

Knowledge Management Innovation in the Era of Digital Economy

Abdulnaser S. H. Al-MSloun

University of Jeddah "Alkamel Branch"

Jeddah, Saudi Arabia

[E-mail: asalem2@uj.edu.sa](mailto:asalem2@uj.edu.sa)

Abstract

There is no doubt that the newer forms of digital technology represented by Big Data analytic technology and Internet of Things will affect on the knowledge management process and consequently the associated innovation affordances. This paper shed the light on the innovation, environment and financing innovation as well as the relationship between the knowledge innovation and the new forms of digital technology. Also, we will outline the importance of innovation for organizations and types, as we will discuss the concept of innovation and knowledge management measure innovation management, then we will discuss in some detail the organizational innovation and sources of innovation and organizational stages of the innovation process.

1. Introduction

All indications point to two important facts: the first is that there is a real understanding of the importance of basic information important resource to be managed wisely and responsibly. The second fact is the growing interest in what is known as knowledge management. At a time when there seems to be almost an agreement on the meaning of "information management", there are still conflicting ideas about the true meaning of the concept of "knowledge management", some understand the "knowledge management" on the basis of being a term substitute for, or synonymous with what we call the designation "managing the information". That we are responsible for knowledge management and deal with them, so they are part of a diversified our interests, while others argue that knowledge management are some of the efforts to "complex" that relate to the organization of the entrances to the sources of information across networks [1]. The men administration see the knowledge management on the basis of being a new management fad what are, in reality, only the latest effort made by the producers of information technologies and consultants administrators to sell their solutions and innovative business people (in the Western world) are eager for any tools that can help them achieve competitive progress that they are looking for and eager to get it.

There is no doubt that knowledge management has been able over the past five years to become widely accepted, and there is increasing interest in them; not by the processors only, but by many members of the institutions dealing with the knowledge (enterprise class, this has in fact most developed societies institutions and many developing societies institutions). At present, there is a clear trend of everyone towards understanding the role of knowledge in business success and the development of societies, and about how to invest in knowledge to achieve competitive progress, at the level of individuals, groups, institutions, and communities. It is certain that there is a growing sense that revolves around the importance of community to achieve maximum benefit from the use of knowledge [2].

The core platform that supports the «Internet of things» network is the rapid developments that have been achieved in the concept of analytical tools for large data and application in practice. Big data can be defined of simple words, it amounts very large data, which can be very difficult to treat and analyze traditional statistical means, but it is used specialized tools to analyze massive data, which is simply processes the application of the analysis of complex data sets where usually use the capabilities to process information in real time methods . These capabilities allow data analysis within the model

expectations, i.e it can get patterns and information from the data can be used for operational and strategic and tactical purposes.

There is a relationship between the Internet of Things and the huge data. Through its flexibility, the Internet of Things can cope with most of the challenges related to massive data. Given that Internet of Things technologies will be deployed within most sectors, will lead to an influx of very large volumes of data will be new methods to collect and analyze these data and to take advantage of their information arise. Overlap between the Internet of Things and the data will be part of the huge number of areas, there will be big glowing skills specialized institutions in case she wanted to make the most of this overlap. Demand will be greatest on the two disciplines of business disciplines which specialists analyze the data they are able to determine the appropriate questions about the available data and how it can provide useful results for decision-makers, and scientists data who will work to coordinate the role of the analytical tools which is witnessing significant developments and oversee the process of entering data into a section of the study and analysis. In rare cases, it can be a data analyst and the world of data is the same person that achieves value [3].

2. Innovation and Knowledge Management

We have been studying innovations through a variety of fields such as technology, trade, and social systems, economic development and systems management and organizational practices, so we find a large number of approaches to the study of innovation has resulted in a huge number of definitions given by scientists, The following are some of the views of researchers towards the definition innovation: -

2.1. Innovation as a Means of Applying New Tools for Positive Change Performance

Innovations are the integrated areas of change adopted and applied by the organization to improve its performance and the methods used to achieve success in improving the results of economic work and the purpose of the integrated areas and the methods used to change the following: the application of an idea or a product, service or process or a new marketing method or administrative practice or new regulatory or a new way to organize a workplace or a new foreign relations [4], and that the broad definition of innovation include all possible types of innovations and therefore includes all sorts of possible innovations and also illustrates this definition that innovation is not only that the organization is the development of innovation means but it can also be considered as the organization is adopting innovations other organizations and companies. Innovation is defined as the application of a new idea or a new product or a new process or a new service or a new practice. We believe that: Innovation is the application of creative ideas, whether originating from within the organization or from outside and turn it into a product, service or process or a new marketing method or administrative practice or new regulatory or a new way to organize the workplace or a new foreign relations of any turning that idea into something value, ie be of benefit and saturation of the need of the individual or organization level. And it is applied in order to positive change for the organization.

2.2. Innovation As a Broad Concept Beyond the Concept of Technological Innovations

Usually when we think of innovation, we think the technology first. Think about new products and services, technological processes and computer systems, software and technologies have the ability in some cases to restructure production systems and way of doing business and make comprehensive changes to the business performance of the organizations way [5].

But innovation is about more than technological developments, shows that the broad definition of Broad Definition of innovations. Organization for Economic Cooperation and Development (OECD) defines Innovation as: "The innovations are integrated areas and the methods used to change adopted by the organization and applied to improve their performance and to achieve success in improving the outcome of the economic work, to include the concept of innovations wide range of much broader than the concept of innovation (technological innovations and innovations related to new products)". Consequently, there are several forms of innovation that could be a new idea or new product or service or administrative practice or new regulatory or a new process or a new marketing method or a new way to organize the workplace or a new foreign relations, and that the broad definition of innovation include all possible types of innovations.

2.3. Innovation Knowledge Management

The term refers to the management of innovation management processes in innovation. It can be used to develop both the product and organizational innovation. Without an adequate operations, can not be a research and development (R & D) required competence; therefore the management of innovation include a set of tools that allow the cooperation of managers and engineers in order to reach a common understanding of the goals and processes. The management of innovation focuses on allowing the organization to grasp any opportunity, whether external or internal, and utilize their creative efforts to provide ideas or new processes or products. Most importantly, the management of innovation is not limited to research and development; where the staff and workers include at all levels in order to participate creatively in the development of the company's products, manufactured and marketed. By utilizing the appropriate innovation management tools, management can motivate and dissemination of creative values of the entire work force for the continued development of the company [6].

Consideration could be given to the evolutionary process as an integrated enterprise, technology and market through a recurring series of activities: research and selection, implementation, and seize opportunities. Innovations processes may be either gradual or accelerated during development, and rely on the accelerated process technology exist or newly invented, so that the organization can access it, and trying to find profitable uses for the use of this technology. The gradual process tries to identify the aspects that are not meeting the needs of the customers, and then focus development efforts in order to find solutions to those needs. In order for any of the methods succeed, there is a need to understand all of the market and technical problems. By developing a multi-functional development teams, include both engineers and marketing experts, can be resolved dimensions.

3. Measuring Innovation Management

The innovation measure is related at the organizational level to individuals and evaluations on the team level and private companies from the smallest to the largest. It can be made to measure innovation institutions using questionnaires to put internal reference benchmarks [7]. There is now an emerging body of work on innovation management index as an effective analytical tool used regression analysis to be able to measure the institutional innovation, which focuses on four organizational pillars of innovation, a culture and environment, strategies and practices of innovation and personal characteristics, beliefs and attitudes to the creativity and innovation managers. In addition, management innovation index puts the flow of creative input plan through the

enterprise operating system, which produces innovations from the institution, any creative output.

3.1. Innovation Environment

The innovation environment include the regulatory environment for enterprise innovation environment (internal environment), and the cultural environment and the political environment, social and economic environment. The regulatory environment that embraces innovation and provide him appropriate conditions enjoyed mostly some characteristics that encourage creativity and promote, such as the adoption of the values and organizational principles develop innovative behavior and feeding, and encourage the acceptance of change rather than resist it, and experimenting with new ideas and the opportunity in front of her, and show a desire to provide potential success, and take the results of failure [8]. This environment tend towards decentralization and avoid the individual style of management develop method of participating in the views and discussed, and develop specific and diverse goals and support means achieved by using the skills in communication and information transfer, and the channels of communication open to internal and external environment receives all the way reactions, suggestions and ideas and evaluated according to their objectivity (Nutrition reverse). Thus this environment increases the confidence of the individuals themselves, and they develop the ability to question and accept the criticism which encourages imagination and creativity to tender and construction. Such an environment is characterized by mostly superiority and the ability to challenge the problems and obstacles and reduce the degree of severity. The environment is innovative resistance to change and to accept the challenges they are adopting organizational values kills the creative climate and demolish all views, ideas and suggestions and rejects criticism nor embrace change and seize opportunities for growth and development, and lie in traditional environments where authoritarian the management and the roles of individuals drawn and specific leading to low morale and lack of Self confidence.

The cultural environment shall have the greatest impact on the motivation of individuals and push them towards innovation and creativity, whether by means of education and programs studied allocated for the detection of individual and collective talent and promotion, or through the media of different bodies and organs to support the guidance, awareness and emphasis on creative incentives. And ensure a stable political environment and the support of the activity of innovation to encourage these energies at the level of individuals and organizations and make it one of the required targets in development plans through the establishment of research and study and development institutions and providing them with material and human needs of material and moral incentives necessary in accordance with the available resources. The availability of objective factors which guarantees freedom of speech and expression helps to blow up the energies and talents of individuals. The ability to innovate fade in situations characterized by authoritarianism and tyranny and oppression of souls [9]. As well as the social and economic environment, you must create the appropriate conditions for the breeding of the individual and the emergence of a conscious upbringing and development potential and their capabilities and encouraging and nurturing talent, and ensure a proper income and the easy life that eases the problems and concerns daily and the time it may miss! To provide the necessary living requirements, the individual who bears the daily suffering and live in material conditions uncomfortable can not be an individual creative innovative even if it has become available talent and potential, because the lack of psychological and physical comfort is liable to every desire kills with this individual's creativity and tender. Also, the society which respects the world and creative thinker and estimated its equivalent and it takes a positive step towards

building the country's progress of knowledge and civilization and prevents the migration of human capacities and competencies to find where respect and appreciation.

3.2. Financing Innovation

This finance innovation require positive innovation environment in any government or private institution was spending serious money to support innovation and provide physical and human peripherals, providing the establishment of facilities, equipment costs and the payment of wages and the dissemination of the results of new innovations and marketed on a commercial scale. And require the provision of these funds to find some kind of commitment from the state to adopt the innovation process and support them financially and encouraging, especially when the state is responsible for the economic activities in the community management in addition to other obligations. This fact must be understood by decision-makers in those countries do not donating to allocate the necessary funds to spend on research and innovation, not to hurry its results, not step back from its support after a short period of time [10].

For institutions SEZ in capitalist societies a key role in supporting research and innovation and development for recognizing its importance and vitality in those communities, where the control mechanism of action fast economic environment of change and renewal are exposed to competition intense competition and the struggle for survival, encourage research activity and innovation and spend it generously. In the Arab countries, the funding of research and innovation on the part of private enterprises is still limited and weak, and this is due to multiple reasons may represent one of the desire of these institutions in achieving rapid gain in a short time. Arab cooperation and ensure funding for some research and innovations on topics reflect the common concerns and aims of this research to the advancement of the Arab world in the agricultural, industrial, commercial and other field, and the manifestations of that establishment of the Arab organization for research. Foreign funding sources in some cases refere to support research activities that relate to content and application of the concerns and worries of our society and its problems [11].

3.3. The Importance of Innovation for Organizations

The Innovation is the key element for the survival and growth of the organization in light of changing circumstances. Also, the Innovation in essence is a positive change of the individual or organization. The innovation has an importance of the change is a vital requirement for many organizations, and in the light of events accelerated environment and many change highlights the need for the Organization for innovation to be able to provide what is new and to be able to continue and survive under these dynamic environments's need organizations to innovation is an urgent need innovation not only can not the organization to continue but they can also compete and deliver what is new and therefore growth and prosperity [12].

There is a consensus among scholars and thinkers on the importance of innovation for all types of organizations, whether private or government. So, the Innovation is the key to the future of any organization, and without it you can not organizations crossing into the future, whatever the current efficiency, Innovation is the most important area in promoting interaction relationship between the organization and its environment, and the innovations of different kinds working to find solutions to internal and external to the Organization of the problems, and enable Organization to keep abreast of new developments and challenges.

4. Different Kinds of Innovations

There are many studies that show the importance of the distinction between the types of innovations in order to identify the determinants of the innovation process within the organization as well as to identify the behavior of organizations in the adoption and application of innovations.

4.1. Product Innovations Related to Product Innovations: This means providing a new product or service or procedure developed or substantial improvement of the characteristics and product uses and that includes fundamental improvements to the technical specifications and components, raw materials and software as well as substantial improvements associated with the uses and functions of the product which all significant changes that affect the improvement of product performance.

4.2. Innovations Related to the Operations Process: It is innovations related to the development or application of a new method for the production of the product or submit it in a new way and means so that innovation in operations includes all operations to reduce costs and increase the quality and innovation of new ways to present the product to the consumer, and this includes the application of methods, equipment and software to produce and deliver product in new to the consumer.

4.3. Marketing Innovations: It is innovations associated with implementing a new marketing ways to relate to make changes in the design and filling and packaging and differentiate your product or service and innovations in ways that distribute products through brokers and agents, distributors or provide new methods for the pricing of the products or new ways to advertise, and personal selling and sales promotion which is any innovations outstanding marketing mix.

4.4. Organizational Innovations: This includes those innovations by applying new organizational methods of business practices to improve the methods of decision-making procedures and stages of work and new ways to improve learning and knowledge transfer or introduction of a new organizational form of the organizational structure, or to provide a new way for the reorganization of the workplace or provide a new way to deal with external parties such as customers and suppliers and competitors, and for the purpose of improving the performance and improve business results. This kind of innovation is what will be addressed in this article as it is some detail to demonstrate and clarify the nature of organizational innovations and how to adopt and apply within organizations on the grounds that the entrance to the strategic management as innovating management is one of the types of organizational innovations [13]. The Organizational innovation is a means of positive change for the organization through the process of adopting and implementing a new idea or a new practice or a new behavior or adoption of equipment or systems, policies or programs, processes, or new products or services or new regulatory ways in business practices, procedures and stages of work and new ways to improve learning and knowledge transfer or introduction of a new organizational form of the organizational structure, or to provide a new way for the reorganization of the workplace or provide a new way to deal with external parties such as customers and suppliers and competitors adopted the organization, whether its development internally or brought in from abroad to improve methods of decision-making and in order to improve efficiency, effectiveness and competitive advantage, including adding value to the organization and stakeholders.

5. Sources of Innovation

The authors refer the sources of innovation to a number of sources of innovation that provides the organization an opportunity for creativity and innovation that is new including those related to environmental (industry environment), including those related to the general environment, and as such is trying to highlight the role of the environment in providing opportunities for innovation and the ability of organization to take advantage of the opportunities provided by the environment or the public, which, some of which represent a challenge to the Organization paid to the diagnosis and then move towards innovation [14].

5.1. Sources of Innovation in their own Environment (Industry)

The author emphasize that industry market and the surrounding circumstances and the organization of events and face the opportunities and threats provides an opportunity for the organization to be creative and innovative, and suggests a number of sources of innovation in this regard:

- **Unexpected innovation resources:** This source represents a case of probability or is pre-calculated as much as the Organization finds itself facing a situation that requires innovation but they can not predict success or failure of what would be doing as well as she did not expect the external event which represents individual opportunity, you may find the same organization in front of an unpredictable state paid to the initiative in creating a new way of marketing its product but is not sure about the success or failure of what she did to change which makes the chances of success or failure has equal.
- **The Incongruity:** This source of innovation refers to the contradiction between the truths or reality and what should be. What any object between what is and what should be, and between this and that could create an opportunity for innovation [15].
- **Innovation on the basis of the need for the process itself:** This source focuses on the operation to be performed requires doing something that is missing and that the people they rotate about this missing link without having to do any thing towards them, the opportunity may seem to a person or company wishing to bid for this missing link, where you discover some companies this opportunity and find the missing link and display them on others. An example of the development of a type of enzyme that resists damage and was Alalumblyat Surgical Eye needed him most and which served as the missing link, although the enzyme was present but damage quickly, prompting the development of product components and overcome the problem of damage.

5.2. Sources of Innovation in the Operating Environment

It refers to changes and factors that relate to the general environment are considered sources of the organization paid to innovation, including: -

- **Demographic changes:** The changes in the magnitude of changes and the composition of the population organization encourages creative thinking, Changes in population age groups and level of education and income can create opportunities for innovation, where the change will happen in the needs and habits of the population's purchasing, making

what was a pillow of inappropriate products with as requested by residents changes have taken place they must respond to them.

- **Changes in cognition, patterns, circulating in the community and meanings:** The innovation opportunities that can be developed when the general assumptions of the community changed, attitudes, beliefs, and others can be a source sharpens mettle organization towards innovation. For example, the feeling about eating who converted from Pure Nutrition, simplicity and asked what is necessary and most convenient ways and cheapest turning to ready meals in some Western societies, especially where they are obtained from supermarkets and the use of cooking books, and these habits are becoming more common than ever before, in addition to the change in family size and the number of children and the associated redistribution of income for the family. These changes and other new patterns and shopping habits have driven innovation in ways to provide services and food products because of the individual ready begun to think more than ever before time [16].
- **New Knowledge:** it is referred to the advances in scientific knowledge and science created new products and new markets. The progress that gets in two different areas sometimes pays to integration towards the base of the formation of a new product. For example, the progress achieved in the field of computer and communications. As well as with regard to the case of establishments operating in the field of new software as it seeks to produce new programs a week sometimes. This situation created a need to achieve technological advances of computer equipment advantage.

6. Concluded Comments

Knowledge-based economy requires greater efforts in the areas of education and training also requires a new kind of education and training. The number of workers in the field of information is increasing steadily and this requires the formation of scientists and those working in this field and in the fields of information technology are too low and less than needed, Illiteracy informatics has become one of the phenomena that hamper progress. On the other hand, the rapid evolution of knowledge requires lifelong training, and scientific and technological level of employment requires higher than the previous and the need to acquire the Queen of education has become an urgent need for workers. And will go higher wages to the able-bodied workers to deal with the encoded technological information and knowledge more than a trend toward manual labor or physical effort on the other hand, access to knowledge has become easier and less expensive than the previous existence of knowledge networks, but this requires a knowledge of foreign languages, especially English also requires efforts in Arabization.

That there is a global demand for workforce competent in dealing with the knowledge and with the information and an increase in wages this hand, as we are witnessing the rapid development of knowledge, which calls for an increased demand for labor expert in technology and, finally, the structure of the companies and factories are changing for the automation and informatics. The change machines used to have rapid development capabilities to secure competition summoned by a worker able to learn continuously and increases in the unemployment rate among the working class manual hand.

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