An Analytical Study on Digital Transformation and Knowledge Management Framework with special reference to Public Service Distribution System

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ABSTRACT

Knowledge in organizations has been stored in many ways including in human minds, documents, notes, manuals, reports and it has also been shared among individuals through several communication channels such as conferences, seminars, training program, and forums. These have been applied for many years and although they are still being used, the emergence of new computer-based communication has not only complimented the traditional storage and delivery method but has also improved the efficiency and effectiveness of overall knowledge delivery mechanism. This research paper is a step towards contributing the importance and significance of Knowledge Management (KM) for e- governance in a public service distribution system. Digital transformation is reflected in E-governance or Electronic Governance.

Introduction

The eminent concern of the nation today is to facilitate the services provided to the citizen of India with efficiency and effectiveness. This is a challenge for any public service distribution system as well as the researchers to find out the underlying cause. Questions that have caught the attention of researchers over last decade are: Does knowledge or knowledge Management (KM) has a role to play in smooth functioning of any public service distribution system. Knowledge has become a precious property and knowledge management has been widely practiced by many organizations as one of the most promising ways of achieving success in the information age. All organization is overloaded with data and when this data is managed information is created through the collation of data, and thereby this information tends to formulate the knowledge and management of this knowledge is the practice called knowledge management. There is lots of research on private industries to see the vitality of KM in their organization but there is little research to

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find out the importance of KM in e- governance delivery in a public service organization or the local municipal corporations.

1.1 Objectives of the study

Broadly, the present study has been undertaken to study and evaluate the role of Knowledge Management for e-Governance in a public service distribution system. The specific objectives of the study were as follows:

1. To study the role of Knowledge Management in e-Governance in a Public Service distribution system.
2. To design a general model or framework of Knowledge Management as a tool to assist e- governance of Public service distribution system.
3. To explore the critical success factors in implementation of Knowledge Management for e-governance .

1.2 Hypothesis of the study

H1a: Practices of Knowledge Management in e-governance in a public service distribution system enhances performance of the public service distribution system

H1b: Practices of Knowledge Management in e-governance in a public service distribution system enhances the productivity of the public service distribution system .

H2a: Practices of Knowledge Management in e-governance in a public service distribution system enhances the decision-making process in the public service distribution system .

H2b: Practices of Knowledge Management in e-governance in a public service distribution system leads to faster decision-making process in the public service distribution system .

1.3 Scope of the study

To make the study meaningful and applicable this study was confined to various departments of KM.

The study includes:

1. The application of Knowledge Management for e-Governance in a Public service distribution system.
2. The Class I and Class II employees working at Municipal Corporation were selected for the study.
3. The role of the Knowledge Management for e-governance is studied from the user's perspective.
4. For the Knowledge Management model designing, executives working in the different departments of the KMC were selected.

2. REVIEW OF LITERATURE:
2.1 Studies related To Km in Public Service Organizations

Paul Joseph Mc Evoy, Mohamed A.F. Ragab & Amr Arisha (2019) : This paper looks at the effectiveness of knowledge management through a novel taxonomic lens. It utilises qualitative data obtained from a detailed literature review on public sector KM. While research has indicated that KM in the public sector is relatively under researched compared with its private sector counterpart, there has been a

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substantive body of research into public sector KM, and various scientometric analyses have been conducted into public sector KM dynamics. Most of this is concentrated around health, education, and government intervention. There has been comparatively little research into specific public sector attributes. This study describes these attributes and illustrates how they are reflected in the literature, thereby underpinning each with academic relevance. This paper will benefit KM scholars who wish to study the public sector. Highlighting the effectiveness of KM in the public sector will help utilise knowledge for efficiency and service delivery improvement.

The emerging trend in economy offers great opportunities, but at the same time it creates some concerns and challenges for private and public sectors. To overcome the issues and take advantage of the opportunities, governments need to consider the innovations and invest on some initiatives and adapt new management methods in private sectors. Knowledge Management (KM) is a way that needs to be explored for taking the opportunities and their implicit benefits in future. Therefore, it is also necessary to address the key issues and opportunities in public sectors. The aim of this article is to advance the understanding of KM concepts at the organization and the enterprise levels in the public and private sectors in knowledge economy and to develop a framework identifying good practices of KM. People, processes, and technologies are main elements to be considered for the public-sector KM framework

Nirmala and Shrestha (2004) states in her study of KM in the Public service organization from Nepal that ultimate objective of KM in the public sector is to maximize productivity and enhance public service delivery. They believe that KM at government level aims to improve the internal processes and formulate sound policies and procedures for efficient public service delivery and increased productivity.

The ultimate objective of Knowledge management in the PSO is to remove the hindrances contributing towards the smooth flow and sharing of knowledge across the departments and across the organizations concerned. The duplication of work and efforts can minimize across the organization. Since KM enables right knowledge at right time to the right person thereby enhances better and faster decision making.

K.Govindarajulu, Venkataramaraju D (2019): The information sharing in any organization is like blood flow in a human body. The free flow of information is like fluid which can get converted into actionable knowledge throughout the organization whether private or public. Thus, knowledge becomes embedded not only in documents or repositories but also in organizational routines, processes, practices and norms. Knowledge Management (KM) is considered to be important component in governmental organisations due to its rotational transfer policy, improper documentation, change in strategy due to change in guard, individual perceptional differences, personal liking and disliking, Policy changes pertaining to mobility. Knowledge management in Governmental Organisations can also provide a way for transparent information, choices of approach to citizen, greater accountability of individual and organisational endeavours. But, it will not come on its own, there must be a system through which the organizational reward and incentive mechanisms to motivate an employee to share the information and knowledge. Incidentally the lack of information sharing came to lime light through an incident in

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one of the public training institute which in turn initiated the KM system implementation as part ICT enabled Training Management Information System (TMIS). This paper will focus and bring out the problems and issues related to lack of organized knowledge management practices followed in one of the public training Institutions in India.

Today, knowledge is increasingly recognized as an important, strategic resource by all types of organizations and institutions, whether private or public, service oriented or production oriented. Regardless of the importance ostensibly attached to it, public sector organizations have often been less inclined to fully explore the benefits of knowledge management than the private sector. But now many organizations in the public sectors have started to realize the importance of knowledge management in streamlining their operations. This paper will focus on knowledge management in the public sector. Common challenges and concerns that affect public sectors worldwide are identified as: driving efficiencies across all public services; improving accountability; making informed decisions; enhancing partnerships with stakeholders; capturing the knowledge of an ageing workforce, and; improving overall performance. To deal with these challenges public sectors often introduce several reforms including knowledge management and most recently, e-government. The success of e- government depends on knowledge management. Knowledge management provides the overall strategy and techniques to manage e-government content eloquently in order to make knowledge more usable and accessible and to keep it updated. This paper will discuss how knowledge management can be put into practice as a reform instrument and an integral part of environment to address some of the above challenges and lead the public sector to increased effectiveness, efficiency and productivity. This contribution investigates knowledge aspects in e-government and gives a survey on relevant knowledge issues in the public sector. Based on the comprehension of public sector knowledge, examples are considered where administrative work is enhanced with knowledge.

Riege and Lindsay (2006: 25) states on the purpose for KM initiatives in the public service organizations that Wiig (2002) had identified. The value of KM for PSO is as follows:

Since the public services are having silos of information connectivity for such information across the varied levels of government and across the borders will improve the overall performance and exploit on a broader, more integrated and more easily accessible knowledge base.

Improving accountability and lessening risks by making informed decisions and resolving issues faster, supported by access to integrated, transparent information across all organizational boundaries and simultaneously the citizens.

Delivering improved and more cost effective services by enhancing partnership with and responsiveness to the citizen.

3.   RESEARCH DESIGN AND METHODOLOGY

The research study started with the exploratory research where the researcher gained a better understanding of the concept of Knowledge Management and e- Governance at municipal corporation through the qualitative research, for this many experts of KM and e- governance where interviewed through unstructured questions like the municipal commissioner, additional Municipal commissioner, municipal

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commissioner of slum & local body tax, HOD IT department of Municipal Corporation. The study was finally followed by conclusive research study where a well-structured quantitative study was conducted to test the promulgated hypothesis through a structured close ended questionnaire.

5. UNIVERSE OF THE STUDY

For the purpose of the study, Municipal Corporation was selected for the qualitative study. After the study it was found that there was a need to stratify the sample between class I and class II employees since there is a demarcation of work between the two strata Class I is more involved in planning, execution and supervision whereas class II employees are involved in the implementation of services. Thus, all the managers and executives working on KM and e- governance activity were selected which formed the universe of this study.

6. SAMPLING FRAME

"Municipal Corporation" was selected for the purpose of the study. As the study is implied for a Public Service distribution system, Municipal Corporation was selected for the qualitative as well as quantitative study. Basis of the selection of this unit was the presence of Knowledge Management & e-governance activity for a huge population and oldest municipal corporation.

7. SAMPLE DESIGN

Stratified sampling method was used to design sample. From the selected municipal corporation respondents are identified in two categories. Class I, Class II employees working on KM and Class I and Class II employees working on e- governance systems were the respondents.

(A) Sample Plan for Knowledge Management for e- Governance:

For the smooth functioning of e- Governance in Municipal Corporation, knowledge management acts as the backbone. For this KM is maintaining the KM for e-governance. KM 465 class I & II executives as given on the KM website which constitute the sampling frame.

The census was considered to collect data from class I officers who were working on the KM in e- governance which counted to be 60 in number. However 22 class I officers agreed to participate, whereas others denied due to due to time constraint and their unwillingness to share information. Data was collected from 185 class II officers.

8. DESIGN OF QUESTIONNAIRE

A comprehensive structured questionnaire for the Class I and Class II officers working on KM and on e-Governance were designed. Keeping in view the time limitation of the respondents and to ensure speedy responses from the respondents, the questionnaires were administered personally to all the respondents. The questionnaires were so framed that the maximum information relating to the objectives may be extracted from the respondents, on various aspects of the KM and e- Governance. Most of the queries were to be responded on a five point (Likert) scale. All the questions were close ended, so that the respondent time may be optimally used. A few of the questions were framed in such a way that the

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respondents may respond one or more options by tick mark. To cross check the response of the respondents, some questions were common with different wording. A few dummy questions were also asked from the respondent to keep him at ease. The questionnaire was designed to develop the model for KM in e- governance. The data collected through the questionnaires, was used for the development of the model. The questionnaire was designed based on Gold, et al., Lee & Choi, Lee & Lee and Smith, et al. models. Several e- governance professionals and KM professionals were interviewed to modify the statements, the final questionnaire consists of nineteen dimensions with eighty six statements (27 to measure KM infrastructure, 23 to measure KM process, 23 to measure KM functions 18 to measure organizational performance, 12 to measure critical success factors) as shown in Annexure 2. The participants were asked to rate their perception towards the knowledge management level within their departments on a five-point Likert-type scale with anchors from "5- Strongly agree" to "1- Strongly disagree" and the relative importance for each KM applications dimensions.

9. DATA COLLECTION
Data was collected by two methods:
Qualitative Technique: Here the researcher did rigorous observation, interviewing with the associated personas which helped in identifying the independent and dependent variables for the further study which was initially derived from literature review and analyzed with the present scenario, went through validity and reliability test and then these variables were finalized to get included for the final quantitative study.
Quantitative Technique: This included the filling of the questionnaire from the respondents. Data was collected from April 2019 to December 2020.

10. MAJOR FINDINGS

10.1. Findings on the role of Km in E-Governance at Municipal Corporation
As per the first objective a study was done on the existing technological Infrastructure capabilities, knowledge process capabilities, knowledge function capabilities and organizational effectiveness, which were evaluated by the present technology at KMC and awareness among the employee about the same. The descriptive analysis showed that:
a)   Three KM components namely knowledge infrastructure, knowledge process & knowledge functions were identified through the literature review and also the qualitative study of KMC and were thus identified as the input variables for the study.
b)   There are four major components for organizational effectiveness. The components are performance, productivity, better decision making and faster decision making. There were eleven variables used for performance, five for productivity and one each for better and faster decision making.
c)   The facilitators for KM for e- governance through the technology infrastructure was studied which depicted the available technologies assisting KM for e- Governance are Internet, Intranet, discussion forum, desktop, e-mail access, document management system, discussion forums but a need to give more attention

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and to reap the proper benefit of KM for e- governance is application of groupware software like lotus notes or MS- share point which are good facilitators of KM.

d) The facilitator of KM for e- Governance through the imbibed process are majorly regular maintenance of documents, office orders, rulebooks, memorandum, after event report, department manuals stored in hard and soft copies. Consulting advice from the experts and seniors is also imbibed in the process of KMC for knowledge conversion and application. All these are the integral part of the process of KMC which is helping for smooth functioning of KM to assist e- governance.

e) Knowledge function includes capturing, creation, sharing, and utilization; all these are practiced at KMC. From the study it was evident that internet was a good source for employees to create new knowledge. Also knowledge is created, shared, utilized through seminars/ workshops/ conferences which is arranged on regular basis to upgrade the domain knowledge of the employees. Notices and periodicals also contribute a lot for knowledge functions practiced at KMC.

f) The method of Knowledge storage which is again a vital contributor for KM at e- Governance is worked on with a process at KMC, A proper filling system, data stored as soft and hard copies.

g) Technology, Structure, and Culture significantly affects and enhances productivity, performance and decision making of e- Governance. It was also found that culture contributes to the productivity and performance, rest of the factors are not significantly contributing individually, though collectively they are putting impact on productivity and performance.

h) For technological Infrastructure central repository system contributes a lot for facilitating the Knowledge Management practices for e- governance but there is no identified system for searching of new knowledge, a proper knowledge taxonomy of each department can contribute as a solution.

i) Knowledge structure which includes rules policies, procedures, processes, hierarchy of reporting, incentive systems etc. An innovative methods of boosting the overall employees of KMC by having a policy for rewarding the employees on the basis of knowledge creation and sharing can be worked on for rigorous implementation of KM for e- Governance.

j) Knowledge Culture plays an eminent role in the smooth functioning of KM for e- Governance as most of the employees understand the importance of knowledge for effective functioning of e- governance. They also are clear with the objective and vision of their department for e- governance services.

k) The Knowledge Management Process includes Acquisition, Conversion, Application and protection, where knowledge acquisition consisted of six variables after the validity and reliability test Knowledge Conversion was left with one variable out of the five after the reliability and validity test. Knowledge Application consisted of five variables and Knowledge Protection had seven variables representing it.

The Knowledge Management function includes knowledge capture, knowledge creation, and knowledge sharing and knowledge utilization. There were four variables contributing for knowledge capture, five variables for knowledge creation, six for knowledge sharing and five for knowledge utilization. The study indicates that capturing of knowledge through external sources was practiced most for Knowledge Management but capturing and communication of best practices inside

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the across the departments and lessons learnt has to be given attention so that utmost can be reaped from the benefit of Knowledge management for e- governance at KMC.

11. RECOMMENDATIONS:

A huge amount of money of citizen is involved for such and therefore need was felt to identify what is gained out of the whole initiative. As the KM is in its early stage of growth, there are no standard methods to practice and to evaluate the effectiveness. Knowledge Components like Knowledge Infrastructure Capabilities, Knowledge Process capabilities and Knowledge Function Capabilities are the components of better Knowledge Management practices. These capabilities play major role in the success of KM for e- Governance which in turn helps in enhanced productivity, performance and faster and better decision making; hence each capability should also be measured. There are few methods used to evaluate the effectiveness of KM systems, but still the literature available on the KM and e-governance shows that there is no agreed upon metrics, standard methods, or model to do the evaluation.

The study was carried out to study the role of Knowledge Management in e-Governance in a public service. KMC was selected for qualitative study. 112 respondents from Class I & Class II grade, working on KM and e- Governance systems participated in the study.

a) The facilitator of KM for e- Governance through the imbibed process are majorly regular maintenance of documents, office orders, rulebooks, memorandum, after event report, department manuals stored in hard and soft copies. Consulting advice from the experts and seniors is also imbibed in the process of KMC for knowledge conversion and application. All these are the integral part of the process of KMC which is helping for smooth functioning of KM to assist e- governance. A process needs to be developed to tap the tacit knowledge as it is one of the important criterion in KM so a proper process for tapping tacit knowledge is required to be imbibed which will include brainstorming, expert advice, more appropriate process diagrams.

b) The method of Knowledge storage, a vital contributor for KM at e-Governance is worked on with a process at KMC, A proper filling system, data stored as soft and hard copies. The attention is to be given on regular updating of the knowledge so that new methods as donor and creator of Knowledge can motivate the employees to work for it.

c) For creation of knowledge informal discussion is practiced regularly but this function needs to be imbibed in the process of the KMC and needs to be practiced on day to day basis.

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