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Knowledge Mapping, Intellectual Capital and Organizational Intelligence

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Abstract

Knowledge management initiatives rely on maps to locate internal knowledge, similar to how an explorer in the wilderness follows a map. Knowledge maps, like travel maps, are static. A knowledge map is a "snapshot in time" that helps businesses understand and organize knowledge assets. It's anything but an express model inside a business cycle of who has the information, where the information is found, and why it is significant. Perhaps the most well known strategies for recognizing information in associations is information planning. It can help chiefs to all the more likely comprehend the information stream inside the associations. Planning association's information, particularly in research organizations, has drawn in much consideration from senior administration lately. Utilizing information planning procedures; a huge and complex arrangement of information assets can be procured and explored all the more without any problem. Information planning has stood out for the ranking directors as an evaluation instrument lately and is required to gauge profound reasonable arrangement and permit specialists in associations to describe connections between ideas inside an area outwardly. Here the extremely basic issue is the manner by which to recognize and pick a fitting information planning procedure.

Keywords: Knowledge Mapping, Knowledge Management, Intellectual Capital, Organizational Intelligence

1. Introduction

We are living in an age of cognizance. From epistemic logic to cybernetics- knowledge, belief, memory, information, and perception have been in the core discourses of human endeavor. Sharing knowledge is power." If ever there were a field to which this applies, it is the knowledge management industry. And in today's highly-competitive, fast-paced business world, corporations, businesses and organizations in both the public and private sectors are constantly searching for new cutting-edge methods and techniques for creating, storing, capturing, managing, organizing, distributing, combining, and retrieving knowledge. But the task of accomplishing such functions is not as simple as it sounds.

1.1 Types of Knowledge:-

Tacit Knowledge: Tacit knowledge is knowledge embedded in human mind through experience and jobs Coined by Hungarian Medial Scientists Michael Polanyi, it includes institutions, values and beliefs that stem from years of experience.

Explicit Knowledge: In contrast explicit knowledge is knowledge codified and digitized in books, documents, reports white paper, spreadsheets, training courses and explicit knowledge can be retrieved and transmitted more easily than tacit knowledge. Because it is knowledge learned directly from experience, tacit knowledge is difficult to share across space and time.

Externalized Knowledge: One of the aspects of tacit knowledge is the cognitive dimension that comprises beliefs, ideals, values and mental models.[1]

As per different philosophers and thinkers Knowledge is one of the most important strategic resources of organizations due to which the management of Knowledge becomes vital for the Organization in respect of identification, generation, acquisition, diffusion and capturing the benefits of knowledge with the objectives (McLure Wasko and Faraj, 2000, Hult and Ketchen, 2006). Dalkir defined it as the strategic advantages of using the knowledge through the Knowledge Mapping (Dalkir, 2007)[2]. There have been many thoughts focusing on knowledge mapping in cluster basis not in generic processes of knowledge management (Eppler, 2001; Huijsen et al., 2004; Jafari et al., 2009; Wexler, 2001). Chan and Liebowitz defines that maps can be built in order to illustrate the knowledge sources, sinks, and constraints for the decision making purpose (Chan and Liebowitz, 2006, Grey, 1999). Mostafa Jafari et. al argues that different techniques for knowledge mapping must be sure of its success and effectiveness to the Organization to become as an integrated approach. Jafari et al also defines that some practicing for framework selection and in contrast Eppler et al. focuses on conceptual and practical methods for drawing knowledge maps (Jafari et al., 2009, Wexler, 2001)[3]. Eppler et al classified in five categories including Knowledge source, asset, structure, application and development maps (Eppler, 2001, Huijsen et al., 2004). Now the Knowledge Mapping defines the knowledge source mapping with organizational capacity to exhibit the available and possible knowledge repository to depict global architecture domain in inter connected approach in lieu to define the knowledge for the specific situation for business and purposefully for the related environment like education, medical, etc.

According to Anon, 2003 "A knowledge map is the intellectual infrastructure for knowledge management initiatives. The basis for it consists of multiple taxonomies for content repositories, dynamic categorization of people, their expertise, and the communities they belong to, and finally a set of taxonomies for the variety of tasks that are performed within and by the

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[1] "Knowledge Management in Libraries - Research India Publications."
https://www.ripublication.com/ijdlkm/ijdlkmv3n1_01.pdf. Accessed 21 Jun. 2019.
[2] "Knowledge Management in Theory and Practice - ResearchGate." 15 Jan. 2019,
https://www.researchgate.net/publication/227458339_Knowledge_Management_in_Theory_and_Practice. Accessed 24 Jun. 2019.
[3] "organizational knowledge mapping based on ... - Semantic Scholar."
https://pdfs.semanticscholar.org/7946/5c2bbc3a9eae8bbf60dda944db9ab68a3c51.pdf. Accessed 10 Jun. 2019.

company's communities. The taxonomies of content, people, and tasks then have to be mapped across the three components in order to provide a foundation for such knowledge management enterprise projects as knowledge retrieval for both document based knowledge and the tacit knowledge located within the minds of the company experts."

2. Definition of Knowledge Mapping:

Knowledge mapping is defined as the comprehensive and transparent process for analyzing knowledge areas in order to visualize them in a form such that the target oriented features are clearly highlighted (Speel & al, 1999). On the other hand the process of surveying, assessing and linking the information, knowledge, competencies and proficiencies held by individuals and groups within an organization can be termed as the Knowledge mapping (Hylton, KeKma-Training, 2002). Knowledge mapping is defined as the comprehensive and transparent process for analyzing knowledge areas in order to visualize them in a form such that the target oriented features are clearly highlighted (Speel & al, 1999). On the other hand the process of surveying, assessing and linking the information, knowledge, competencies and proficiencies held by individuals and groups within an organization can be termed as the Knowledge mapping (Hylton, KeKma-Training, 2002).

The purpose of knowledge mapping comparison can be summarized in two objects:

Academic purpose: for better understanding of the nature of techniques in order to do the classifications and improve knowledge mapping process;

Practical purpose: to select a technique or part of one or more techniques for specific application in an organization.

The idea of knowledge map and knowledge mapping in the knowledge management field can be analogous to the use of concept maps and concept mapping. According to Wright (1993) a knowledge map is an interactive, open system that defines, organizes and builds on the intuitive and structured and procedural knowledge used to explore and solve problems. It is an active technique for making contextual knowledge representable, explicit and transferable to others. In knowledge management terms, knowledge mapping relates to conceptual mapping in very direct way.

Knowledge mapping is certainly key issues of practical Knowledge Management. Map should characterize the source, the structure, flow and sinks of knowledge within an

organization. As such it plays a dynamic navigation aid to both explicit and tacit organizational knowledge.

2.1 Mapping techniques for the knowledge map context:

Simple Mapping Techniques	Complex Mapping Techniques
Mind mapping	Concept maps
Clustering Mapping	Cause mapping
Matrices or portfolio diagrams	Concentric circles
Fishbone Graphs	Metaphoric
Cartesian and polar coordinate	Process charts or flowcharts
Pyramids	Spider web graphs
Hierarchic trees	Decision trees
Geographic maps	3D-Environment

Table 1 below illustrates different mappings in relation to different categories and criteria relating to different facets and types of knowledge.

	Mind Mapping	**Concept Mapping**	**Argument Mapping**	**Cognitive mapping**	**Knowledge Assets Mapping**	**Social Network**	**Information Flow**
Gathering	surrounding	Object layering	Analytical	Analytical	Exercising	Observing	Survey
Evaluation	Skilled dictionary	Observing	Analytical	Analytical	------------	Inflow/ OutFlow	Interview
Objectives	Dynamic	Dynamic	Static	Static	Static	Dynamic	Dynamic
Approach	Project Based	Process Based	Process Based	Process Based	Project Based	Relationship based	Relationship based
Static/ Dynamic	Static	Static	Dynamic	Dynamic	Dynamic	Dynamic	Static
Tacit / Explicit	Explicit	Explicit/ Tacit	Explicit/ Tacit	Explicit/ Tacit	Explicit/ Tacit	Tacit	Tacit

Table 1

2.2 Different Techniques of Knowledge Mapping:

Professional services in order to enhance skills and capabilities in continuous evolving nature generate the opportunities to develop and deploy new knowledge can be regarded as experiments in specific circumstances which need to be supported by the knowledge mapping system in terms of databases, expert yellow pages, electronic communities of practice, searchable project repositories (Paola et al 2006). The yellow pages are structured collection of data to facilitate communication and knowledge sharing with different objectives of stakeholders with particular expertise and skills(Mikolajuk, 2005).[4] But Iske pointed out the weakness as problems in quality reviewing not integrated with business process ; maintenance process to the information in connection to context and using of information and the necessity of keeping in pro-active position by the providers with system up-to-date (Iske, 2005). These approach yellow pages analyses the skills and capabilities information by expertise location in a bottom-up visualization to construct of the knowledge within a professional services by clustering evolved capabilities through connections between different knowledge domains (Paola et al. 2006). It is helpful for the relative environment as because it deals with hands-on interaction of new and existing information repositories for co-production of new knowledge (Maister 1993). A situation rely on human capital and intellectual capital for the performance of specialized with routines and professional services to support assembly procedures, and knowledge management systems (Gann et al. 2000; Hansen et al. 1999; Lowendhal et al. 2001; Sarvary 1999; Suddaby et al. 2001)[5].

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[4] "Knowledge management in the public sector: stakeholder ...."
https://pdfs.semanticscholar.org/f76f/ffb0c10eb2bd2cee3ce540f4c338491bd2c0.pdf. Accessed 20 Jun. 2019.
[5] Criscuolo, P. "Using Expert Yellow Pages to Map Capabilities in Professional." 2008.
<http://www2.warwick.ac.uk/fac/soc/wbs/conf/olkc/archive/olkc1/papers/148_criscuola.pdf>
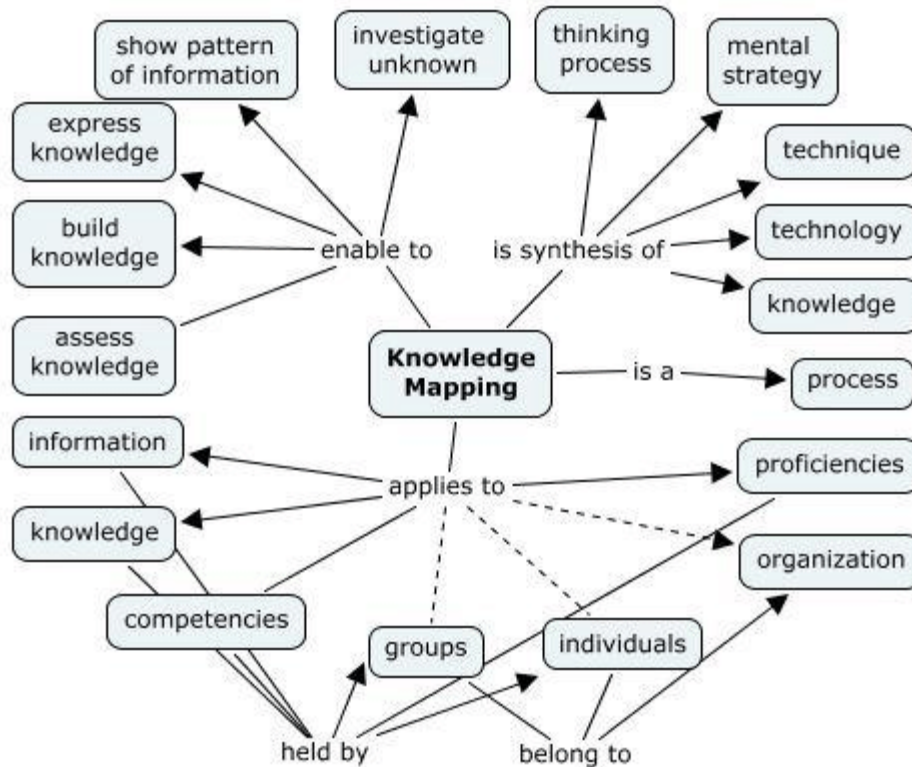
Figure 1

Figure 1 lays out the intricate web of relationships that knowledge mapping expands into.

3. Intellectual Capital

While past economies depended on use of land, natural resources, equipment and capital for the creation of value, our information economy will depend on application of knowledge. Knowledge is very important source for people, firms and countries. Managing knowledge and intellectual capital create new source of competitive advantage. The fortunes and values of firms can increase or decrease depending on how well they create, capture, and leverage their knowledge. Intellectual capital encompasses the models, strategies, unique approaches and mental methodologies organizations use to create, compete, understand, problem-solve and replicate

Intellectual capital is the intangible value of a business, covering its people (human capital), the value inherent in its relationships (Relational capital), and everything that is left when the employees go home (Structural capital), of which Intellectual property (IP) is but one component. There are various definitions of intellectual capital, although the term is generally used to describe intangible assets on a company level, referring roughly to the difference between adjusted equity and market value of a firm or organization. On the other hand,

intellectual capital is highly problematic to control due to its intangible character and it is complicated to establish exactly what intellectual capital is. Creating absolute models of indicators of intellectual capital is not really possible (Mouritsen et al, 2005).[6] In the most frequently cited model of intellectual capital, however, Edvinsson and Malone (1997) have divided it into two main sub-categories, human capital and structural capital.[7] Human capital refers to the employees of the company and their creativity, competence, social skills etc., but also to company values, culture and philosophy.

Intellectual capital and knowledge management have become major sources of corporate competitiveness in most industries. Intellectual capital refers to all types of organizationally relevant knowledge and its basic elements are human capital, structural capital and customer capital.[8] Knowledge management, on the other hand, refers to the process involving the creation, collection and application of knowledge for improving organizational performance. There are two types of activities involved in knowledge management. One focuses on information sharing and requires such technologies as interactive software. The other activity codifies knowledge by documenting and appropriating individual knowledge, and uses organizational databases of best practices, experts' directories, and insights. Trainers and performance improvement specialists should actively participate in knowledge management because they have an understanding of cognition, adult learning and team dynamics. Intellectual capital has also been defined as the difference between a firm's market value and the cost of replacing its assets. Components of intellectual capital consist of human capital, structural capital and external (customer) capital. If environment operators manage knowledge effectively, their organization will enhance their intellectual capital.

Intellectual capital has also been defined as the difference between a firm's market value and the cost of replacing its assets. Components of intellectual capital consist of human capital, structural capital and external (customer) capital. If environment operators manage knowledge effectively, their organization will enhance their intellectual capital. Hence the applicability of the yellow page can be sought as bellow:-

It is the tool for data gathering framework and evaluation as an analyzer to assess the knowledge (Vestal, 2005). Knowledge characteristics and capabilities are reflected in the Knowledge map with determining element. The word "capabilities" is used to refer to the different functions and solutions in the represented knowledge assets as specific features for the

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[6] Mouritsen, Jan, and Heine Thorsgaard Larsen. "The 2nd wave of knowledge management: The management control of knowledge resources through intellectual capital information." *Management accounting research* 16.3 (2005): 371-394.

[7] Edvinsson, Leif, and Michael S Malone. "Intellectual Capital: Realizing Your Company's True Value by Finding Its Hidden Brainpower." (1997).

[8] "Intellectual Capital: A Human Resources Perspective Enterprise " (2010). 15 Jul. 2016 <http://www.eiminstitute.org/current-magazine/volumn-4-issue-5-october-2010/intellectual-capital-a-human-resources-perspective>

representation of a network (Lecocq, 2006). It is an approach of process based, relationship based mapping (Jafari, 2009). Knowledge characteristics and capabilities are reflected in the Knowledge map with determining element. The word "capabilities" is used to refer to the different functions and solutions in the represented knowledge assets as specific features for the representation of a network (Lecocq, 2006)[9]. It is an approach of process based, relationship based mapping (Jafari, 2009).

3.1 Organization Intelligence

Organizational intelligence is the collective assemblance of all intelligence that contributes towards building shared vision, renewal process and direction for entity. Specifically organizational intelligence involves the following knowledge functions:

1. Transformation information into knowledge,
2. Identify and verify knowledge,
3. Capture and secure knowledge,
4. Organise knowledge,
5. Retrieve and apply knowledge,
6. Combined knowledge,
7. Create knowledge,
8. Distribute/sell knowledge

Transforming information into knowledge involves the synthesis and conversion of useful data and information into knowledge. For example, rules of thumb acquired over years of experience and learning may result in knowledgeable shortcuts to decision making process. Other types of knowledge (i.e. procedural, declarative, episodic, metaknowledge) need to be identified in the organization and verifies as relevant knowledge. Once knowledge is identified, it should be captured or acquired and secured within the organization. Once captured and secured, it must be organized in a way in which others in the organization can retrieve this knowledge and apply it to their situations. They will also combine this knowledge with knowledge of their own within the context of their situation. This will, hopefully, result in a synergistic way of creating new knowledge for the organization. This knowledge would then be distributed within the organization or to stakeholders and possibly sold. New knowledge would, hopefully, be learned, captured, and secured within the organization, and then the cycle would continue. Organizational intelligence would be built, adapted and refined from this cyclical process.

4. Conclusion

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[9] "A Framework For The Selection Of Knowledge Mapping Techniques." http://www.tlainc.com/articl180.htm. Accessed 21 Jun. 2019.

To bridge the gaps that prevent the facilities management organization in exploiting knowledge mapping benefits, related training and workshop on guidelines of harnessing knowledge mapping and exploiting the benefits is necessarily important. The progressions in innovation like IT programming and equipment and building and its substance, procedures for assessing offices execution as couple of models, forced the test to the offices the executives practice in outfitting information planning and tap profits by it. From the other point, information planning is a powerful interaction and requires a sound and strong systems to misuse its advantages. Some information might be supplanted over the long run with unrivaled as well as cutting edge information, and some information become insignificant. The full abuse of information planning strategies is additionally relies upon a more extensive scope of variables and the primary reason for their utilization. Exploration in this space can possibly add to an improved comprehension of how to keep on abusing information planning in assessing offices execution and offices the executive's field by and large. The quick development of information economy over the most recent twenty years has changed administration styles. Association's information technique ought to be driven from business procedure to guarantee improvement of information culture. Such a culture guarantees information exercises, to be specific procuring, sharing, making, changing and its use. The information climate will support and advance creative cycles. The criticism from outer climate and experience from past activities will help in innovative work. The blend of new and realized information will help devise available resources of change for successful and effective execution. Information is seen as a mix of encounters, bits of knowledge, skill, instinct and judgment that exist in the brain of the knower (Cheruiyot, Jagongo and Owino 2012); understanding acquired through experience or study empowering a person to play out a particular undertaking (Awad and Ghaziri 2007); liquid blend of outlined insight, values, context oriented data, and master knowledge that gives a structure to assessing and fusing new encounters and data (Davenport and Prusak 1998); and abstract and important data that has been approved and that has been coordinated into a psychological model used to figure out the world and which regularly starts from gathered insight and joins discernments, convictions and qualities. The utility of planning of express information can likewise be investigated by some prior laborers who have shown that through investigation of records of perusing of archives, getting of perused reports by clients and records of references given by these peruses in their future distributions can be used by a library in their determination cycle of future archives to expand the level of clients' fulfillment. The above cycle whenever connected with the records distributed by the organization as distributed papers, patent documented and so on can give a genuine guide of information on the specific establishment. This is the place where the actual idea of 'knowledge mapping' could be investigated in the field of library and information science also.

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