KNOWLEDGE MANAGEMENT SYSTEMS FOR ORGANIZATIONAL EFFECTIVE CHANGE MANAGEMENT

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ABSTRACT

Change management is an approach to transitioning individuals, teams and organizations to a desired future state. Change management is a management processes wherein changes to the scope of an organization are formally introduced and approved. Knowledge management caters to the critical issues of organizational adaption, survival and competence in face of increasingly discontinuous environmental change. In this paper an attempt has been made to discuss the role of change management for creating and developing organizational knowledge management systems and vice-versa and address the critical issues for organization’s competitive growth. The necessity of learning to negotiate the challenges of the inevitable organizational change requirements that need appropriate knowledge creation and its adaptation are presented. To meet these vital purposes, strategic and integrated innovation has to be organized and Information Technology methodology driven knowledge has to be generated, these aspects are discussed. The ever increasing challenges of organizational change management requirements to suitably handle through appropriate knowledge management practices are also integrated in this paper.

Key Words: Change Management, Knowledge Management, Learning Organization, Information Technology, Innovation.

1.0 INTRODUCTION

Knowledge management (KM) is the use of resources to create an environment where information is accessible to individuals in the organization; KM facilitates individuals to acquire, to share and to use the information to further develop their own knowledge for the benefit of the organization. Change management (CM) is a systematic approach in dealing with change, both from the perspective of an organization and at individual level. For an organization, change management means defining and implementing procedures and technologies to deal with changes in the business environment to benefit from changing opportunities. The phenomena of change management and knowledge management are interdependent that mutually reinforce for the organizational success and competitive positioning with the support of organizational
innovation practices and application of appropriate information technology (IT). All these components are suitably discussed in this paper.

2.0 KNOWLEDGE MANAGEMENT (KM) 3,4

In today’s information age, knowledge is the key to a company’s success. A continuously learning organization will manage its knowledge as a strategic asset to enhance its competitive position. Knowledge management has emerged in recent times as a phenomenon with wide-ringing implications for organizational innovation and competitiveness.

KM caters to the critical issues of organizational adaption, survival and competence in face of increasingly discontinuous environmental change. Essentially, it embodies organizational processes that seek synergistic combination of data and information processing capacity of information technologies, and the creative and innovative capacity of human beings. KM is increasingly important because of the shift from a predictable world paradigm to one governed by discontinuous change. It is essential for organizational survival in the long run, given that knowledge creation is the core competence of any organization.

2.1. Knowledge Driven Processes

Organizations are becoming more aware of the value of knowledge that resides in peoples' heads. Greater thrust need to be given by the managements on creating and maintaining portfolios of organizational skill sets in terms of knowledge assets. With increase and spread of globalization, one has to improve constantly in order to survive in the existing market with a knowledge driven business management process. The challenge is to provide the correct information that can lead to effective knowledge and can be further used to make better decisions.

2.2. Innovation and KM

Innovation and creativity have both been very important to the growth and development of KM and related technology. In this scenario, the strategic management of technology, prompted by strategic innovation decisions, governs the wealth and prosperity of knowledge enabled organizations. Managing innovation includes integrating technology, market and organizational change.

2.3. Knowledge Capital

The organizational wealth of knowledge is referred as knowledge capital, knowledge assets, intangible assets, and intellectual capital. KM caters to the critical issues of organizational adaption, survival and competence in face of increasingly discontinuous environmental change. Essentially, it embodies organizational processes that seek synergistic combination of information processing capacity of information technologies, and the creative and innovative capacity of human beings.
3.0 CHANGE MANAGEMENT (CM)\textsuperscript{5,6}

Change management is a structured approach to transitioning individuals, teams, and organizations from a current state to a desired future state. It is an organizational process aimed at empowering the employees to accept and embrace changes in their current business environment. In project management, change management refers to a project management process where changes to a project are formally introduced and approved.

CM is a way to implement new methods and systems more effectively in an ongoing organization to adapt to the complex environment such as: legislation, globalization, shifting economic tides and others. Change management is about the decision of an organization to make changes and take risks in order to improve the system. The system is, to start from an “as is” situation and move to a “should be” situation. CM needs to bring more insights in the learning culture of an organization.

3.1. Stages and Phases of CM\textsuperscript{7,8}

CM has three different stages: they are: Adapting to change, Controlling change, and Effecting change. A proactive approach to deal with change is at the core of all three aspects.

3.2. Phases

The three phases of CM are: Unfreezing, Changing to the desired state and Refreezing into a new balance. - Unfreezing: Making the organization change-ready, make them see the necessity for changing the organization to stay competitive and profitable. - Change: Implementing the change itself. - Refreezing: Restoring the stability in the organization.

3.3. Change and Culture

The need is to change the culture of an organization to make the organization change-ready, a culture that supports change by motivating employees to be creative and ready to change at all levels of the organization.

3.4. Organizational Change\textsuperscript{9}

Organizational change management is a framework for managing the effect of new business processes, changes in organizational structure or cultural changes within an enterprise. This addresses the people side of change management. Organizational change involves: Strategic changes, Technological changes, Structural changes, Changing the attitudes and behaviors of employees.

3.5. Multidisciplinary Requirements

Multidisciplinary requirements for organizational change management are: - Creative marketing to enable communication between change audiences - Social understanding about leadership’s styles and group dynamics - Aligns groups’ expectations, communicates, integrates teams and
manages people training - Makes use of metrics for: leader’s commitment, communication effectiveness, the perceived need for change to design accurate strategies.

An effective change management plan needs to address all above mentioned dimensions of change which can be achieved in following ways:- Putting in place an effective Communication strategy which would bridge any gap in the understanding of change benefits and its implementation strategy; - Devise an effective skill upgrading scheme for the organization. Overall these measures can counter resistance from the employees of companies and align them to overall strategic direction of the organization; -Personal counseling of staff members (if required) to alleviate any change related fears.

3.6. CM Strategies
Successful organizational change management strategies include: - Agreement on a common vision for change; -Strong executive leadership to communicate the vision and sell the business case for change; - A strategy for educating employees about how their day-to-day work will change; - A concrete plan for how to measure whether or not the change is a success; -- Follow-up plans for both successful and unsuccessful results; - Rewards that encourage individuals and groups to take ownership for their new roles

3.7. Change and Learning
Change and learning go hand-in-hand. The learning organization is based on being creative with change. Change is a process to learn and likewise. To learn something is a changing process. To be ready for changes necessitates being open and tolerant to new beliefs, learning new behaviours. Need for the organization is to ‘unlearn’ previous beliefs, to cope with new dangers in a complex environment. If they don’t change then failure will eventually be the only option.

3.8. Stakeholders and CM
A systematic approach to the change management is beneficial when change requires employees throughout an organization to learn new behaviors and skills. By formally setting expectations, employing tools to improve communication and proactively seeking ways to reduce misinformation, stakeholders are more likely to buy into a change initially and remain committed to the change throughout any discomfort associated with it.

3.9. Characteristics of Organizational Change
Awareness, Desire, Knowledge, Ability, Reinforcement; ADKAR model summarizes the characteristics that an organization needs if it’s willing to change. Awareness – of why the change is needed; Desire – to support and participate in the change; Knowledge – of how to change; Ability – to implement new skills and behaviours; Reinforcement – to sustain the change
4.0 KNOWLEDGE MANAGEMENT -VS - CHANGE MANAGEMENT\textsuperscript{10, 11}

It is important to understand where knowledge is used for change management and where change management is used for knowledge management.

4.1. CM in Knowledge Environment\textsuperscript{12, 13}

By knowledge management individuals acquire, share and use that information and are enabled to apply their knowledge to the benefit of the organization. It is clear that the organizational structure has to make it possible for individuals to develop knowledge and share knowledge. CM deals with changing environments by implementing new procedures and technologies. For knowledge development and sharing, KM makes use of organizational and CM techniques. With changing environment, organization develops new knowledge, because it tries to get rid of the old ineffective ways of working and tries to find new and improved ways. There is a great need for knowledge creation when the organization is in a constantly changing environment. In change management situations, it is important to be able to capture new knowledge. Managers need to use both knowledge management and change management techniques. Knowledge is needed to make changes in the organization, and most of all changes are needed to create new knowledge.

5.0 SIGNIFICANCE OF KM AND CM IN ORGANIZATIONS\textsuperscript{14, 15, 16}

Importance of KM and CM interdependency contribution for organizational development are discussed here.

5.1. CM to Address Threats

Effective CM enables the organization to address the risks such as: - Productivity decline; - Escalation of employee resistance; - Dynamic resistance to sabotages change implementation; - Valued employees leave the organization; - Morale deteriorates; - Time and cost overruns of projects; - Employees avoiding and passive towards the new way of doing things; Splits created in the organization; - Failures and difficulties in implementing the desired change.

5.2. KM for Success

Overload of data is making knowledge management increasingly more important. Three key reasons why active management of knowledge is important to a company’s success are: - Facilitates decision-making capabilities; - Builds learning organizations by making learning routines; - Stimulates cultural change and innovation.

5.3. KM Solutions

With increase in business environment complexity and spread of globalization, one has to improve constantly in order to survive and grow in the existing and new markets. Knowledge
driven business management processes only facilitate run organization’s business effectively. Exploiting in the marketplace is the newest mission for having a competitive advantage.

5.4. Better Decisions

The challenge is to provide the correct information that can lead to effective knowledge and can be further used to make better decisions. KM solutions create a platform for extensive data mining. With sharing of knowledge across the firm and getting the details or feedback from consumers and managers can further help in predicting the future trend and thus take a better decision. It enables enterprise to analyze its knowledge in terms of resources, documents, and people skills.

5.5. Business Processes

KM is also a business process that formalizes management and leverage of firm’s intellectual assets. KM is an enterprise discipline that promotes a collaborative and integrative approach to the creation, capture, organization, access and use of information assets, including the tacit knowledge of people.

6.0 INNOVATION FOR KM AND CM INTEGRATION\textsuperscript{15,16}

Innovation and creativity have both been very important to the growth and development of technology. Innovations of KM and CM integration need to cater shortening of techno-economic life cycles and rapid generation and commercialization of new technologies. Managing innovation includes integrating technology, market and organizational change. The strategic management of technology, prompted by strategic innovation decisions, governs the wealth and prosperity of organizations.

Innovation could be grouped into the following categories: - \textbf{Product Innovation}: Emphasis is on performance, size, price, environmentally friendly features and efficient in usage. This can be made possible through: Technical innovation, Application innovation, Radical innovation. - \textbf{Human Innovation}: Innovative people should have diverse capabilities like the ability to view the technology both in terms of the market requirements as well as that of the shop floor or laboratory. The qualities and skills include: Openness, Elasticity, Agility, and Responsiveness - \textbf{Organizational Innovation}: It should be a 'Learning Organization', where people continually expand their capacity to create the desired results. Organization should provide suitable measures and environment. - \textbf{Market Innovation}: Innovation in the marketplace is dependent on inputs from multiple sources. Identify market positioning as a leader, niche player. – \textbf{Business Innovation}: Identify the business and industry life cycle patterns, essential core technology needed and usage patterns of the marketing resources. - \textbf{Information Systems Innovation}: New social and economic infrastructures need to be established through internet and such new information and communication networks.
**7.0 LEARNING ORGANIZATION**¹⁷, ¹⁸, ¹⁹

Learning organization is the term given to a company that facilitates the learning of its members and continuously transforms itself. Learning organizations enables themselves to remain competitive in the business environment.

**7.1. Learning and Organizational Change**

Learning is essential to individuals and organizations, whilst change is inevitable and needs to be managed wherever possible. Issues are from the perspectives of process, structure, meaning and methods and their impact on the organizational change process. The advancement of human knowledge and understanding of organizational learning and appropriate responses to the process of change determine social and economic progress. Organizational change involves: - Strategic changes, - Technological changes, - Structural changes, - Changing attitudes and behaviors of personnel. This necessitates knowledge creation and conversion of tacit knowledge to explicit knowledge and vice versa.

**7.2. Main Features of Learning Organization**

A learning organization need to have five main features: - Systems thinking; - Personal mastery; - Mental models; - Shared vision; - Team learning.

**Systems thinking:** This is a conceptual framework that allows people to study businesses as bounded objects; **Personal mastery:** The commitment by an individual to the process of learning; **Mental models:** The assumptions held by individuals; **Shared vision:** Development of a shared vision motivates the staff to learn; **Team learning:** The accumulation of individual learning constitutes.

**7.3. Benefits of Organizational Learning**

Benefits of organizational learning are: - Maintaining levels of innovation and remaining competitive; - Being better placed to respond to external pressures; - Having the knowledge to optimum linkage of resources to customer needs; - Improving quality of outputs at all level; - Improving corporate image by becoming more people oriented; - Increasing the pace of change within the organization.

**7.5. Barriers**

The Barriers to overcome to establish learning organization are: - Concept is intangible; - Benefits cannot be quantified easily; - Personal mastery can even be seen as a threat to the organization in a limited way; - Lack of a learning culture; - Resistance to learning from people who feel threatened by change; - Closed mind sets, - Organizational size may become the barrier to internal knowledge sharing.

**7.6. Learning from Change**

Learning from change is by participatory monitoring and evaluation as explained below:-**Monitoring:** Knowing where we are; Observing change; Check; Regular on-going assessment; Routine reflection; Feedback. - **Evaluation:** Reflection process to look back and foresee;
Assessment of achievements/impacts over a longer period; Learning from experience; Valuing; Performance review. - Participation: Shared learning; Democratic process; Joint decision making; Co-ownership, Mutual respect; Empowerment.

8. INFORMATION TECHNOLOGY AND KM\textsuperscript{20,21,22}

Information technology (IT) is the application of computers and telecommunications equipment to store, retrieve, transmit and manipulate data, often in the context of a business or other enterprise. Higher level of KM is effectively possible only by suitable IT interventions.

8.1. IT and Knowledge Methodologies

KM is creation is a new combination of materials, systems, and already existing knowledge supported by relevant IT tools. The thinking and creation process progress with certain selected procedures. New knowledge will be created at a certain stage of technology integration and fusion process of different knowledge domains. It enables to develop systems methodology that uses approaches in social and natural sciences that complement to each other.

KM is increasingly becoming important because of the shift from a predictable world paradigm to one governed by discontinuous change. Second, it is essential for organizational survival in the long run, given that knowledge creation is the core competence of any organization. Latest advances of IT can facilitate the processes such as channeling, gathering, or dissemination of information.

Knowledge is information that has been organized and analyzed to make it understandable and applicable to problem solving or decision making. Conversion from tacit to explicit knowledge and vice versa is crucial in knowledge creation and IT plays a crucial role in the conversion.

8.2. Knowledge Creation\textsuperscript{23}

Knowledge management is not the activity only for resources. Creation is a new combination of materials. It’s thinking process progresses with a certain fixed procedure. New knowledge will be created at a certain stage of an integration or fusion process of different knowledge with support of IT.

8.3. Approaches to KM

One category approach relies on people, and the other relies on computer. Knowledge is created through the interaction between tacit and explicit knowledge, and proposes four modes of knowledge conversion.

8.4. Modes of Knowledge Conversion\textsuperscript{24}

The modes of knowledge conversion are as follows: - Socialization is a process of sharing experiences and thereby creating tacit knowledge such as shared mental models and technical skills; - Externalization is a process of articulating tacit knowledge into explicit concepts, taking the shapes of metaphors, analogies, concepts, hypotheses, or models; - Combination is a process
of systematizing concepts into a knowledge system. This mode of knowledge conversion involves combining different bodies of explicit knowledge; - **Internalization** is a process of embodying explicit knowledge into tacit knowledge. It is closely related to learning by doing. This theory is mainly devoted to management of knowledge that workers of an enterprise have individually.

8.5. **Information Science**
Researchers from information science have been trying to establish their own knowledge science using the rapid developing information and communication technology. Information engineering has been developed as a study of computer hardware and software, and its application, i.e., computer science.

8.6. **Intelligence**
The energy to bring transformation between information and knowledge is called intelligence. Intelligence is: - Ability to understand and learn things; - Ability to think and understand things instinctively and automatically.

8.7. **Knowledge Science**
In the context of contemporary KM, there are mainly two approaches to develop intelligence of human beings: one is from management science and the other is from information science. To integrate these approaches and establish a new discipline can be made possible by establishing the domain of Knowledge Science.

8.8. **Methodology for Knowledge Creation**
It consists of developing a systems methodology that uses approaches in social and natural sciences complement to each other. This systems methodology itself is a system consisting of five subsystems.

8.9. **Subsystems**
The subsystems are: - Scientific approach that uses physical laws, data analysis, others; - Information science, especially a large-scale computer simulation and the networking technology; - Method in social science, which is related to forming partnerships among social members; - Knowledge science that integrates, transforms, and creates knowledge; - Systems science is used to manage these different approaches.

8.10. **Knowledge Creation Subsystems**
The knowledge creation subsystems are discussed here: - **Subsystem Intervention**: Consider what kinds of knowledge are necessary to solve the faced problem. Here, knowledge is a problem; - **Subsystem Intelligence**: Collect necessary data and information, analyze them with a scientific attitude, and make a model for simulation or optimization. Here, knowledge is a model; - **Subsystem Imagination**: Simulate complex phenomena based on partial knowledge, using information technology. Here, knowledge is scenarios; - **Subsystem Involvement**: Listen to
opinions of people by organizing a meeting or questionnaire survey. Here, knowledge is opinions; - **Subsystem Integration:** Evaluate reliability and justifiability of outputs from the subsystems, and integrate them. Here, knowledge is solutions.

9.0 IMPLEMENT CM AND KM INTEGRATION SOLUTIONS$^{25,26}$

9.1. Components for CM
The suggested cultural components to be considered for implementing change are: - Eliminate rules and policies that hinder the change and create new ones that reinforce the desired way of operating; - Develop goals and measurements that reinforce the desired changes; - Replace old ways of doing things with new customs and norms; - Develop experiential training that provides real time, hands on experiences; - Recognize individual and team contributions for making the changes to work; - Recognize and reward who change to the desired behaviors; - Deliver communications in new ways to show management’s commitment to change; - Make sure the physical environment reflects the desired change; - Make sure that organizational structure reinforces the operational changes.

9.2. Components for KM
Implementation of KM solutions consists of the under-mentioned stages: - Identifying places and levels in organization’s business processes where knowledge is required; - Devising a system to map knowledge key-stages and manual processes to IT-enabled processes; - Merging the core-business process with key inputs from the Knowledge base wherever applicable.

10. CONCLUSION

The spirit of continuous learning has to at the heart of corporate management of the organization. It has to be practiced and kept updated on a continuous basis. Such practice can help develop good teams and ultimately position the organization at the advantage position in the environment of ever increasing competitive struggle in the world of its business and industry. Changing environments need changing organizational structures. For the organization to stay ahead in the economic world, need is to change method and systems constantly to create new knowledge and to have a competitive advantage. Governments also need to gain new knowledge by changing their systems to keep the people confident. Change management can help to conceptualize new knowledge for added value to the organization through knowledge management processes. Knowledge management systems for organizational effective change management necessitate constant organizational and technological innovation supported by the culture and practice of learning organization. Having the best technologies doesn't necessarily ensure creativity and innovation that is necessary for organizational competence. Effective utilization of technology has to be
synchronized with effective utilization of the creative and innovative capacity of the human components. Knowledge management plays a vital role in collecting information from various domain experts and creating databases supported by organizational intranets.

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