

DATA APPRECIATION AND ITS ROLE IN DECISION MAKING

GROUP 4

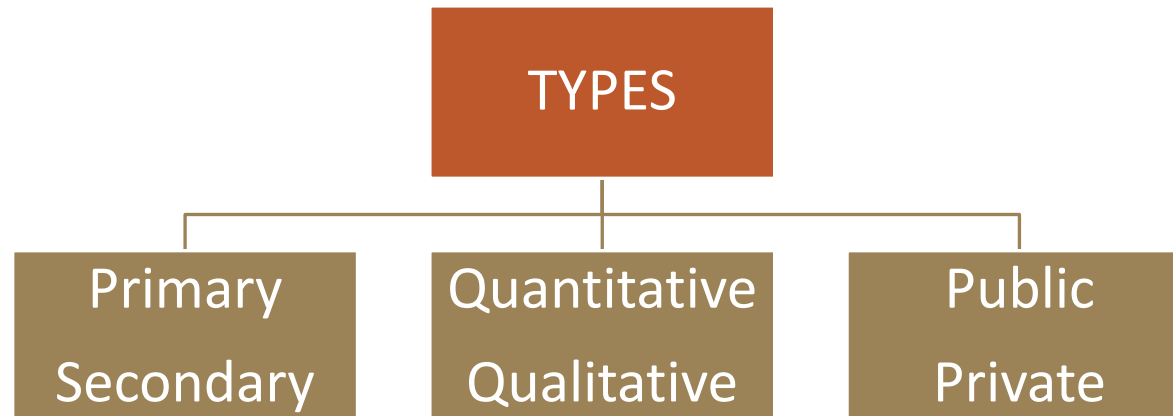


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What is Data?

- Unorganized raw facts
- Doesn't carry any specific meaning
- Measured in bits and bytes
- Can be alphabets, numbers, text, symbols, date, records etc.



Data Appreciation

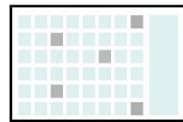
Science of analyzing raw data to make conclusions

Tools example: Apache Spark, RapidMiner, Knime etc

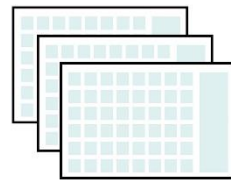
Linkages: Big Data, Artificial Intelligence.



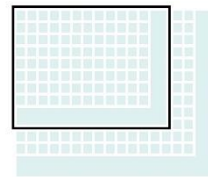
Managing:
ensuring the secure
storage of data



Cleansing:
removing incorrect
or biased data



Aggregating:
Compiling data from
multiple data sources



Abstracting:
Reducing a data set to its
essential characteristics

Four Analytic Capabilities

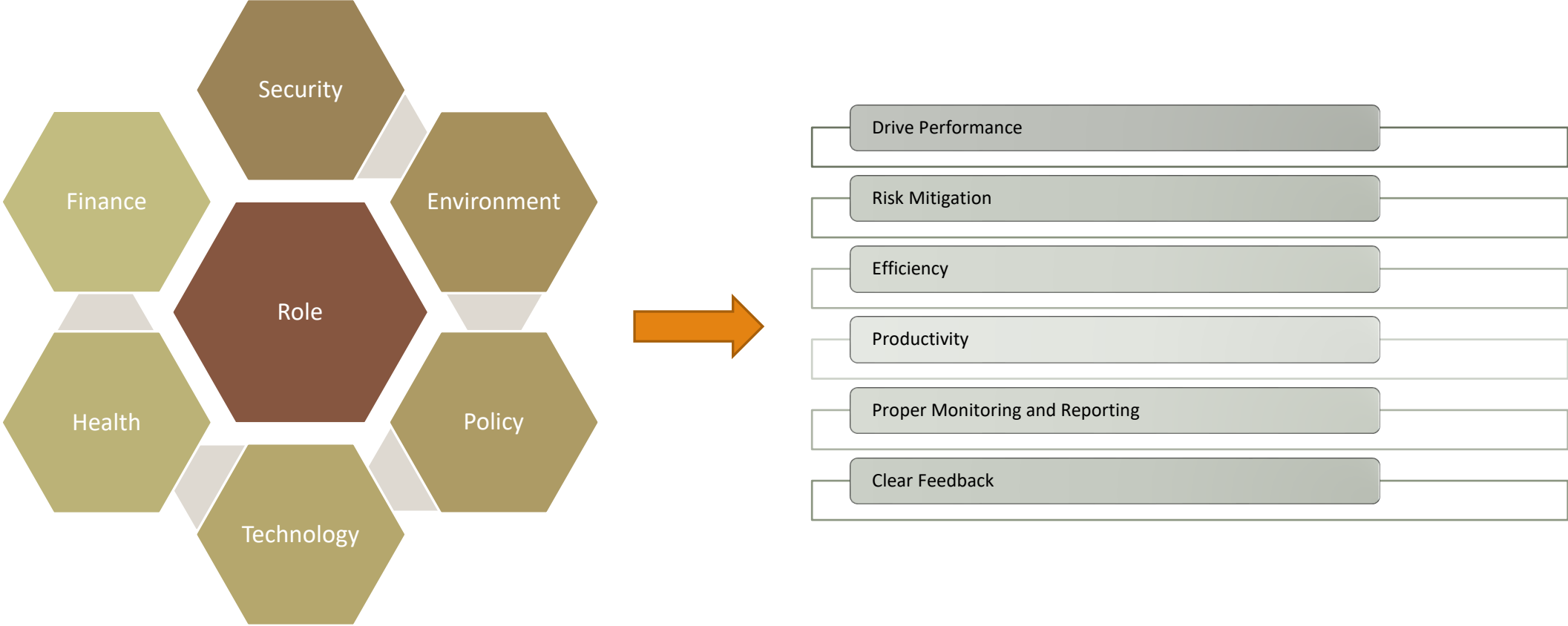
Descriptive

Diagnostic

Predictive

Prescriptive

Role in Decision Making



Some of the latest technologies wherein data is the prime source

1. **Blockchain** – decentralized ledgers to maintain records
2. **Internet of things** – sensing all the parameters of our surrounding to generate a unique and customized solutions.
3. **Artificial Intelligence** – Driverless cars through repeated simulations.
4. **Genome studies** still analyzing the amount of data/gene variations stored in our DNA

Role of Data in Policing

Policing involves investigation and evidence which is nothing but analysis of relevant facts/data. Final justice is based on such analysis.

Currently some of the DATA relevant projects/challenges underway in Policing-

1. CCTNS.
2. Facial recognition using criminal database.
3. Automated traffic challans through RTO database.
4. Mobile and internet surveillance.
5. Cyber attacks and hacks like mobiwik database stolen 2 days back.
6. Law and order challenges through data on social media networks leading to rumours.

Role of Data in Policing

- The use of fingerprints, DNA, CCTV, and other forms of technology have also played a major role in Policing
- Big data is frequently used to monitor forensic data to solve specific crimes
- experts have started using predictive analytics algorithms now to identify broader trends.
- the development of predictive hotspot mapping, a sophisticated crime mapping tool. This tool uses statistical models and past crime rates to predict future crime rates.
- The sources show that in the UK, these maps can predict where crime will occur 10 times better than the police, (Here, Development and Data, 2020)but there is a limitation to this tool
- Predictability of repeat offenders. With AI empowered risk assessment tools, the task of manually identifying repeat offenders can be automated.
- Predictive algorithms are used here to identify the risk of a person being an offender. The information is then used to predict the person as high, medium, or low risk. The accuracy of such systems, such as the Harm Assessment, Risk Tool, has shown to be highly accurate for low-risk individuals with a 98% accuracy rate (Here, Development and Data, 2020). However, there is an also a limitation of this tool where it leads to racial discrimination.

Role of Data in Forestry

- Forest cover mapping
- Biomass estimation and annual forest changes
- Biodiversity analysis, monitoring and protection
- Climate Change & Carbon Sequestration analysis
- Forest Fire Management

Role in Accounting , Finance & Audit.

Licensing and Finance

Accounting

Audit

Licensing and Finance-Audit dimensions



Spectrum
Auction



SAMPANN.



Bharat Net



Revenue
analysis of
Licensees.



Accounting:

➤ Core System Integrator(CSI) in Dept of Posts.

Human Resource management.

➤ Implementable areas:

(a) Trend analysis of Traffic(in postal department) vs Revenue Generation.

(b) Expenditure analysis.

Capital Vs Revenue Expenditure.

Pay sheet .

Data appreciation in Policy analysis

PFMS implemented by ICAS officers is helpful to monitor the policy by real time tracking of expenditure data and also it uses the data collected as a feedback for improving policy implementation.

□ PFMS to monitor the policy implementation challenges and leading to innovative proposals :

Challenge: MP govt. desired continuous monitoring of child sex ratio under BETI BACHAO BETI PADHAO ABHIYAN.

Decision making/proposal: CCA proposed to add 1 Rs extra to every girl child born under Janani Suraksha Yojana which can be easily tracked using PFMS as it helps in real time reporting of expenditure made.

Data appreciation in Policy analysis

❑ PFMS data for improving policy implementation: Unprecedented growth of MGNREGA person days against the targeted person days during the COVID led to Internal audit by ICAS officers and revealed following data from field.

	2017-18		2018-19		2019-20		2020-21	
Month	Projected person days	Actual Person day Generated	Projected person days	Actual Person day Generated	Projected person days	Actual Person day Generated	Projected person days	Actual Person day Generated
April	148446	102582	150088	349822	180017	42248	123006	123006
May	290629	389406	293844	775603	352440	198747	618774	618774
June	201618	362711	203848	458195	244498	279550	701591	701626

Observations from data

- Huge fluctuation on year to year basis during the first 3 months of the year?
- No difference between projected and actual of persons days generated in 2020-21 for a demand oriented scheme?

Decision making: District could have spent beyond the approved labour budget in 2018-19 and 2020-21. This may need necessary steps to get the revised work plan approved from the State / GOI and report to IAW.

Role in Regulation (MCA Case study)

2006

Launch of MCA21:

A transactional system for capturing data from Companies in electronic format

In Between

MCA21 system needed a forward linkage to explore the potential of Data mining and implementing business analytics and intelligence system in-house

2015

CDM Project

CDM project was envisaged to create an in-house data mining and analytics facility with the objective of disseminating corporate sector data in a structured manner

2016

Successful Pilot Run

The initial Pilot run was successfully demonstrated on 4000 companies in August, 2016 wherein it was turned to go up-scaled with all active companies' information

2020

Present

CDM is live with MCA data of all active companies and is continuously being scaled-up

Corporate Data Management



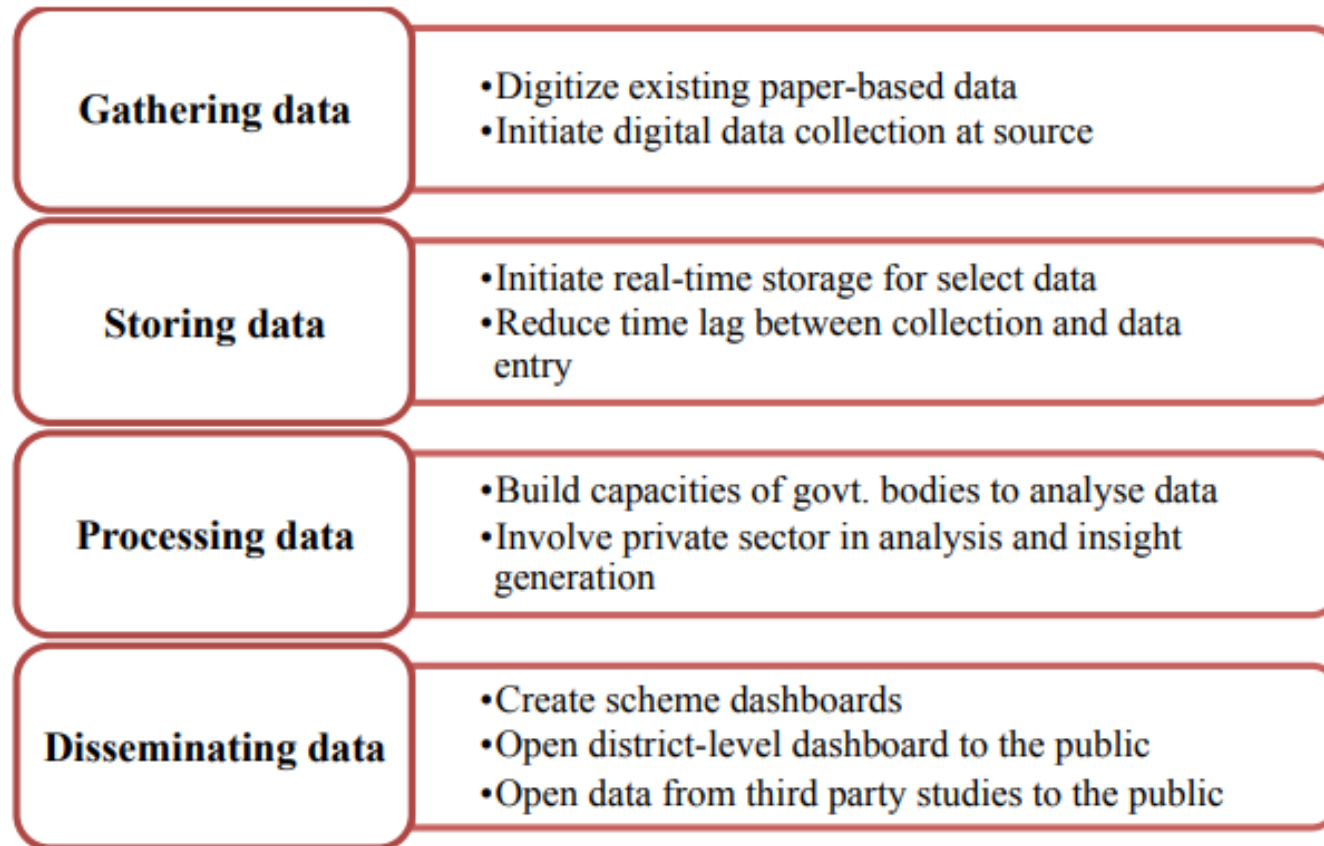
USES

- Prevention of Corporate Fraud and Money laundering eg: used to detect shell companies (Use by Police Department)
- Development - CSR funds
- By Credit rating agencies – investor protection (Use by SEBI)
- For development of evidence based industrial policy
- Financial regulation – Banking companies and Nidhi Companies (Use by RBI)
- MCA21 3.0
- Ease of Doing Business

Challenges

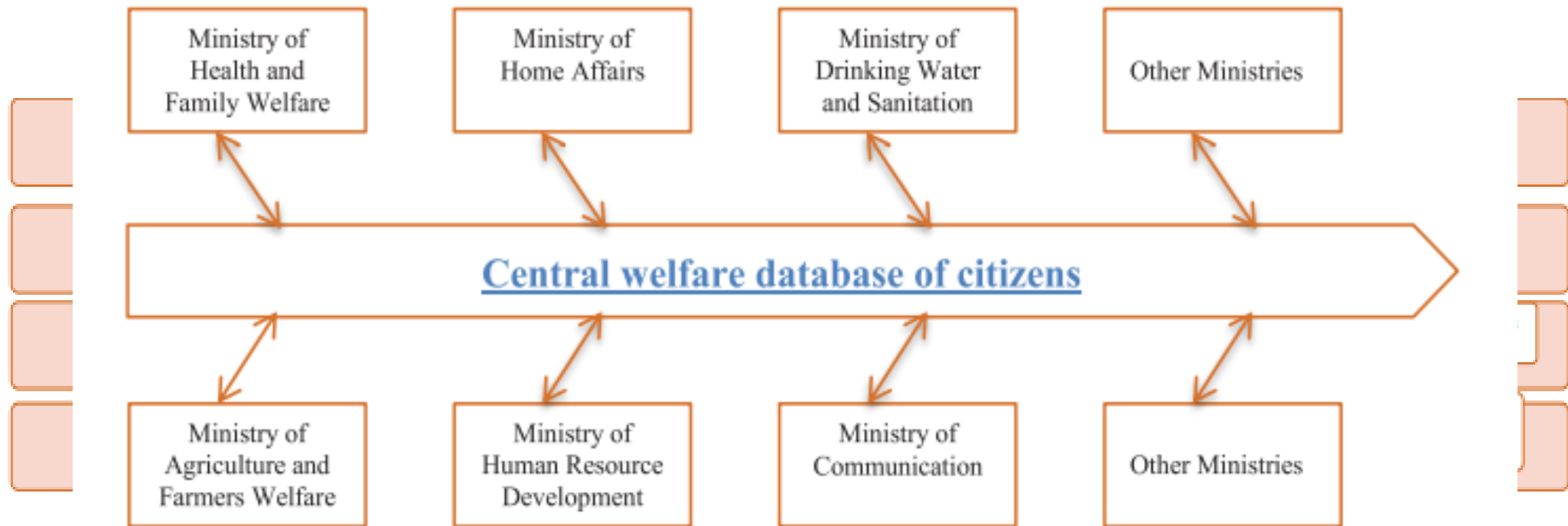
- Misuse by the government in power
- Privacy concerns
- Data lying in silos in different departments, ministries
- Data not available in uniform form

Transforming Data – Way Forward



CREATE ENTERPRISE ARCHITECTURE FOR GOVERNANCE

Figure 5: An enterprise architecture for Governance



THANK YOU