

## Impact of Digitization on E-Governance

Nayana M P\*, Ramya S K\*\*, JyothiLakshmi G Kava\*\*\*

### Abstract

We are in the era of digital India and digitization is one of the major task in the field of Technology to improve and enhance the data access at a faster rate. E-Governance is the use of Information and Communication Technologies (ICT) to improve the activities of public sector organization. The types of E-governance services are Government to Citizen(G2C), Government to Business(G2B), Government to Employee(G2E), Government to Government(G2G). Data Mining is the process of discovering a huge amount of data. The main role of data mining is Knowledge Discovery in Databases(KDD). The impact of digitization on e-governance is to make knowledgeable economy and digitally empowered society and to improve the quality life of citizens. The different application areas of digitization are banking sector, commerce, marketing, agriculture, senior citizenship, etc. This paper focuses on data digitization, data mining, data mining techniques, knowledge discovery of data.

Keywords: Digitization of data, data mining, data mining techniques, E-governance, ICT, KDD process.

### Introduction

Data is a collection of raw facts and figures. The process of collecting a huge amount of data is data processing. In every organization data is used in digital form for processing [1], E-Governance is the process of service delivery and information to citizens, government employees [8][9]. The main aim of E-Governance is government services will be available anywhere any time to citizens in a convenient, efficient and transparent manner[4]. Data mining is the process of extraction of useful information & Knowledge from a huge amount of data[8]. Digital India emphasis on E-Governance and transforms India to digitally empowered society and help the people of rural areas to be educated. Data mining is considered as an iterative process.[7]. Data mining involves classification, prediction, association, regression and clustering[5].

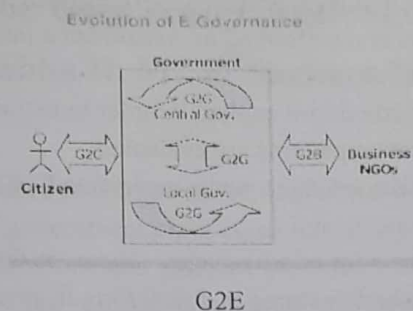
### E-Governance and Delivery Models

E-Governance is the way of providing services for the public by government departments in a modern way[8]. It provides an easy, fast, economical and transparent way of retrieving information to public, transactional exchanges with government, municipal and local levels and to empower citizens. E-Governance consists of four basic models such as G2C, G2B, G2E and G2G. G2C sharing of data and information systems between government agencies, departments or organization. It supports E-Governance initiatives by improving communication, data access and data sharing. Services such as tax returns, issues of passports, registration of property, etc. G2B is the relationships between organizations of public administration and business for instance online meeting, tendering, licensing, etc[2]. G2E involves giving and taking of information regarding diverse work assignments that come time to time like training and development of employees, career advice. G2G model in E-Governance involves distributing data or the information between organizations, various departments. G2G model helps Government policies within themselves to be cost effective[3].

\* Assistant Professors of Computer Science, MMK & SDM MMV, Mysuru, Karnataka, India 9880862439  
mpnayanasm@gmail.com,

\*\* Assistant Professors of Computer Science, MMK & SDM MMV, Mysuru, Karnataka, India 9986540070  
ramya.sk.sdm@gmail.com,

\*\*\* Assistant Professors of Computer Science, MMK & SDM MMV, Mysuru, Karnataka, India 9741969130  
jyothilakshmi@sdmmkmysore.in



### Data Digitization

Data Digitization is the process by which physical or manual records such as text, images, video and audio are converted to digital form[1]. The main purpose of data digitization is focusing on relevant data. The first step to digitization started with online payment portals for public utilities, digitization of data such as land resources, e-procurement of projects public sector bank sites, etc[3].

### Issues and Challenges of E-Governance before digitization

- ❖ Knowledge discovery was difficult
- ❖ Lack of strategies and financial plan
- ❖ Lack of Standardization
- ❖ IT Infrastructures are procured before building the application or building the data
- ❖ Lack of understanding by the departments[1].

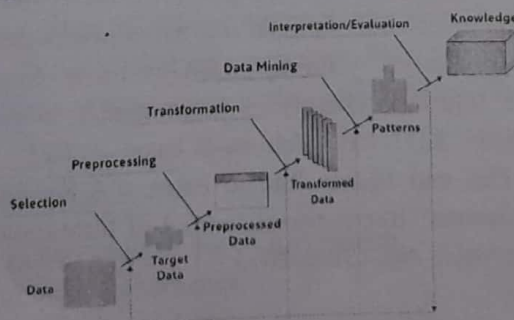
### Data Mining

The process of analysing data from a large amount of data in order to get a useful information is data mining. Knowledge Discovery in databases or KDD process is the most important aspect for analysing and extracting the interesting patterns[1]. The different techniques of data mining are as follows:

1. Classification - It is a process of mapping data into predefined classes belonging to particular classes or category. The task is characterised by different classes. It is supervised learning method, by using decision tree classification, K-Nearest Neighbour classifier, support vector machine, etc classification can be done.
2. Prediction- Is a technique which is used to predict the value of continuous data.
3. Association Rule – It builds the association relationships among a set of objects in a database.
4. Regression – Is a technique used to predict a range of numeric values, given a particular dataset.
5. Cluster Analysis – Grouping of similar type of objects into one group is clustering. It is unsupervised learning, cluster will not have any predefined classes. Clustering may be classified as Partitioning methods, Hierarchical methods, Density based methods and Grid based methods[5][6].

### Knowledge Discovery

The steps of KDD process is as follows:



1. Data Selection : Data is collected from heterogeneous sources and then integrated.



2. Data Cleaning : The noise and inconsisted data is removed.
3. Data Transformation: Data is transformed or consolidated into forms appropriate for mining by summarized or agrregation process.
4. Data Mining: Intelligent methods are applied in order to extract data patterns.
5. Pattern Evaluation: Interesting patterns are evaluated .
6. Knowledge Presentation: Knowledge can be represented[1][5].

### Advantages of Digitization

The Digitization concept has a lot of advantages where in the data access will be at a faster rate in any organization. The data which is stored in digital form in clouds requires high security which is provided by the sophisticated encryption or decryption algorithms. These algorithms are capable of accepting data, processing it and storing it in the form of information in the respective clouds in digitised format[3]. The digitization method is applied all over the internet. For instance, the PAN card number is a unique key of every individual in a banking sector which is beneficial for Government to track the bank account of every Citizen. This inturn because of digitization avoids the collection of black money in any Nationalised banks. This minimization of Bankrupts is due to the existence of digitization process.

### Protection Issues

1. Cyber crime – Is the major issue in the field of digitization ,hence the orgainization should bound themselves to high level of security.
2. Anonymity – The identity of an online voter must be protected from system administrator.
3. Authentication – Each and every citizens must be authenticated before voting stage by digital signature, Personal Identification Number(PIN) and details of bank accounts should not be disclosed to unauthorised users[3].

### Conclusion

The Government of India has introduced the concept of Digital India where the Government bodies such as Income Tax Department, Banking sectors, Insurance Companies ,Universities , Railways etc have adopted the digitization. The data mining techniques and Knowlegde discovery of data can be achieved efficiently on E-Governance[1]. The iterations are needed in the mining process in order to get better solutions which will be used by the users to make better decisions. It helps to extract useful information[3]. This adoption of digitization has made the task of managing files and managing documents more simpler , more faster and these files with the help of their individual password can be accessed by each and every citizen under the governance of government through online security so that any unauthorized access will be mimimal. Hence, with this discovery of digitization, the services provided by the government are utilized optimally by the public.

### References

1. Deepti Sindhu, Anupama Sangwan, “ Optimization of Business Intelligence using Data Digitization and various Data Mining Techniques” International Journal of Computational Intelligence Research ISSN 0973-1873 Volume 13, Number 8(2017),pp. 1991 -1997.
2. A.Gunasekaran,H.B.Marri,R.E.McGaughey,M.D.Nebhwani, “E-commerce and its impact on operations management” International Journal of production economics 75 (2002) 185-197
3. G. Rani & S. Chakraverty, “ A Survey on E-Governance Systems with focus on Development Approaches and Interface Quality” , International Journal of Interscience Management Review(IMR) ISSN: 2231-1513 Volume-2, Issue -2,2012.
4. Rama Krushna Das and Manas Ranjan Patra, “ A Service oriented Design Approach for E-governance Systems” International Journal of Information Technology Convergence and services(IJITCS) Vol.3, No.3,June 2013