident in detailed engineering, ordering, delivery, construction/erection and start up. And for a particular class or projects this pattern may be characteristic of that project class. This knowledge of a characteristic life cycle curve enables a project manager to ascertain the state of health of any project at any point of time.

Figure 1.5 shows life cycle curves and associated line of balance. The life cycle curves here have been drawn in 'S' curve form to represent cumulative growth at any time. If the curves are drawn to indicate the minimum growth required for a sub-phase at any point of time to meet the targeted completion date of a project, then a line of balance can be drawn from the same to indicate the state of health of a project.

Figure 1.5 (b) indicates the qualifying standard of health for a project at the 18<sup>th</sup> month. This has been drawn by reading the minimum progress prescribed in Fig. 1.5(a). If the actual progress in any of the sub-phases falls short of the qualifying work for that sub-phase, then that sub-phase is sick and requires treatment. Thus the concept of a characteristic life cycle curve for a project

phase is very useful for the management of a project. We will discuss more about life cycle curves and line of balance later on.

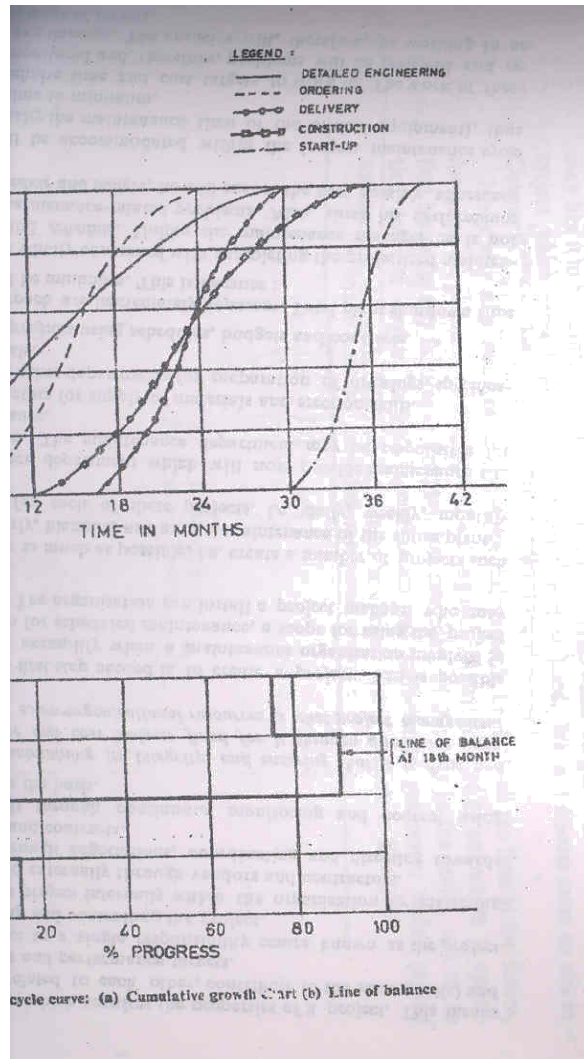
## **Project Visibility**

A project cannot be seen for most of its life time. It starts with everything vague and fluid and for almost half of its life span it shows no concrete benefits. Only towards the end of the project people seem to be seeing the project. Though we have made it clear at the beginning that a project is not a plant, people seem to have problems in accepting the fact. Accountants, in particular, want solid proof of progress before they release payment. While proof of progress can be given, it may not be possible to produce 'solid' evidence for verification.

This non-visibility of a project also causes problems for its management. How to grapple with a thing which is yet to come and be seen? A project becomes visible slowly as it grows. Initially, one can only imagine what it would eventually be, but only the passage of time can give it a concrete shape. At any point in the life cycle something will be clearly visible, something nearly visible, but the rest will still have to be imagined. Figure

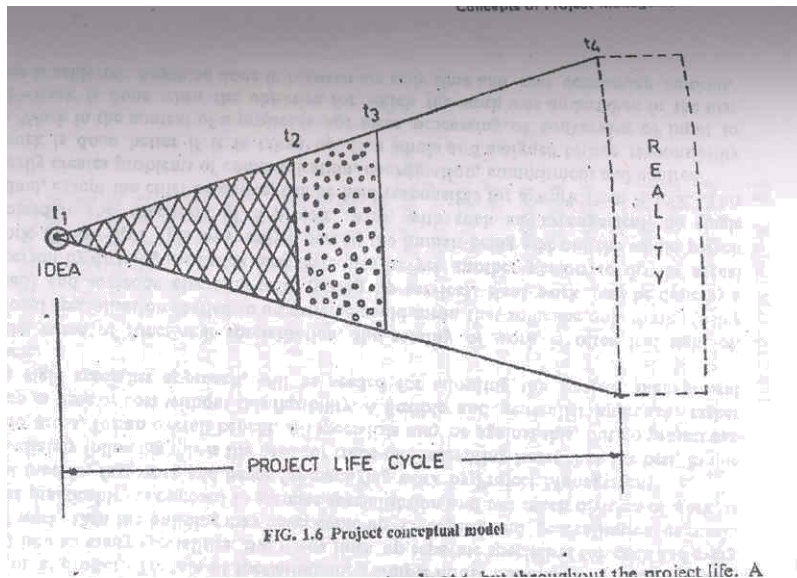
Shows the conceptual model explaining this phenomenon. At  $t_1$ , visibility is zero – it requires total projection. At  $t_2$  time, part of the project preceding time  $t_2$  becomes visible, and something upto  $t_3$  may become nearly visible. – the rest will still have to be a projection. One who wants to know a project has, therefore, to go on projecting all the time to get an idea of the reality – since there is simply no other way. Perhaps this aspect of the project life would justify the term project being used to describe the efforts of multitudes of men and machines engaged in the conversion of an idea into reality.

While visibility demonstrates progress, it may not mean much to some people. To the user, project value may remain near zero not only at  $t_1$  but throughout the project life. A project abandoned in between has zero value; the full value of the project is realised only at the end.



**Fig. 1.5 Life cycle curve; (a) Cumulative growth chart (b) Line of balance**





**Fig. 1.6 Project conceptual model**

## Project Management Concepts

The peculiarities described so far about a project require a special approach to ensure the success of the project. We may term this special approach as *project management*. Now success for a project means:

1. It must get completed.
2. It must be completed within budget
3. It must get completed within allocated time
4. It must perform to satisfaction.

Project management meets these demands.

The success, however, can be achieved only through people. To that extent the principles of general management must apply to project management also. What makes project management different is approach to task which besides its specification, is fully bound by time, cost and performance targets.

## Steps in Project Management

Project management approach basically consists of the following five steps:

1. Grouping work into packages which acquires the properties of a project. This means that the works so grouped are related to each other, contribute to the same goal(s) and can be bound by definite time, cost and performance targets.
2. Entrusting the whole project to a single responsibility centre known as the project manager for coordinating, directing and controlling the project.
3. Supporting and servicing the project internally within the organisation by matrixing or through total projectization, and externally through vendors and contractors.

4. Building up commitment through negotiations, coordinating and directing towards goals through schedules, budgets and contracts.
5. Ensuring adherence to goals through continuous monitoring and control using schedule, budgets and contracts as the basis.

Defining what is to be done, maintaining its integrity, and ensuring that it is done and performed as desired, within time and cost budgets fixed for it through a modular work approach, using organisational and extra-organisational resources is what project management has to achieve.

To use project management the first step needed is to create a project. This is possible even in a routine situation. To exemplify when a maintenance organisation involved in routine maintenance decides to go for scheduled maintenance, a scope for using the project management approach is created. The organisation can install a project manager who may take the following steps:

1. Projectise maintenance work as much as possible, i.e., create a number of projects such as daily, weekly, monthly, quarterly, biannual and annual maintenance of the entire plant.
2. Set cost and time targets for each of these projects, i.e., daily, weekly, monthly maintenance, etc.
3. Matrix with the maintenance department which will now provide maintenance still including labour and supervision. The maintenance department may be responsible for breakdown and running maintenance.
4. Line-up vendors and contractors for supply of materials and erection skills.
5. Matrix and coordinate with other departments for preparation of drawings, specifications and procurement of materials.
6. Monitor and control these projects using schedules, budgets and contracts.

The benefits of such an approach are immediately apparent. Total plant shutdown time as also the maintenance cost will be minimum. This is because:

1. The project manager will be wholly concerned with completing the projectized maintenance work within the budget and schedule. Unlike the maintenance manager he is not concerned with the day-to-day maintenance related problems. Also, since his performance will be evaluated in terms of schedule and budget, he will ensure the best possible adherence to the same.
2. All maintenance work will be accommodated within the longest maintenance cycle time known as critical path (usually the maintenance time of the critical equipment), thus reducing the total plant down time to minimum
3. Each agency will have definite time and cost targets to work to. The work of these agencies will be continuously monitored and, therefore, problems will be reviewed and resolved even before they cause any damage. The agencies will, therefore, be working in an environment conducive to fulfillment of targets.

4. A project manager manages what he projects. He is, therefore, concerned with how to achieve the next target and not to make a fuss as to why the previous targets have not been achieved. This approach makes things work, as people then gear themselves for future successes and not prepare cases in defence of their past failures.
5. Since the project manager will have the necessary authority to take most of the decisions relating to his project, decisions will be made faster. Project management depends on maximum lateral coordination and this make it possible not only to take fast decisions but also enables fast implementation of decisions.

### **Project Management v. Functional Management**

The need for using the project management approach in preference to the functional management approach can be better appreciated if we consider the following two aspects of project work.

1. All work has inter-dependence and inter-relationship with others. Nothing stands alone and isolated. No good decision can be made without considering all inter-related things and no useful thing can be achieved without completing the whole. The importance of any work depends on how it stands in relation to others and to the whole.
2. The work and the inter-relationships are liable to change with time but still the end objective does not change. The future, thus, being uncertain, one needs to always keep an eye on the future and adapt himself very fast to the changed needs of the future. A static plan will not work – quick responses and flexibility are essential for dealing with ever-changing dynamic situations.

Structuring of responsibilities based on specialisation would not meet these basic requirements of a project. To talk of specialisation, a simple house building work itself could be divided into so many specialities. But if one lines up separate specialists for each and every type of work, then the building may never come up. Grouping and generalisation of work, as far as practicable, as opposed to extreme specialisation and too much division of work, is the first need for fast work and hence for managing work by Project Management.

Immediately following this is the need for trade off – accepting lesser than the best, in one or more areas, for an overall benefit. All specialists may be against this, but no project can come up in time or cost without this flexibility. A flexible and generalist approach, rather than a rigid specialist approach, will be needed for adopting the project management approach.

In the name of functional specialisation, the totality of work is often lost sight of. Functional specialisation carried to an extreme could mean that someone only thinks (using the head) and someone else only talks (giving lip service). Real work may be done by a third person by dirtying his hands, and there may be yet another person to do the actual leg work (follow-up). This way only a part of the human being and not the whole person is involved in the execution of a project. Also, with such an arrangement, no single individual, except the chief executive, can be held responsible for a work from A to Z. This necessarily creates problems of communication, coordination, commitment and control.

A work is done better if it is taken up as a whole and assigned to one responsibility centre. Work in the context of a project is not mere processing or conversion of input to output – work is done when the objective for which the work was undertaken in the first instance is achieved. Anything done in between are only time and cost consuming motions.

One has not done any work but merely involved himself in exercising motions till the ultimate objective is achieved. This concern for the ultimate objective is the motivating force for the project management approach.

To practice project management one must be able to distinguish what is part and what is whole – what is motion and what is work. Unless this is fully driven into everyone's mind, energy will be wasted in useless motions. The project management approach is, therefore, a necessity for all of us whether we are building a multi-billion dollars high technology project or running a simple automobile shop for it simply means dedicating ourselves to the end objective and keeping the totality in focus all the time.

Project Management, like functional management, will require getting things done through people but with a little difference. The people this time will be more in number from the environment than the people within the organisation. Naturally, they will also not be bound by the organisation's own work ethics and discipline. We may be required to get the work done much the same way we do in our social setting. Many may find this uncomfortable, as it would require a lot of patience and skilled listening and negotiating capability.

Besides, in project management the work gets done mostly through lateral and diagonal contacts, the hierarchical protocol is almost non-existent. Communication is faster, decisions are taken quickly and at a lower level and unnecessary repetition of reports to involve and apprise authorities at higher levels for routine and petty decisions are avoided. But while the freedom exists for communication, sorting out problems and decision making commensurate with responsibilities at lower level, the higher level are always kept informed involved if the situation so demands. This style of operation is characteristic of project management – whether the structure is purely projectised, matrix or functional. The protocols of the organisational hierarchies, salary levels and designations are all unimportant as far as working relationships are concerned. Project management presupposes that the human organisation is created to manage a physical system which has a natural inter-relationship and interdependence and therefore, the human system must correspond to the physical system and respond to the demand of the physical system without creating another artificial system based on class, creed and colour. Ideally the human organisational system should be a mirror image of the physical system, but this again is not possible no matter how much we may like it to be identical. But we cannot, at the same time, forget that it is the physical system which came first and is the basic issue in hand.

Many may also not like to projectize their outlook, i.e. look all the time at the future, foregoing the pleasures of digging and delving into the past for finding out whom to apportion blame for any failures in the past. But overriding all this may be the desire, not to be tied down to targets, budgets, specifications and performance guarantees which project management demands. Who would like to be chained if it is possible to live free?

## Project Management Using PERT/CPM

Managers and administrators are often given large projects to manage. Projects can deal with construction of stadia for a major sports meet, constructing a high rise building, or conducting a census, election, market survey, etc. A project generally has a large number of activities and each activity requires time and resources. When the activities in a project are many, sequential dependence is complex and resource requirement is wide ranging. Thus it becomes difficult to manage such projects. This may lead to delays in the project and also escalate costs. Managers, therefore, need techniques which can be used to plan new projects and monitor ongoing projects. In addition these techniques should help in reducing the project duration and cost.

The Critical Path Method (CPM) and Project Evaluation and Review Technique (PERT) are the most popular network based techniques for project management. These techniques meet the above requirements of the project manager. When the duration of activities is known with certainty, CPM is used. When activity durations are random, having a probability distribution, then PERT is used. CPM is a special case of PERT. Here, we shall deal with projects whose activity times are known with certainty.

The first step in Project Management is to identify all activities and to list these in a table. The second step is to identify the precedence relationship of the activities. These relationships are also shown in the same table (sometimes called Precedence Table).

With the help of the data collected/generated in the last two steps we can develop a network. The network shows activities that can be done simultaneously and activities that must be completed before starting another activity. The start and finish dates of activities are sometimes shown in square brackets and the progress of activities by arcs/branches.

The third step is to estimate the duration of each of the activities. These are shown in the original table as well as on the network.

The project network can now be analysed to:

- Compute minimum project completion time.
- Identify activities which cannot be delayed without delaying the project.
- Identify activities which can be delayed within limits without delaying the project.
- Compute start and finish dates of activities.
- Compute maximum delays for non-delaying (non-critical) activities.

If the resource requirements of each of the activities is known we can also compute:

- Daily/weekly/monthly/yearly resource requirements.

- Re-schedule activities to meet maximum resource availability constraints.
- Develop strategies to reduce project cost.

### Example

Let a project have seven activities named a to g. The precedence relationship of the activities and their durations are given in the Table below.

Table 1: Precedence Table

Activity	Immediate	Duration	Alternate
Name	Predecessor	(days)	Naming System <sup>3</sup>
a	-	3	(1,2)
b	a	4	(2,3)
c	b	2	(3,5)
d	c	5	(5,6)
e	a	7	(2,4)
f	e	6	(4,6)
g	d,f	4	(6,7)

From the above table (first two columns) we can make a project network (Fig. 1.) Each activity is represented by an arrow. The activities are separated by nodes (circles). The duration of activities is also shown on the network.

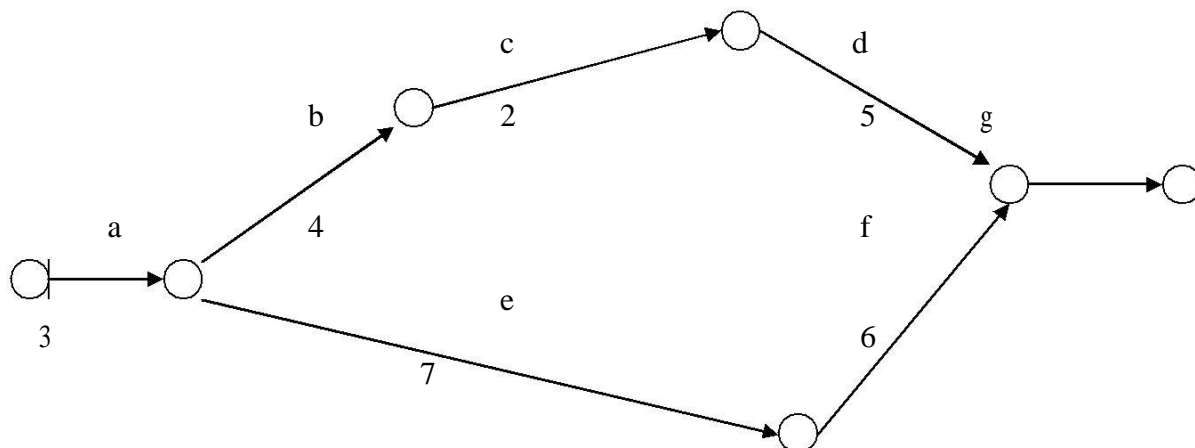


Figure – 1

<sup>3</sup> Alternate Naming System: Another way of identifying an activity is with reference to its start and finish nodes e.g. activity a can also be called (1,2). Nodes are numbered according to Fulkerson's Rule which is as follows; Number 1 is given to the initial node which has no entering arrows. Then all arrows originating from the numbered node (no.1) are erased. Number 2 is given to the next node which emerges as an initial node with no entering arrows. This process is repeated till all the nodes are numbered.

There are two paths from start to finish of the project.

	Activities	Duration
Path 1:	a b c d g	$3 + 4 + 2 + 5 + 4 = 18$
2:	a e f g	$3 + 7 + 6 + 4 = 20$

Path 2 takes two days more than the first path. The path (from start to finish) which takes maximum time is called the critical path. The activities on the critical path are called critical activities. Thus path 2 is critical and activities a, e, f and g are critical activities. The sum of the durations of activities on the critical path gives the minimum time required to finish the project. The minimum time required to finish this project is 20 days ( $3 + 7 + 6 + 4$  / a + e + f + g).i am here

Activities not on the critical path are called non-critical/slack activities. The non-critical activities of the project are b, c and d.

We shall now compute the start and finish dates of all the activities. We start with the first activity of the project – a – and move towards the last activity in a sequential way. To simplify calculations, the starting time is always taken to be zero. Actual dates may be entered subsequently.

Activity a can be started at time zero. The activity will finish on the 3<sup>rd</sup> day. Activity e can now be started on the 3<sup>rd</sup> day. This activity will finish on the 10<sup>th</sup> day. Activity f can be started on the 10<sup>th</sup> day and will finish on the 16<sup>th</sup> day. Activity b can start on the 3<sup>rd</sup> day and will finish on the 7<sup>th</sup> day. Activity c can be started only on the 9<sup>th</sup> day. Activity d can start on the 9<sup>th</sup> day and will finish on the 14<sup>th</sup> day. Activity g can start when both d and f are finished. As d finishes on the 14<sup>th</sup> day and f on the 16<sup>th</sup> day, activity g can start only on the 16<sup>th</sup> day after both activities d and f are finished. Activity g will finish on the 20<sup>th</sup> day.

We have seen that even if activity d is delayed upto 2 days (to finish on 16<sup>th</sup> day) the start of activity g is not delayed. These two days are called slack / float. Slack helps in scheduling of activities to smoothen the resource requirement, reduce peak resource requirement and reduce the cost of the project.

Start and finish dates computed by using the forward pass (moving from start to finish) are called early start and early finish dates. The start and finish dates (columns 2 and 3) of all activities are summarised in the Table given below as well as in Fig. 2.

Table 2: Activity start/finish dates

Activity	Start (early)	Finish (early)	Start (late)	Finish (late)	Slack
(1)	(2)	(3)	(4)	(5)	(6)

a*	0	3	0	3	0
b	3	7	5	9	2
c	7	9	9	11	2
d	9	14	11	16	2
e*	3	10	3	10	0
f*	10	16	10	16	0
g*	16	20	16	20	0

- Critical activities (slack = 0, ES = LS and EF = LF)

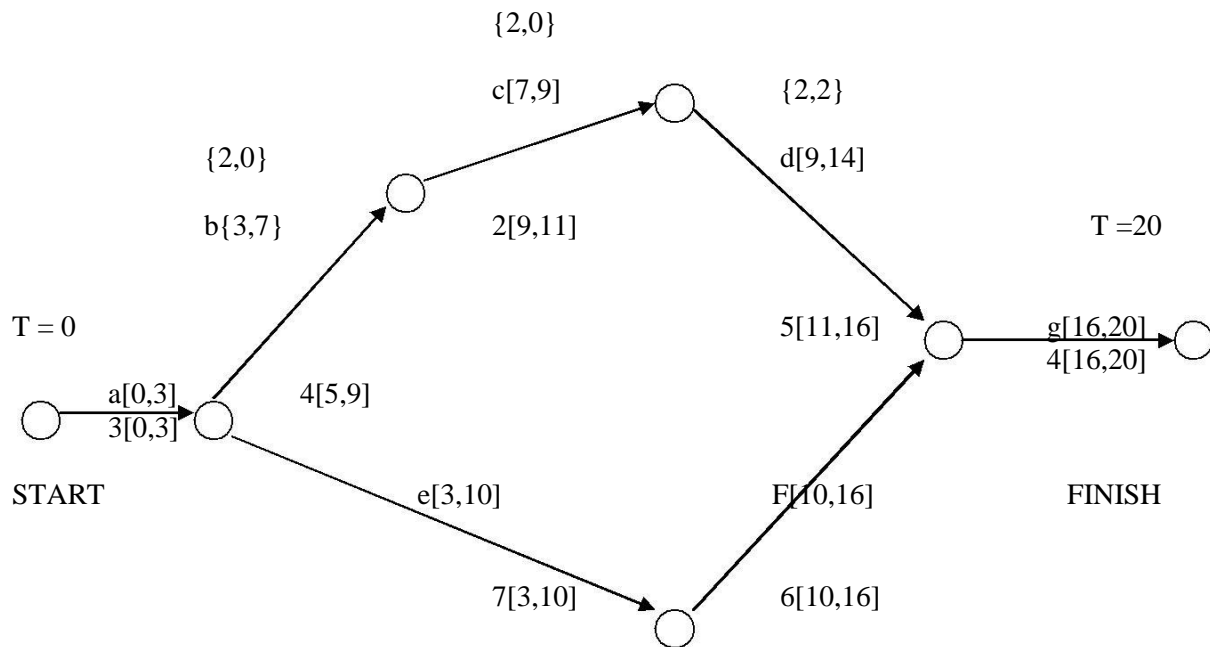


Figure – 2

We now move along the network in the reverse direction (Backward Pass). This is done to compute the total slack of non-critical activities. Total slack means the duration by which an activity can be delayed without delaying the project.

To finish the project on the 20<sup>th</sup> day activity g must start on the 16<sup>th</sup> day. Now to finish activities d and f on the 16<sup>th</sup> day these activities must start on the 11<sup>th</sup> and 10<sup>th</sup> day, respectively. To finish activity c on the 11<sup>th</sup> day it must start on the 9<sup>th</sup> day. Activity b must finish on the 9<sup>th</sup> day. For that this activity must start on the 5<sup>th</sup> day. Now we compute the starting time of activity e. We calculated that activity f must start on the 10<sup>th</sup> day. Thus activity e must be finished on the 10<sup>th</sup> day. This means that activity e must start on the 3<sup>rd</sup> day.

The early start and finish dates are shown in Table 2 (columns 2 and 3). Late start and finish dates computed by doing the backward pass are shown in columns 4 and 5.



We can now compute the Total Slack for all activities from the ES/EF and LS/LF dates. Subtract ES from LS to get Total Slack. Total Slack of all activities is given in table w. The slack for critical activities is zero while for non-critical activities, it is greater than 0. Apart from Total Slack, the Free Slack of each activity can also be computed. Free Slack means the duration by which an activity can be delayed without delaying any other activity (free slack = EF – ES of next activity/or earliest early start of succeeding activities when there is more than one immediate successor activity). Values for Total Slack and Free Slack are written in { } above or below each activity are.

From Table 2 we can make a Gantt Chart showing the start and finish dates for all activities. Non-critical activities are shown by thin lines (Fig. 3).

### **Report of the above Project**

1. The minimum time required to complete the project is 20 days.
2. Activities a, e, f and g are critical.  
These activities should be monitored closely since any delay in these activities will delay the project.
3. Non-critical activities if the project are b, c, and d.  
These activities need not be monitored closely as delay of these activities within their slack periods will not delay the project.  
The slack of these activities can be used to reschedule them, to meet maximum resource availability, smoothen resource requirements, reduce project cost, etc.
4. Start and finish dates of critical activities can be read from Table 2 or from the Gantt Chart (Fig. 3.)

Non-critical activities can be scheduled to start within early start and late start dates according to the manager's preference to suit criteria not stated in the problem.

Planned start and finish dates can be given to contractors/managers responsible for their activities. Later these dates can be used for monitoring progress and delays of activities and the project as a whole.

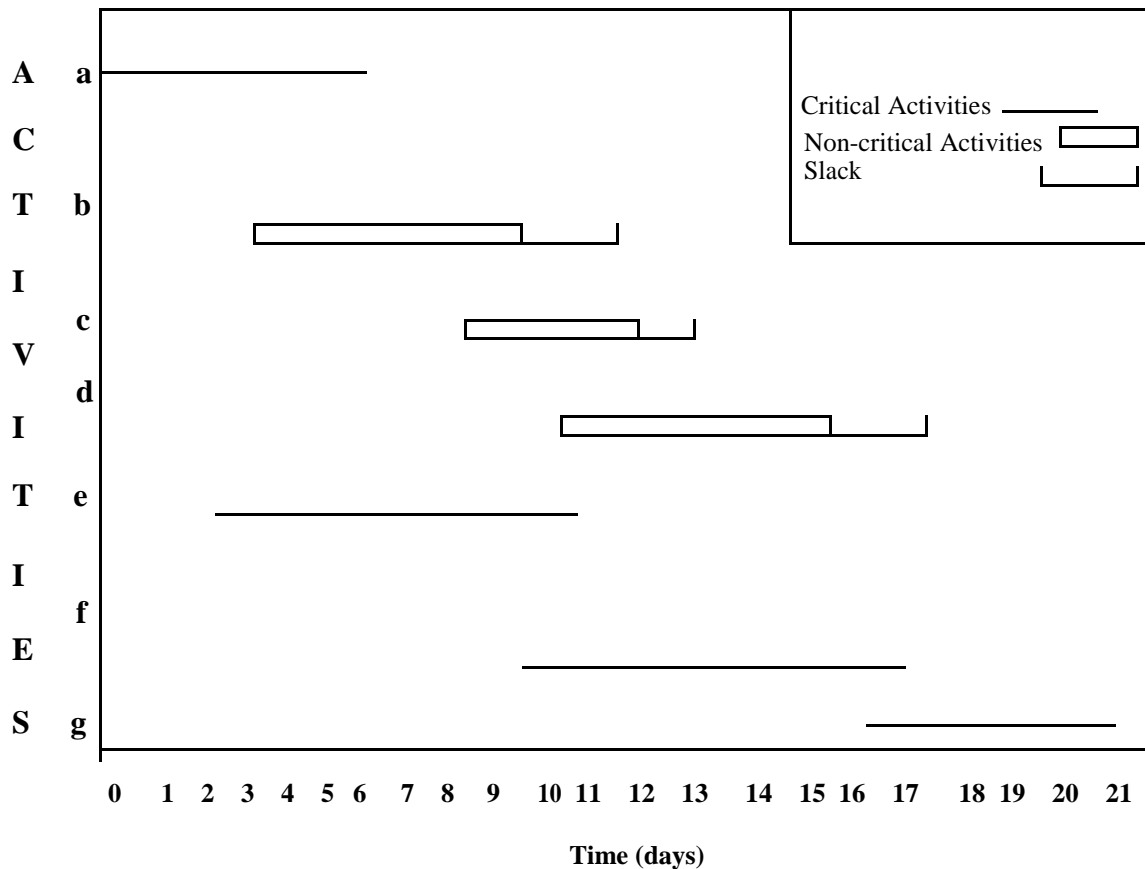
### **Thumb Rules for Project Management**

1. A large project has generally a few critical activities.  
The manager can put more effort into monitoring only these activities. He should see that these activities are not delayed. Delay of any of the critical activities will delay the project.
2. Penalty and rewards  
If a project is delayed the cost of the project goes up. Delay also means that the benefits from the project are foregone for the delayed period.  
To discourage the contractor from delaying the project, a penalty can be imposed in monetary or other terms for delays, e.g. a penalty of Rs. 10,000 per day of delay; or penalty of Rs. 1,000 per day for the first week, Rs. 2,000 per day in the second week, 3,000 per day in 3<sup>rd</sup> week and so on.

Contractors can be encouraged to complete the project ahead of schedule by offering rewards. A project completed early can be started early and thus starts giving profits early.

A part of the additional profit can be given to the contractor.

After analysis of the network always make a Gantt Chart. A Gantt Chart can be prepared from ES/EF and Total Slack. The Gantt Chart is easy to use for decision making, computing start and finish dates, computing slack, identifying parallel activities, rescheduling of resources, etc.



**Figure 3: Gantt Chart of the Project**

## Bibliography

Shogan, A.W. (1988) Management Science. New Jersey: Prentice-Hall.

Srinath, L.S. (1975) PERT and CPM: Principles, and Applications, New Delhi: Affiliated East West Press.

Thyagarajan, M. (1982) Project Management through Network Techniques (PERT/CPM). New Delhi: IIPA.

Wiest, J.D. and F.K. Levy (1988) A Management Guide to PERT/CPM: With

## **GLOSSARY OF TERMS: PERT/CPM**

**[Note: All words written in Capital Letters have been defined]**

PERT	Programme Evaluation and Review Technique.
CPM	Critical Path Method.
ACTIVITY	A small independent job of a project. It takes time and requires resources.
NODES	Junction points of ACTIVITIES represented by circles. Also called EVENTS.
EVENT	It occurs instantaneously when all activities terminating in the NODE have been finished and when all activities emanating from the NODE can be started. It has no duration and consumes no resources. It is normally represented by means of a circle.
ACTIVITY NAME	The symbolic name for an ACTIVITY, usually the alphabets eg. A,B,C, etc. or a,b,c, etc.
NODE NUMBER	The numbers given to NODES to allow easy referencing. Also used for naming activities in the ALTERNATE NAMING SYSTEM.
ALTERNATE NAMING SYSTEM	The system of naming ACTIVITIES by the numbers of initial and terminal NODES of the ACTIVITY e.g. (1,2), (4,6) etc.
PREDECESSOR ACTIVITY	ACTIVITY which must be completed prior to the start of ACTIVITY under consideration.
SUCCESSOR	ACTIVITY which cannot start until the ACTIVITY under ACTIVITY consideration has been completed.
DUMMY ACTIVITY	It takes zero time and consumes no resources. It is used: (a) to show precedence relationship when use of actual jobs/ACTIVITIES would lead to complication (MUST); (b) When two or more ACTIVITIES have the same START and FINISH NODES (CONVENTION).
NETWORK	A set of NODES and ACTIVITIES. Also called GRAPH. It is a graphic plan of all tasks that must be completed to reach the end objective of a project.

GRAPH	NETWORK.
ARC	An arrow in the GRAPH or NETWORK, representing an ACTIVITY.
PATH	A continuous set of ARCs connecting the START and FINISH NODES of a NETWORK or GRAPH.
LENGTH	The length of a PATH is the time for completion of all ACTIVITIES on that PATH.
START/ORIGIN NODE	The first EVENT of a NETWORK. It marks the start of the project.
FINISH/ TERMINAL NODE	The last EVENT of a NETWORK. It marks the end of the project.
CRITICAL PATH	It is the longest PATH in the NETWORK/GRAPH. Length of the CRITICAL PATH determines the duration of the project.
CRITICAL ACTIVITY	An ACTIVITY on the CRITICAL PATH.
DURATION	Time taken by an ACTIVITY. It is usually recorded below the ACTIVITY in the NETWORK.
EARLY START (ES)	Earliest possible time that an ACTIVITY can start.
EARLY FINISH (EF)	Finish time with EARLY START. $EF = ES + DURATION$
LATE FINISH (LF)	Latest time of finishing an ACTIVITY that would not additionally delay the project.
LATE START (LS)	Start time to achieve LATE FINISH. $LS = LF - DURATION$
FLOAT SLACK	The amount of time by which the start/completion of an ACTIVITY can be delayed without affecting the project.
TOTAL (TS)	Difference between LS and ES. In other words, the amount of BLACK time by which the start/completion of an ACTIVITY can be delayed without affecting the project duration times.

$$TS = LS - ES$$

FREE SLACK (FS)	Difference between EF and earliest ES of immediate SUCCESSOR ACTIVITIES. FREE SLACK denotes the amount of time that must elapse between the completion of an ACTIVITY, scheduled at the earliest time, and the START of its immediate SUCCESSOR ACTIVITY, the implication being that the immediate SUCCESSOR ACTIVITY has another PREDECESSOR ACTIVITY whose completion is awaited.
RELATIONSHIP	The logical order of the ACTIVITIES.
FORWARD PASS	Calculating and recording of ES and EF above each ACTIVITY arrow.
BACKWARD PASS	Calculating and recording of LF and LS below each ACTIVITY arrow.
CRASHING THE NETWORK	Net reduction in the total DURATION of ACTIVITIES on the CRITICAL PATH.
GANTT CHART	A method of representing ACTIVITIES and their DURATION. It is a rectangular chart. Its horizontal axis represents time units and vertical axis represents tasks or ACTIVITIES.