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Critical Study of Knowledge Management & E-Governance

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Abstract – Knowledge management is the process of defining, structuring, retaining and sharing the knowledge and experience of employees within an organization. The objective of knowledge management is improving an organization's efficiency and save knowledge within the company. e-Governance is the application of Information and Communication Technology (ICT) at all the level of the Government for providing services to the citizens, interaction with business enterprises and communication and exchange of information among different agencies of the Government in a speedy, convenient efficient and transparent manner.

Key Words: Organization, Knowledge, Economy, Convenient, Structuring

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1. INTRODUCTION:

Knowledge is information that changes something or somebody either by becoming grounds of actions or by making an individual (or an institution) capable of different or effective action.

Land had been the value in agriculture era, whereas in industrial era factories created value along with the utilization of resources like labour and capital but today the scenario has completely changed and the value can only be driven through knowledge. Knowledge economy is the buzz word today and all the companies are concentrating on it. The knowledge economy has had an impact on the way companies do their business. For survival of companies in this globalized era managing knowledge properly is one of the vital ingredients.

The buzz word today is big data which leads to information and simultaneously towards knowledge and to get right knowledge at right time and right place is the challenge for companies to survive in this era. The organizations need to manage their knowledge properly and efficiently. The leading companies in the world of business today have knowledge management practices entrenched in their day to day activities. The importance of Knowledge management has also been understood by the public service provider worldwide as it too faces competition in several areas.

The loss of institutional memory due to staff turnover also leads the public sector to embrace KM practices. Since time immemorial management of knowledge has been a practice which is the result as we know our culture well and follow our rituals and know about our Upanishads, or holy books. This passes on from generation to generation in written form or through the written knowledge in form of books etc.

The two types of knowledge above said are tacit and explicit knowledge. Knowledge incorporates ideas, know-how, instinct, expertise, and lessons learned that has the prospective to build value for an organization, its employees, its products and services, its customers and ultimately its shareholders by informing decisions and improving actions.

Tacit Knowledge: The knowledge that people hold in their heads. It is much less tangible than explicit knowledge. It is more of an "unspoken understanding" about something, knowledge that is more difficult to write down in a document or a database. An example might be, knowing how to ride a bicycle – you know how to do it, you can do it again and again, but could you write down instructions for someone to learn to ride a bicycle? Tacit knowledge can be difficult to access, as it is often not known to others. In fact, most people are not aware of the knowledge they themselves possess or of its value to others. Tacit knowledge is considered more valuable because it provides

context for people, places, ideas and experiences. It generally requires extensive personal contact and trust to share effectively.

Explicit knowledge: The captured knowledge which is thereby put up in print media in form of documents or databases. Examples of explicit knowledge comprise instruction manuals, written procedures, best practices, lessons learned and research findings. Explicit knowledge can be further fragmented into structured or unstructured documents. Documents, databases, and spreadsheets are examples of structured knowledge, because the data or information in them is organized in a particular way for future retrieval. In contrast, e-mails, images, training courses, and audio and video selections are examples of unstructured knowledge because the information they enclose is not referenced for recovery.

2. INDIAN ETHOS IN MANAGEMENT LEADING TO KNOWLEDGE MANAGEMENT:

Knowledge has been the vital element since the Vedic times. The literature of Vedic not only includes psychology and physics but also medicine and arts.

These knowledge has been transferred through "Gurukul system" by the usage of word of mouth. They followed knowledge transfer system from guru to sishya (students) where students stayed in proximity to their teachers so as to achieve knowledge. "Upanishad" is the word which combines three words: upa, ni, and sad. Upa is near; ni depicts below and determination, and sad is to sit down. The implication of Upanishad is "near below sitting". In earlier days students for attaining knowledge used to sit near the gurus after achieving sacred heart and mind and with quench for thirst of knowledge and tries his best to absorb and practice the teachings. The Upanishad also describes the basics for a student, the qualities necessary and the state of mind towards acquisition of knowledge. The acquisition of knowledge and sharing the knowledge acquired with others is the most excellent form of severity that one can practice in this world. This knowledge had been passing by from one generation to the other. The key ingredients for an organization to grow and also for the entire nation to grow lies on the value of knowledge enhancement. Vedas has described knowledge as wealth; knowledge has always remained and in future will remain the single essential factor contributing towards all types of development in the human society as it is this assets which enables man to use every other type of capital and resources for his benefit.

3. DEFINITION OF KNOWLEDGE:

Table: 3.1-Definition of Knowledge given by various authors

Oxford Dictionary definition on knowledge	a person's range of information and information as "something told; knowledge items of knowledge"
Webster's dictionary definition on knowledge	the fact or condition of knowing known by a person or a group of people. The knowledge is also defined as "the ideas or understandings which an entity possesses that are used to take effective action to achieve the entity's goal(s)
Nonaka and Takeuchi (1994)	Justified true belief
Wiig (1994)	Truths and beliefs, perspectives and concepts judgments and expectations, methodologies, and know-how
Liebeskind (1996)	Information of which validity has been established through tests of proof
Ruggle (1996)	A fluid mix of framed experience value, contextual information, and expert insight
Allee (1997)	Experience or information that can be communicated or shared
Sveiby (1997)	The capacity for effective action
Davenportand Prusak (1998)	Framed experiences, values, expert insights, and contextual information
Fahey and Prusak (1998)	Imbuing data and information with decision- and action-relevant meaning
Leonardo and Sensiper (1998)	Relevant, actionable information based at least partially on experience
Wijnhoven (1998)	Collection of concrete experiences or a set of abstract conceptualizations
Den and Huizenga (2000)	A collection of rules and information to fulfill a specific function
Acharya (2001)	Human interaction with reality.
Raisinghani (2000)	Formatted information.
Al-hawari (2004)	An object that can be codified, distributed understood, and applied in order to achieve a set of goals.

Prior to the coining of the word "Knowledge" the progression of path from data to knowledge has been followed, this ultimately results in wisdom. Data is represented as raw fact which simultaneously when compiled together forms information thereby collating the information into knowledge and this knowledge finally converts into wisdom. For example each student of the class can be depicted as raw facts which when compiled together forms an information about each students attendance percentage in a class finally if we want to get a knowledge about how many students should not be allowed to sit for the exams can be calculated using various analytical tools,

commonsense, experience and training of some important skills.

After the understanding of the continuum about the data towards KM it's imperative to know about the definition of KM given by diverse authors all around the world.

3.1 KM in Perspective from Different Personalities and Groups

Table: 3.2- KM in Perspectives from Different personalities and group

Pears (1972)	Knowledge of facts, knowledge of facts acquaintance, and knowledge of how to do things.
Machlup (1962)	Practical knowledge, Intellectual knowledge, Small-talk and pastime knowledge, Spiritual knowledge, unwanted knowledge
Blackler (1995)	Embodied, Embedded, Embrained, Encoded
Polanyi (1967), Nonaka (1994):	Tacit, Explicit
Awad & Ghaziri (2003)	Shallow & Deep Knowledge Procedural Knowledge, Declarative Knowledge, Semantic Knowledge, Episodic Knowledge
Khandelwal & Gottschalk (2003)	Core knowledge, Advanced Knowledge & Innovative Knowledge
Holsapple and Whinston (1988), Holsapple (1995)	Descriptive, Procedural, and Reasoning knowledge.
Boisot (1995)	Proprietary, Public, Personal, Commonsense
Choo (1998)	Tacit, Explicit, Cultural
Conklin (1996):	Explicit, Implicit, Individual, Collective
Riitta Suurla	"KM can be defined as a process where knowledge, skills, expertise, communication and collaboration are cared for, administered and steered with skills and wisdom in a goal oriented fashion by using different techniques and technologies."
Michael Fontaine Eric Lesser	Knowledge Management can be defined as the ability of an organization to create, share and use the collective knowledge of its products, processes and people to increase workplace productivity and reduce activities that "reinvent the wheel"
Gartner Group's	KM is an integral approach to identifying, capturing, retrieving, and sharing and evaluating an enterprise's information assets; both formalized in databases and informal tacit expertise.
Burns (Creative Networks)	KM is "web thinking", that is lateral thinking emphasizing a network of relationships between pieces of information and between information and people, compared with traditional thinking that is ...linear and sequential.

The various definition and classification given by various authors depict that Knowledge management is a recursive cycle which goes on continuously and the following diagram shows the flow of KM's recursive process which includes assessment of knowledge, contextualization of knowledge and updating knowledge. Each of the above given steps includes few processes which are mandatory to be followed for completing each step. Knowledge Capture and/ or Creation, Knowledge Sharing and Dissemination, Knowledge Acquisition and Application are the important milestones which have to be practiced as a process in an organization for proper KM to be in place. Given diagram explains the same.

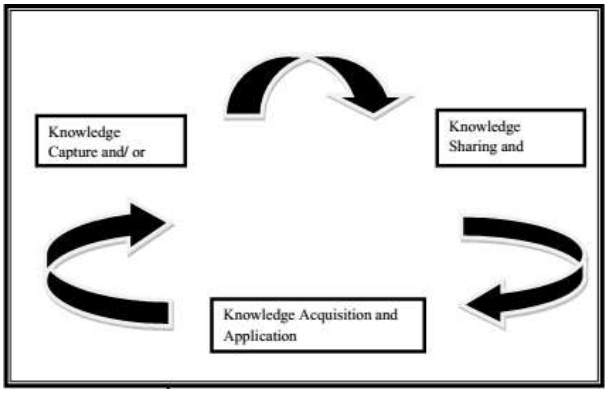

Figure: 3.1: The KM Process Continuum

3.1.4 GENERATIONS OF KNOWLEDGE MANAGEMENT:

The scope and perspective of KM constantly jumped to broader circles of engagement which is fragmented in different generations.

First Generation KM: This was also known as document based KM which included these vital steps:

- Aggregated, organized and analyzed information and data.
- Information stored in documents and finally in data warehouses. Extract, Capture, store and disseminate information.
- Information available through search and retrieval.
- Human beings reluctant to share knowledge.
- Produce and provide knowledge for rational decision making and management.

Second Generation KM: This generation was coined as People based KM which included the following factors:

- Skill of using knowledge to create unique work.
- Knowledge stored in human brains.

- Knowledge could be interacted, shared and exchanged.
- Human beings are eager to showcase their expertise and knowledge.
- Sharing and learning for improvement and effectiveness.

Third Generation KM: This generation was related as system based KM which included the following factors:

- Complex phenomenon emerging from social system (this generation was beyond the aggregate of individuals). Stored in systematic interaction and relations.
- Co-create, discover and transform sense and meaning.
- Knowledge made available by understanding the whole through conversation and adapting various brainstorming techniques.
- Today people depend on interaction to be knowledgeable.
- Understand and innovate for sense making and creating an impact.

4. E - GOVERNANCE

E-Governance as defined by **UNESCO (www.unesco.org)** states that the core function and the goal of e-governance is to enhance good governance which is thereby evidenced through participation, transparency and accountability of services and healthy relationship towards the citizen of the country and the government, which is facilitated by the recent advancement in communication technologies and the internet.

The increase in involvement of a common citizen in governance activities at any level stating from national to the root level say panchayats is only possible due to the advancement of information technology which has resulted in on-line discussion groups and by enhancing the fast development and effectiveness of pressure groups. The government is also benefitting by providing better services in lesser span of time and providing effective and efficient services to the citizen whereas the government is benefitting by reduced transaction cost and services becoming more and easily accessible. Governance refers to the application of varied political, economic and administrative powers in the administration of nation, where citizen can express their interests and exercise their legal rights and obligations without any hindrance.

4.1.1 DEFINITION AND IMPLEMENTATION OF E-GOVERNMENT

Table 4.1: Definition and implementation of e-government

World Bank www.worldbank.org	E-Government implies usage of IT infrastructure and technologies by the government agencies which is evident to change the relationship among citizens, businesses, and other arms of government. These technologies can serve a variety of services which includes better service delivery to the citizens, enhanced interactions with business and industry, citizen empowerment through access to information, or more efficient government management. The subsequent benefits can be less corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions.
European Union, 2004	Defines e Government as the usage of ICT in public administration along with organizational change and imbibing new skills to improve the services to public as well as to improve democratic processes.
OECD, 2003	E-Government is "the use of ICTs, and particularly the Internet, as a tool to achieve better government"

The fields of implementation of e-governance are:

E-administration which refers to improving of government processes and of the internal workings of the public sector with new ICT-executed information processes.

E-services which implies improved delivery of public services to citizens. Some examples of interactive services are: requests for public documents, requests for legal documents and certificates, issuing permits and licenses.

E-democracy- implies greater and more active citizen participation and involvement enabled by ICTs in the decision-making process, budget analysis etc.

5. THE ORIGIN OF E-GOVERNMENT IN INDIA

The traces of the origination of e- Governance in India can be seen in 1970 when the Govt. of India had initiated the computerization, although at that time the focus was primarily on automating and interconnecting some important different government offices and functions. This was the pre internet era and main focus was to enable connectivity and information sharing among government departments. In 1977 setting up of National Informatics Centre was the next step to move towards the e- governance era where

information systems started getting managed by Government of India. It was the telecom and IT revolution in 1990, which impelled Government of India to explore avenues for the delivery of citizen services through IT solutions. This decade witnessed numerous e- governance initiatives at national, state, district as well as at block level.

The National e- Governance Plan (NeGP) was launched on 18th May, 2006 and aims at improving delivery of Government services to citizens and businesses with the vision to make all Government services accessible to the common man in his locality, through common service delivery outlets and ensure efficiency, transparency & reliability of such services at affordable costs to realize the basic needs of the common man.

NeGP targets various areas including the following:

- Political ownership and national vision
- Program/Project Management
- Public- Private Partnership
- Architecture & Standards
- Core & Support ICT infrastructure
- Reengineering
- Change Management

5.1.1 E-GOVERNANCE PHASES

Gartner's research report (2000), an international consultancy firm states and formulated four-phase e-governance model to have a check for smooth functioning of e- governance. These phases include:

- **Presence:** This phase includes building the intentions and objectives of the government known. It also includes development of comprehensive government website or a network of integrated different levels of government sites which sets the stage for further advancement. These sites convey the government's initiatives, providing information such as official addresses, working hours, as well as forms and applications to the public, economic reviews, corporate regulations for business and budgetary allocations and spending as a reference for government agencies. Here building infrastructure to facilitate the above given tasks is critically important and would be undertaken in this phase.

- **Interaction:** This phase involves basic interaction between the government and the citizen. Hosting search engines on the sites for easy navigation, information detailing social records and job application forms for the public, permit and license documentation for businesses and census details, submission of requests and approvals to the centre by local government officers would have to be provided.

- **Transaction:** This phase indicates direct interface of the government and relevant recipient for e governance services. After the complete infrastructure and connectivity complete online services can be put forth in this phase resulting in services of online including payment of bill and fine payments, license renewal, aggregating opinion etc. online procurement tax returns etc. for businesses, cooperative budget preparation, tax records, etc. for governmental agencies.

- **Transformation:** This phase is the vital phase and the last phase of proper e-governance implementation and achieves the true vision of e- governance. A single point of contact to citizen as well as related entities, would provide an integrated platform for government services and organization totally transparent to citizens and businesses. Intranets, linking all the government employees of different departments and extranets allowing seamless flow of information thereby facilitating better and timely decision making among all the government agencies, NGO's and citizen.

Similarly there were different organizations and authors who gave the phases of e- governance as per their thought process which includes UN / ASPA study of five stages of e- government development includes emerging, enhanced, interactive and transactional. World Bank study depicts 3 phases of e-Government including publish to disseminate information about government and information compiled by government to wide range of citizen, Interact which means two-way communications, starting with basic functions like email contact information for government officials or feedback forms that allow users to submit comments on legislative or policy proposals and transact which depicts allowing public to obtain government services or transact business with the government online. There were further different organizations and authors who gave their own phases for e- government but the crux of the matter is that e- governance is not a one step process and it is sure to include different phases and these phases are independent from one another but basically four phases which are mandatory are access, interaction, transaction and integration. Effectiveness in e- governance services cannot be achieved by buying more computers or setting up website online transaction and the presence and practice of KM can make it

more effective resulting in more efficient and less costly services to be provided to the citizen.

5.1.2 RISK INVOLVED IN E-GOVERNANCE

The following factors have to be taken into account when examining the risk of implementing e-governance.

- Political stability: Democracy or dictatorial regime
- Level of trust in government: perception of service levels
- The importance of government identity: fragmentation or integration
- Economic structure: education, agriculture, industry or service
- Government structure: centralized or decentralized
- Different levels of maturity: weakest part of the chain determines speed
- Constituent demand: push or pull

5.1.3 CHALLENGES OF E-GOVERNANCE WORLD-WIDE

Alshehri and Drew, 2010 suggested the challenges which include:

- Weakness in IT Infrastructure.
- Awareness among citizen about the e-governance programs are not conveyed properly.
- Issues of privacy and security of information.
- Lack of qualified personnel and lesser training courses.
- Difference in culture and language barrier for countries where diverse culture and linguistics exists.
- Lack of leadership and support from management.
- Lack in regulation and of policy for e-usage.
- Lack of partnership and collaboration.
- Lack of strategic plans
- Resistance to change to e-system
- Shortage of financial resources

5.1.4 MAJOR ISSUES FOR KM AND E-GOVERNANCE

E- Governance and KM combined has major issues of concern which are as follows:

The content of e- Governance is disorganized, many a times contents are meaningless which hinders for accessing information.

Updating of information is not a regular practice which results in taking right decision at the right time in all sectors of government & non -government.

Incomplete e- portals

Many e- government sites do not allow interaction between citizen and government which simultaneously hampers transparency in government services and citizen empowerment thereby losing trust amongst the citizen.

Usage of outdated technologies which enable them to keep pace with the global environment.

The portals of government are often designed by non-professionals who are not trained in knowledge application tools and techniques which thereby results in inadequate creation, capturing, storing, sharing and updating the site information.

Misra, 2008 states that a standard format is used to present knowledge which may not be effectively utilized by all citizen and stakeholders. An answer to this is multichannel delivery of services offline and online.

Association between KM and data mining: Since data mining is also a tool to retrieve information and helps in decision making, these two tools should be jointly used to retrieve the appropriate information so as to take the right decision in right time at right place.

Misra, 2007 states that the e- governance should not be project specific where people work on it as project and checks the success and failure of the project, which thereby prevent the e- governance activities. Since the e- governance aims for improve government services to the citizen it should be a continuous process where knowledge needs to be reviewed and updated to avail the most recent information by the citizen and various stakeholders.

A strong leadership is needed so as to understand, motivate, involve, influence and support e-government initiatives.

Constraints in budget also obstruct the affordability of basic infrastructure for e-government.

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