Human Component of Knowledge Management for Innovation in Institutions of Higher Learning: A Literature Review

[1]Mohamed Ibrahim, [2]Aliyu Olugbenga Yusuf, [3]Abdul Rahman Bin Ahmad Dahlan

Kuliyyah of Information Technology, International Islamic University, Kuala Lumpur 53100, Malaysia

Abstract: **This paper tries to find out and clarify the role of human in knowledge management in institutions of higher learning as regards to innovation. This paper seeks to describe, recognize and classify the key drivers for application of knowledge management in innovation for higher institution. It also details the nature of the role of knowledge workers (human component) in innovation as well as its value proposition. The methodology used was literature research and the findings indicated that innovation has become the mainstay of organizations including institutions of learning.**

Keywords: **Knowledge Management; Innovation, Institutions of higher learning, organization; Human Component; Knowledge Workers.**

I.   INTRODUCTION

In the era of modernization and technological advancement, knowledge creation and management have become dominant factors for organization's survival and global competitiveness. Successful companies are those that consecutively create new knowledge, spread it widely throughout the organization and quickly incorporate it into new technologies and products [1]. As the world of work changes from an industrial economy to a knowledge-based one, the design of the office environment is struggling to adapt.

A common concept in the modern organizations is the concern of managers to achieve cultural change through some of the radical management approaches. Knowledge management is one of such management approaches, and is illustrated as an innovative tool for developing businesses with the potential to affect the whole organization's business, adoption of knowledge management by an individual and making changes in his or her behaviour [2].

Knowledge is defined as ''justified true beliefs'' derived from the accumulated information, and knowledge creation as the generation of new knowledge. The label "knowledge work" was first applied in 1960, simultaneously and independently by two American economists, Peter Drucker and Fritz Machlup. The first identified knowledge workers were doctors, lawyers, scientists and academics. The term was later extended by Drucker to include "knowledge technologists": computer technicians, lab analysts, paralegals, software designers – people whose work requires formal knowledge yet still contain elements of process work. Knowledge technologists are now among the fastest growing class of workers [3].

Innovation also plays prominent roles in the organization's future and keep the company alive at international level. The nature of global economic growth has been changed by the speed of innovation, which has been made possible by knowledge workers, Organizations have to ensure that their business strategies are innovative to build and sustain competitive advantage. Innovation has, however, become increasingly complex due to changing customer needs, extensive competitive pressure and rapid technological change. The complexity of innovation has also been increased by growth in the amount of knowledge available in the organizations as bases for innovation. Innovation is extremely dependent on the availability of knowledge in the organization. In IHLs, the same range of meanings applies in higher

education, where innovation can refer simply to some new way of doing things, or a change that improves administrative or scholarly performance, or a transformational experience based on a new way of thinking.

Human component in knowledge management plays a vital role in the creation, gathering, management and integration of knowledge through innovation. The powerful tool that can make these successes are networking, collaboration and contributions from individual and specialist. According to the theory of organizational learning, inter-organizational information and knowledge sharing is important, because no single organization can have all the resources necessary to run its activities without inputs from other organizations.

II.   BACKGROUND INFORMATION

Knowledge Management is very necessary in order to have real impact on the way we do things ranging from business, transactions and also learning especially in higher institutions. It needs radical changes in the way we utilize knowledge, it needs to be about creating new knowledge, applying knowledge and in the words of Peter Drucker: "Making it productive." In other words, Knowledge Management needs to fundamentally focus on creativity and innovation[4].

Innovation is described in different ways; innovation refers to the introduction of a new combination of the essential factors of production into the production system. Innovation capital is the competence of organizing and implementing research and development, bringing forth the new technology and the new product to meet the demands of customers. It involves new product, new technology, new market, the new material and the new combination. Innovation process encompasses the technical, physical, and knowledge-based activities that are central in forming product development routines. Nowadays many companies have struggled to innovating new knowledge and technology [5].

Knowledge and technology are very important critical success factors for strategic formulations. Critical success factors are the managerial and organizational construct that needs to be effectively addressed to improve the successful implementation. Knowledge is becoming more useful progressively because management is taking into account the value of productivity, which enables the transformation of knowledge from one form to the other.

III.   LITERATURE REVIEW

Davenport and Prusak [6], posit that organizational knowledge is often becoming embedded not only in documents or repositories, but also in organizational routines, processes, practices, and norms. Malhotra [7], affirmed that knowledge that is contained in the minds of organizational members is the greatest organizational resource. Also a study conducted in 1998, Malhotra[7] defined knowledge management as ''a synergistic combination of data and information processing capacity of information technologies, and the creative and innovative capacity of human beings.'' Rastogi [8] also defined knowledge management as a systematic and integrative process of coordinating organization-wide activities of acquiring, creating, storing, sharing, diffusing, developing, and deploying knowledge by individuals and groups in pursuit of major organizational goals. However, despite the subtle differences between various definitions, scholars agree that effective and efficient knowledge management is central to organizational performance and success .

The main theoretical underpinning for understanding how organizational knowledge is created, shared, converted and transferred in present-day organizations, although some scholars emphasized the need to convert tacit knowledge and assuming cultural universality, this provides an internationally agreed terminology that is used to describe a generalized theory of knowledge creation and conversion to which important divergences can be drawn . Therefore, Nonaka's framework) has been used to describe the process of knowledge creation and conversion in organizations.

Learning process has become a debatable concern bearing in mind the wide adoption of IT-based innovation. E-learning utilized internet connectivity in this millennial age, constituting an incontestable learning substitute for all those whose working places are connected. The advent of on-line learning environments in the workplace in social media such as My space, web blogs, wikies and video-based webinars are development tools clearly leading to an on-line aspiration of co-creation where individuals, and workplace learners in particular, expect to have a voice in the process of creating content through communicating.

Institutions of higher learning are seen as places where individuals endlessly expand their capacity to create the results they truly desire and places where new and extensive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together [9].

In the work of innovation was broadly be described as the discoveries of implementation and interventions and the process by which new products or outcomes [5], be it systems or processes, come into being. There were distinction between radical and incremental innovation, where incremental innovations were present as line extensions or modifications of existing products. They are usually classified as market-pull innovations. Incremental innovation does not require a significant departure from existing business practices and are therefore likely to enhance existing internal competencies by providing the opportunity to build on existing know-how. Radical innovations are likely to be competence-destroying, often making existing skills and knowledge redundant and necessitating different management practices. Radical innovations often put the business at risk because they are more difficult to commercialize. Radical innovations are considered crucial to long-term success as they involve the development and application of new technology, some of which may change existing market structures. Companies that facilitate both radical and incremental innovation are more successful than organizations that focus on one or the other.

Categorization of Knowledge:

Scholars generally categorize ''knowledge'' into two types – tacit and explicit knowledge; Nonaka and Toyama, [10] build on the difference between explicit and tacit knowledge. Tacit knowledge, also known as embedded and sticky knowledge, is subjective and experience based knowledge, which cannot be expressed in works, sentences, number or formulas, etc. This also includes cognitive skills such as beliefs, images, intuition, and mental models as well as technical skills such as craft and know-how. Tacit knowledge is deeply embedded in an individual's actions and experience as well as in his/her ideals, values, or emotions [10].

Explicit knowledge, also sometimes called leaky knowledge, is objective and rational, which can be documented and distributed to others, which includes guidelines, procedures, white papers, reports, strategies and others [8][10]. Although both types of knowledge have distinguishing features between them, they complement each other so far as knowledge creation and conversion in organizations is concerned. Explicit knowledge without the tacit insight quickly loses its meaning [10]. However, ''tacitness may be considered as a variable, with a degree of tacitness being a function of extent to which the knowledge is or can be codified or abstracted''. Knowledge may dynamically shift between tacit and explicit over time, but some knowledge will always remain tacit [10].

According to Engle & Engle [11], he affirmed that many experienced KM practitioners view effective knowledge management programs from a systems engineering approach. He states that the George Washington University (GWU), Institute for Knowledge and Innovation promote the systems engineering model using the four-pillar framework. The pillars of leadership, organization, technology and learning encompass more than forty sciences that must work in concert. This framework provides GWU's shorthand definition of knowledge management for the twenty-first century [3]. Dr.Franceso Calabrese summarizes the four-pillar approach to knowledge management as follows: With leadership, commitment supporting organizational collaborative practices, processes and forums, and appropriate technology enabling tools, one can grow a learning enterprise/environment to perpetuate a sustainable knowledge-enabled culture [3].

Knowledge worker:

In the work of Engle & Engle [11], the study state that forefront of this frontier is the knowledge worker. While we must remain cognizant of the importance of balancing all of the elements and maintaining a systems engineering approach to sustain an effective knowledge management program. It is the knowledge worker that is the key element of the KM strategy because without the worker, there is no knowledge exchange. Therefore, to be successful, a KM program must encourage its employees to reach their maximum potential. This includes employees building their confidence as knowledge workers, realizing the importance of the knowledge they possess, and encouraging employees to share their knowledge assets among co-workers throughout their organization. To be clear, all workers have knowledge to contribute to an organization. A successful KM program provides the mechanism to encourage these workers to participate in the knowledge sharing activities, which enhances the potential for the organization to operate at peak efficiency. Before we can encourage workers to participate in knowledge sharing, we need to understand the culture of the knowledge worker within the organization. What are the reasons why workers are willing or unwilling to share the knowledge and expertise they have acquired during their career? Also, organizational culture is also important, their views concerning the importance of employee knowledge, and some reasons for wanting or not wanting to capture, validate, and share this knowledge among their peers.

To overcome the resistance to knowledge sharing, there is a need to explore approaches that a knowledge management practitioner and facilitator can provide.

Understanding organizational culture:

Organizational culture has gained wide acceptance over the decades as a way to understand human systems. It has also been investigated from a varied perspectives and discipline ranging from disciplines such as anthropology and sociology, to the applied disciplines of organizational behaviour, management science and organizational commitment [1] defined organizational culture as a set of learning responses where the basic assumptions and beliefs that are shared by members of an organization and define in a basic 'taken-for-granted' fashion an organization's view of itself and its environment''. Organizational cultures are viewed by Rai [1]. as complex combinations of formal and informal systems, processes, and interactions. Formal organizational culture components include leadership, structure, policies, reward systems, socialization mechanisms, decision-making processes, etc. Informal organizational culture components include implicit behavioural norms, values, role models, organizational myths and rituals, organizational beliefs, historical anecdotes, and language.

The contemporary definition of organizational culture includes what is valued, the dominant leadership style, the language and symbols, the procedures and routines, and the definitions of success that characterizes an organization . The concept of culture seems to lend itself to very different uses,such as collectively shared forms of ideas and cognition; symbols and meanings; values and ideologies; rules and norms; emotions and expressiveness; the collective unconscious; behavior patterns; and structures and practices.

Competing value framework of organizational culture:

There are competing values framework for organizational culture and was initially based on research to identify indicators of organizational effectiveness. The basic framework consists of two dimensions: one dimension differentiates an emphasis on flexibility, discretion, and dynamism from an emphasis on stability, order, and control; and the other dimension differentiates an internal orientation with a focus on integration, collaboration, and unity from an external orientation with a focus on differentiation, competition, and rivalry [12].

While one continuum ranges from versatility and pliability on one end to sturdiness and durability on the other end, the other ranges from cohesion and consonance on the one end to separation and independence on the other hand Cameron [12] pointed out that these two sets of competing values are recognized dilemmas in the organizational literature.

The two dimensions of the ''competing values framework[fig:1]'' form four quadrants, each one representing a distinct set of organizational and individual factors which guide organizational tasks of environmental management and internal integration [12]. These four models represent opposite or competing assumptions . Each dimension highlights a core value that is opposite from the value on the other end of the continuum, i.e. flexibility versus stability, internal focus versus external focus. The dimensions, therefore, produce quadrants that are also contradictory or competing on the diagonal.

Quinn and Rohrbaugh [12] named the four quadrants as four models: human relastions model (upper left quadrant), open system model (upper right quadrant), rational goal model (lower right quadrant), and internal process model (lower left quadrant). The four effectiveness criteria models in the ''competing values framework'' are also called four organizational culture types [12]. Based on former organizational culture studies in the literature, these four culture types were termed as clan, adhocracy, market, and hierarchy, respectively. The characteristics and implications of each culture type are summarized as below.

Modifying the ''competing value framework'':

Although the ''competing values framework'' provides a comprehensive model for organizational culture analysis, of late some researchers are of the view that the two dimensions envisaged in the ''competing values framework'' do not encompass all the possible dimensions of organizational culture, for example, ethical and trusting culture dimension [8]. The origin of the concept of ethics can be traced back to Aristotle's (1952) Nicomachean Ethics according to which collective ideals of engagement such as friendship are possible only when the fundamental conditions of trust and ethical conduct towards each other are met. Jones[14] read the implications of Immanuel Kant's work for business ethics – ''the ethical business exceeds expectations and demonstrates that it is worthy of trust.'' Wortuba et al called for such ethics based trust to be translated into a formal code of ethics which ensures that members know what is expected of them. For

the purpose of this paper, trusting and ethical culture in the context of business is defined as the prevalence of social relationships in the form of formal codes and informal expectations that people hold of each other in an organization.

Fig 1: Comprehensive Model Framework

Thus, management commitment to ethics is an important determinant of corporate social performance [9], indicating that the nature of the organization is dependent on the cultural commitments prevailing in the organization. When organizations establish processes that support collective moral agency, then they can gain benefits in the form of increased effectiveness. Managerial decision making draws more from ethical values embedded in peer dynamics than from the clarity of corporate policy [13]. This indicates that the nature of ethics that is practiced in the organization is an important determinant of the ways in which decisions are made and has implications for effectiveness. Decision making methods are embedded in the knowledge management systems prevailing in an organization, and issues of trust, collective moral agency and peer dynamics are thus important constituents of effective knowledge management systems.

Human relations, culture and socialization process:

The fundamental premise which underlines both frameworks is the significance of human relations and socialization processes for knowledge sharing. The ''competitive values framework'' lays emphasis on the significance of managerial leadership behaviors, which develop a sense of affiliation, trust and belongings in a common social system or clan culture to facilitate information sharing [12]. Similarly, socialization processes in the ''knowledge creation and conversion'' framework[10],are essential for tacit knowledge accumulation. Thus, both frameworks acknowledge that even in organizations with well-developed knowledge management systems, people need to collaborate with others to provide answers to problems. Organizations characterized by human relations, culture are viewed as effective if they are changing,

Page | 566

adapting, and organic – for instance, neither the product mix nor the organizational form stays in place very long at firms such as Microsoft or Nike – since agility and volatility typify their performance and are keys to their success. Such organizations, for, e.g. 3-M, Microsoft, or Amazon.com, in order to create value in and for themselves, need to create new ideas, self-organize, and collaboratively learn to cope up successfully with the rapidly changing environment.

IV.   SOME OF THE KEY FACTORS THAT DRIVE TO INNOVATION

Age:

An improvement in the quality of life can possibly be achieved through a new type of service innovations.

Necessity:

In order to develop innovative and cost effective future enabled technologies, products and processes that work in complex environments and systems, often by humans who continually change their wants and demands.

Environment:

Put in place adequate measures for skills development of teaching staff and also for greater collaboration in performing their teaching duties. Build supportive relationships and trust between the relevant actors (students, academic staff, employers)

Incentives:

Consider incentives and rewards for members of staff who engage in innovative practices.

Collaborative leadership:

Collaborative leadership can be very effective in conflict moderation between innovation actors, who may sometimes have a conflicting relationship, for instance, if innovation triggers a divide between junior and senior staff

V.   CONCLUSION

This study provides better insight between what a known manager needs and the role of knowledge manager towards innovation in higher institution of learning. It emphasis the need for attitude reformation towards a need for sharing and disseminate knowledge within and outside higher institutions. The evil behind the unwillingness to share knowledge among knowledge workers are huge.

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