Research Trends in Knowledge Management: Past, Present and Future

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ABSTRACT

The concept, Knowledge Management (KM) visualizes the accessibility of the knowledge created by an organization by those who need it. It deals with both the Explicit (i.e. Documented) and Implicit (i.e. engrained in human minds as skills, thoughts, ethics etc) types of knowledge. KM though finds its usability and applicability in all types of organizations, but as witnessed from the literature, it is mostly found operational in business organizations. An overview of the literature available on Knowledge Management (KM) and Knowledge Management System (KMS) clearly shows certain research and development trends, the study of which is the primary focus of the present paper, that precisely appertains to the conceptual development of KM, KMS, KM Models, KM Tools, and KMS in Profit making and Non-profit making organizations.

CCS Concepts

Information systems →Data management systems

Keywords

Knowledge Management; Knowledge Management System; Information Technology; KM Models; KM Tools

1. KNOWLEDGE MANAGEMENT (KM): AN OVERVIEW

Knowledge Management is the process through which an organizational knowledge can be made available for those who need it. KM promotes different knowledge processes (knowledge identifying, its tabbing, organization, retrieval, and use). It also provides a collaborative knowledge sharing platform with the objectives to enhance learning and performance in the organization [1].

Knowledge is something gained through experiences and expertise of staff of the organization. Some such experiences are embodied in document form (explicit), whereas some part of it remains embedded in the minds of staff/experts (tacit).

1.1 Explicit Knowledge

The online version of Cambridge Dictionary has defined explicit knowledge as "knowledge that can be expressed in words, numbers, and symbols and stored in books, computers, etc. and the knowledge that can be articulated and easily communicated between individuals and organizations."[1]

1.2 Tacit Knowledge

The Tacit knowledge simply is that part of knowledge which is deeply engrained in human minds as, skills, thoughts, ethics, and feelings [2]. Its concept is traced back to philosopher Michael Polanyi's theory of knowledge in mid-1990's. It says that the knowing more than we can communicate is implied knowledge or doing anything without thinking of it, the best example can be of a driver, who while driving keeps changing the gear of a vehicle without thinking about it [3].

2. CURRENT TRENDS OF RESEARCH IN KNOWLEDGE MANAGEMENT

An analysis of the literature pertaining to KM helps us to identify the following trends of Research:

2.1 Research pertaining to the conceptual development of KM

KM is the hot topic amongst both profit making and non-profit making organizations. Call (2005) puts emphasis on broader understandings of KM and how to successfully implement it in any organization. From their research; Efficiency, Adaptability, and Flexibility are noted as the three characteristics of a successful organization [4].

As Knowledge Management is an innovative concept, Saulais and Ermine (2012) seek to elucidate the link between KM and innovation, which furthermore links intellectual corpus and creativity [5]. KM in one way or the other may usefully be incorporated in the midst of organizational creativity and innovation [6]. Due to Knowledge Management, organizations are alive with their best available knowledge which helps to improve the organizational performance. In the same vein, Mills and Smith (2011) conducted the study in which the 500 questionnaires were distributed to make a connection among the performance of an organization and the Knowledge Management resources, out of which only 189 from the management department were considered useful. Structural modeling equation was used to know the correlation between certain resources of Knowledge Management and organizational performance. Few knowledge resources e.g. organizational structures, knowledge applications were found clearly associated with organizational performance [7].

Knowledge Management in the organization is able to achieve its objectives only when the system is administered by a

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[1]Explicit Knowledge. (2017). In *Cambridge dictionary* (online). Retrieved October 11, 2018, from http://dictionary.cambridge.org/dictionary/english/explicit-knowledge

Knowledgeable Manager, who plays the main role in a team to achieve the organizational goals [8]. In fact, they are engaged in various Knowledge processes which lead to greater effectiveness, both for organizational and outfitted processes. These processes engross some sort of alliance to get the best out of existing knowledge [9]. Managers must have leadership qualities; because leadership plays an important role in KM practices. The above statement was concretized by the study performed by Singh (2008) who investigated the link and impact of the way of management on KM practices in a software organization. The study involved the collection of data by using two psychometric instruments i.e. Organizational Leadership Questionnaire (OLQ), and Knowledge Management Assessment Tool (KMAT). Knowledgeable workers (331) having at least one year experience were chosen. An analysis of the data revealed that directive and compassionate way of management, extensively and pessimistically bond with the capability of Knowledge Management practice, whereas conferring and delegating ways of leadership have the positive and considerable link to Managing Knowledge. Furthermore, only delegating mode of leadership behavior in the software firms of India, is important for foreseeing conception in addition to the organization of intellectual assets for the viable benefit [10].

Many researches' have been conducted across the globe to study KM and its practices in commercial, and Government sectors in the present time. In the same context, Baquero and Schulte (2007) explored the state of KM practices in the above-mentioned sectors of Columbia. 50 organizations cooperated by sharing the quantitative data, collected through a survey of their search field. Besides some organizations having less support of KM practices, there are a few others that endow with exemplars in KM. However, the fact remains that KM is not only responsible to manage the intellectual assets but also has direct linkage with the security as well [11]. Randeree (2006) conducted the study examining the connotations of Knowledge Management for security. Of the various studies it was revealed that less focus has been given on security, in both research settings and in practical applications of KM framework [12].

2.2 Research pertaining to the development of KMS

KMS is an amalgamation of content, experience, and process management. The content may be of academia or of "outside community" or from any "digital library," The experience management is a part of KMS in which members of organization as knowledge workers must share their organizational knowledge to participate in the process of KM. While as, sources acquired from its networking result in accessing knowledge foundation so as to be a cycle and a reference for users in the process management [13].

Kumar and Gupta (2012) discussed KMSs with their role in global organizations that include the core concepts like knowledge creation and sharing. The given case examples explained the process of knowledge creation and also laid the special emphasis on tabbing tacit knowledge by highlighting different Methods and techniques applied for the same, e.g. the organized discussion with the peers which in turn creates the environment for working together (tutor-pupil), the process of learning through conversations, or by sharing the experiences (storytelling), etc. [14]. Alavi and Leidner (1999) studied Knowledge Management System, along with the issues, challenges, and benefits involved with it. The analysis of current practices and outcomes of KMS were provided. It was found that interests in KMS are very high across a variety of industries. The concern revolves around achieving the accurate knowledge and garner support to KMS [15].

A Knowledge Management System can be successful only when used effectively to meet knowledge goals of an organization. He, Qiao and Wei (2009) explored the use of KMS, putting emphasis on social relations and on its importance in the use of KMS by the employees in a Chinese company. [16]. Poston and Speier (2005) conducted similar study to examine the effect of content ratings and credibility indicators on KMS users. It was revealed that ratings have a strong influence on KMS search and evaluation processes thus affecting decision performance [17].

In the Developed world maximum efforts are being made to develop practical systems for managing their knowledge. Some have put forward the blueprint of the system and few have developed the practical KMSs. Similarly Khalifa, Yu, and Shen (2008) developed a model to study impact of KMS on organizational performance. The same was tested upon 100 core organizations with the core aim to make the model more effective and usable. Structural equation modeling was used for data analysis. Results revealed that KMS pays direct as well as indirect effects on performance of organizations [18].

Besides the use of KMS in business or academic organizations, it can also be used to tackle the problems raised during the emergency situations. For example during the hurricane Katrina, federal agencies developed two Knowledge Management Systems. Because of the KM tools and concepts incorporated into these systems, data was shared and the interaction through board resulted in much better services at the time of crisis [19]. In addition to this, Hassan, Hayiyusuh and Nouri (2011) conducted the study regarding the "implementation of KMS for support of humanitarian assistance/disaster relief in Malaysia." , which made people aware of what's going on around them by providing situation awareness and decision makers with current information to react immediately to reduce damage. The tripartite paper dealt with: (p.i) disasters occurred in Malaysia (p. ii) discussion on KM and KMS, (p. iii) model and framework from the previous study. Discussion on KM and KMS revealed that a common platform must be available for all Knowledge processes including knowledge discovery, capturation, and its networking in Malaysia. KM framework was adapted to support HA/DR in Malaysia, by centralized knowledge base through which the KMS model was able to update, share and acquire information needed for pre-crisis, during crisis and post-crisis to explore the organizations involved in HA/DR. It was also found that the success of KMS for the use of HA/DR depends on the willingness of organizations to share knowledge [20]. Furthermore, on the current basis of "Scientech documentation and information center/Chinese Academy of agricultural sciences," a schema was presented on the analysis and design of KMS of SDIC/CAAS to augment the competitive ability and organizational performance on a cost-effective basis [21].

Edwards, Shaw and Collier (2005) discussed the role of technology in associations by inviting 78 people as sample associated with 10 different organizations for workshops, with the main aim to be conscious about the present status of Knowledge Management in these organizations. Only 3 organizations have adopted technology-based explanation pro-KM problems, in the same organization's general information technology tools were used rather than specific KM tools [22]. Apart from this, Lin and Tseng (2005) studied another aspect called KM gaps. The study proposed a framework to demonstrate the management gaps. Findings from the study highlighted many reasons for KM gaps,

which may be avoided by the proposed fundamental approaches and corrective actions to enhance the success of the implementation of Knowledge Management Systems [23].

A survey on Knowledge Management System and its relevance in the field of Social Sciences, was conducted at the School of Social Sciences, University of Kashmir in order to record the consciousness and the use of KMS by the different category of respondents i.e. faculty members and research scholars of the said School. Results congregated through questionnaire, revealed that 60% of respondents are aware about KMS and remaining 40% are not. Among 60% of aware users 45% have used KMS, while as 55% have not used any. Yet 86.2% of respondents strongly agreed that KMS is useful for the researchers and other information seekers working under different domains of Social Sciences, while as 13.8% not agreed so strongly. Further, 91% of users strongly agreed upon the fact that KMS in Social Sciences must be developed to benefit the people working under its different branches, whereas, remaining 9% agreed on the same [24].

2.3 Research pertaining to the development of KM Models

To heighten organizational performance through KM different models have been developed on various aspects of KM. Handzic (2011) proposed conceptual integrated socio-technical Knowledge Management Model with three interrelated concepts. The survey-based study examined the validity of the projected model, tested by 185 senior civil servants. It was brought into being that in advancing the knowledge within the public administration organization; social factors play a greater role than the technical ones. At the same time, leadership quality was also pointed as an essential enabler of organizational KM [25]. In addition, a "three-layer reference model" for KMS was developed in order to identify the processes used for support by any Knowledge Management support system, which were further made to be used for modeling the dynamics, and also for developing a framework, and for the development of blueprints for ICT based KMSs"[26].

Beveren, (2010) presented a model of knowledge acquisition, which avows that knowledge can only be created within the brain after its proper processing with prior knowledge. It was revealed that the center of attention of KM should be on human resource strategies and also for networking of essential information which promote inventiveness and advancement among workers of an organization [27]. Similarly, the Practical approach to Knowledge Management that has been proved useful to many organizations in achieving their goals was created on the basis of eight building blocks namely knowledge goals, knowledge measurement, knowledge identification, knowledge use, knowledge acquisition, knowledge preservation, knowledge development, and knowledge distribution [28].

It is necessary for every organization or firm to evaluate the model before its implementation. Similarly, Haslinda and Sarinah (2009) critically evaluated the different KM models and found that few KM models vary from the basic assumptions just before the more complex and complicated assumptions [29]. Cristea and Capatina (2009) also did a similar type of study, highlighting some widely used KM models. They also described the most important characteristics of each model with its usefulness in the economic environment [30].

2.4 Research pertaining to the development of KM Tools

In the present knowledge ridden era, various tools have been developed to make the work processes easier than before. Al-Aama (2013), on the basis of a study carried out at "Jeddah municipality in Saudi Arabia developed a Knowledge Management taxonomy." The classification lists the tools used to enhance KM processes and more specifically specify the tools for their respective process. The developed taxonomy can be used to choose the exact tools that cover all KM processes i.e. "Knowledge creation, knowledge maintenance, knowledge distribution, and knowledge revision" [31]. Bhatt, Gupta and Kitchens (2005) explored the relationship between the use of one of the Knowledge Management tools (groupware) and KM processes. Data gathered from the managers of 1000 firm divisions at Fortune through telephonic survey reported that these tools were significantly related to the majority of KM processes. On the other hand, it was also found that it is only the email, which plays a vital role in knowledge distribution [32].

With the rising interest in different strategies for managing knowledge, the intranet is considered as information as well as a strategic management tool [33]. Many other cost-effective tools can also be used for managing organizational knowledge. Social media is also numbered in these tools, which are used for enhancing the work process. Forcier, Rathi and Given (2013) conducted a survey of "two public libraries in Canada" to look into their understanding of the concept of KM and how they make use of social tools in Knowledge Management. Findings revealed that social media can be considered as many useful tools for the purpose of promotion and also for enhancing collaborative work within the organizations [34]. In the same context, Chua and Banerjee (2013) also made a study of Starbucks; an international coffeehouse chain. The study was focused to analyze utilization of social media to prop up consumer Knowledge Management. Data gathered from different sources (such as newspapers, newswires, magazines, scholarly publications, books, etc.) revealed three most important findings. Firstly, the wide ranges of social media tools were deployed by Starbucks for CKM. Secondly, the transformation of passive customers to active ones was witnessed through the use of this tool. Also, using effective strategies to improve customer's disinclination for voluntary knowledge sharing is thus encouraging its use [35].

Razmerita, Kirchner and Sudzina (2009) made a new model of KM for managing personal knowledge by using web 2.0 tools which not only facilitates dynamic responsiveness but also acts as a medium or a platform that allows or gives privilege to an individual for managing all their knowledge processes [36]. In a yet another study, Ray (2014) examined the barriers to KM and also explained how social media will overcome those barriers. National culture and social media were conceptually linked to overcome KM barriers [37]. In addition to this, Grace (2009) put light on the usefulness of wikis with their role in the process of management and sharing of knowledge. This paper reported the results from analysis of review and of case studies for execution of wikis in organizations, and proposes a concrete blueprint for adopting wikis. The reasons behind the use of wikis were made known and also the paper highlighted security control issues and technical issues encountered [38].

With regard to selection of appropriate tool, most of the organizations choose Wikis as a tool for Knowledge Management System. But before implementing the wikis, one should be aware

of its loopholes as well. In the same context, Kiniti and Standing (2013) conducted the study, aimed to highlight and investigate the main problems having the influence of accomplishment wikis as a KMS. From the previous studies conducted on the use of wikis as Knowledge Management System in organizations, six main problems came to be known like "lack of a clear purpose for the wiki, wiki usability, integrating wikis into established work practices, social issues, role of management and organizational culture that supports knowledge sharing and collaboration". Some cases were also witnessed where wikis as a KMS has failed to meet the optimum goals of the organization [39].

KM supported by the technologies has a great role to play in the present era to fulfill the knowledge needs of any organization. Lindvall, Rus and Sinha (2003) addressed a technological aspect of the KM. In the study the available software systems that support different KM activities were precisely surveyed, and based on the potential; the tools that were categorized into classes, responsibilities, and operations for knowledge processing were also highlighted [40]. Another study carried out in Iran was aimed at evaluating 20 government websites of the public domain to know the KM mechanism. "Knowledge access, creation, and transfer" (K-ACT) model were used, alongside an application checklist to make known the utility. It was found that these websites are very poor in terms of functionalities and use [41].

The success of KMS depends on the manager responsible for the whole KM work process. Organizations, which are aided by these tools of information, can utilize management of all resources more efficiently. Total Quality Management (TQM) is such a tool which focuses on quality and in turn benefits the organizational performance. Johannsen (2000) while studying TQM from a KM perspective examined TQM based management tools that from the KM point of view encompass colossal outcome on the performance of any association, particularly in view of knowledge creation, accumulation and sharing the process [42].

2.5 Research pertaining to the development of KMS in Non Profit making Organizations

As the concept of KM has basically developed and applied in business organizations but keeping in view the importance of KM in nonprofit making organizations, the various researches conducted on different aspects under different domains of social importance e.g. Libraries, Education, Healthcare, Law firms, and Police are explored hereunder:

2.5.1 Knowledge Management and Libraries

Non-profit organizations like libraries may create an environment that promotes knowledge sharing. Teng and Hawamdeh (2002) tried to find how KM can be effectively applied to National Library Board (NLB) Singapore to augment learning capacity etc. and promoting a sociable society with a mission to deliver a world-class library system [43]. Various studies have been made and are being conducted on Knowledge Management and libraries, different approaches are used to cover every aspect associated with it. Libraries as Knowledge Management centers directly or indirectly have its impact on the organization it serves. In the same viewpoint, Parker, Nitse and Flowers (2005) put emphasis on libraries, to be active as Knowledge Management centers highlighting some of the components. As we are aware that libraries whether public, academic, special or any other, act as an imperative part of its parent organization, thus needing to manage both the external as well as internal knowledge either by creating institutional repositories or developing Knowledge Management Systems [44]. Yi (2008) discovered the same from the study in which the respondents both directors and students were from the eastern part of USA. Although the lesser number of students agreed with this statement than directors, on the same hand maximum of them believe that KM must be implied in libraries for developing the system [45].

In context to academic libraries, librarians must ensure the quality of services, and the likelihood of adopting KM for service innovations in their libraries [46].When one talks about academic excellence, one thing that strikes the mind is the role of library pertaining to that institution. Academic excellence is directly related to the library, so the library must meet the pace of the dawn of technologies and must incorporate special tools and processes which support informational professionals [47]. The academic institute also includes special institutes, developed to serve the special audience. In these institutions the knowledge generated within organization or outside is of much use, keeping its importance into consideration, Gul (2017) developed "A Conceptual Knowledge Management System Model for Special Libraries." For his research paper, the author conducted case studies of different special libraries, interviews, and also an extensive survey of both offline and online literature. It was revealed that the special libraries under purview ("namely Tulsi Das Library, Postgraduate Institute of Medical Education and Research (P.G.I.M.E.R) Chandigarh, Indian Institute of Advanced Studies, Shimla, Satyanand Stokes Library of Y.S. Parmar University of Horticulture and Forestry, Solan") have not established KMS till date. So the final findings of the study came up with a conceptual KMS model for special libraries of which the concepts and relations developed describe the implementation of KMS in special libraries [48]. In all types of resource centers, an intranet is regarded as both information and strategic management tool and is utilized as valuable means for KM. Mphidi and Snyman (2004) in their study investigated the utilization of intranet by the academic resource centers, it was found that these centers take less advantage of the intranet and there is much room for improvement in regards to tools and processes within all of these libraries [49].

On the other hand, Jain (2007) investigated Knowledge Management practices in the selected academic libraries of East and South African countries; it was made clear that most of the libraries are practicing information management and majority of 65% participants considered themselves as Information managers. As far as knowledge repository is concerned only 35% of participants indicate that they had a central knowledge repository in their organization [50]. Akin to this, Sarrafzadeh, Martin and Hazeri (2006) conducted the study with main motive of knowing the perspectives of LIS professionals on KM and examine the "benefits, opportunities, and threats" of Knowledge Management on the line of work. The outcome of the study revealed that there is much awareness among LIS professionals about the KM, and have the conscience of its positive implications for oneself and for the profession as well [51]. Sarrafzadeh, Martin and Hazeri (2010) also found in LIS fraternity possessing a positive attitude for introducing Knowledge Management in libraries to bring them closer to their parent organization and for their survival in an increasingly challenging environment [52]. As far as KM in libraries is concerned, the professionals working in the libraries are usually from the LIS field so that they must be conscious of KM from the root level. Roknuzzaman and Umemoto (2009) made it known that library practitioners have different perceptions regarding the ways of knowing and understanding the concept. To make the basics clear with a concrete base, the integration of KM in LIS curriculum is a must [53]. Hazeri, Martin and Sarrafzadeh

(2007) from their web-based survey and in-depth interviews with LIS professionals from LIS schools, tried to put some light on the subject by interviewing a group of professionals in this field and gaining their perspectives and opinions of the subject matter. Their study revealed a considerable interest within LIS community in expanding the LIS curricula by integration of Knowledge Management in it [54].

2.5.2 Knowledge Management and Education

Most of the organizations understand the importance of knowledge hence, taking initiatives to manage it by using various tools and techniques. As we know that KM concept arises from the corporate sector, and is mostly used in business organizations. However, it is fortunate that the world of academics has also realized the significance of managing their knowledge assets and with the passing time, various studies have been conducted on many aspects of KM. Arntzen, Worasinchai and Ribière(2009) conducted a study in order to know how KM processes could contribute to improving educational performance. The study stated the main aim of setting up of KM initiatives in Bangkok University. Findings from the study explored that the benefits to the university from KM were encouraging and also there was an improvement in the educational community through creating such kind of an environment which supports cross-organizational learning and knowledge sharing processes [55]. In addition to this, Tian, Nakamori and Wierzbicki (2009)studied one of a component of KM processes e.g. knowledge creation in order to know the benefits of why KM should be used to enhance knowledge creation in academia. To attain research rationale, a survey at Japan Advanced Institute of Science and Technology (JAIST) was carried out in two phases. The first phase research was about KM and academia just to highlight current situations, and also requirements of researchers. In the other phase, the focus was on how KM supports creative processes of intellectual output. From the result of the first phase survey, some barriers were identified with regards to the technology and the people associated with knowledge creations etc. In phase II in accordance with academic knowledge creation process critical as well as important questions were evaluated by respondents in the study [56].Tikhomirova, Gritsenko and Pechenkin (2008) also described several KM initiatives which had been taken at "Moscow state University of Economics, Statistics, and Informatics (MESI)". Findings reported from the interview, revealed that Quality management and an e-learning system have been successfully established by MESI and are also on a verge of implementing "Total Quality Management" [57].

Induction of ICT has addressed a major change in the academic world. Shoham and Perry(2009) conducted a study of Universities of Israel to investigate the realization and management of technological changes including;"introduction of online instruction, e-learning and enterprise Resource Planning technology" during last seven years. From the study, a valid mechanism was found at these universities. On the basis of the existing mechanism, a model was proposed that can be used to manage these changes in universities [58]. Academic institutions are taking initiatives to enhance the work process of their institution by implementing such systems. Mansourvar (2010) also tried to discover the university needs to the web portal as a tool for students to fulfill their educational needs. A survey was conducted to gather their requirements which further can be incorporated into the portal to be developed [59].

Blackman and Kennedy (2009) described the relationship between governance and KM in an Australian university. In a case study, interview and observation were used as a tool for data collection from the key governance committees. From the findings of the study, it was illustrated that strategic success and effective governance shows dependency upon opposite Knowledge Management activities. In an example of the case study, the committee members were found more stuck on processes that even not efficiently allow the knowledge creation and transfer [60].

As technology emerges, it becomes easy for the organizations to manage their knowledge. Web-based Knowledge Management Systems are among the preferable tools that are used to create, share, use, and reuse the existing knowledge. Rah, Gul and Wani (2010) proposed a web-based KMS for university libraries and also illustrated the requirements for university libraries. WBKMS were surveyed from which the framework of the model was developed keeping all the aspects of present model under consideration. Most of institutions/organizations are conducting research on the management systems and many of them have developed the model or prototype or portals for making it easy to access and share the knowledge for the betterment of their organizations [61]. Rohendi (2012) also conducted the study in the Indonesian University of Education with the prime aim of developing a blueprint of a management system for them. The steps taken showed the way to the development of a product which itself was a KMS. Several phases of Knowledge Management life cycle as "knowledge creation, capturing, organizing, refining and knowledge transfers" were explored and discussed. KMS was developed by considering content management, experience management, and process management using a "(waterfall) approach method supported by Microsoft SharePoint software" with web-based system development, user authentication, upload facility, searching facility etc. The preliminary stage of the execution of the system was knowledge capturation that was obtained from various sources. After the completion of system implementation, it was suggested that the policy ought to be designed by the university through which scholastic society must be rewarded for sharing the knowledge, igniting their hope, willingness to share the knowledge [62].

2.5.3 Knowledge Management and Healthcare

The emergence of KM makes it easy to manage internal as well as external knowledge, hence achieving optimal goal of the organization. Both private and government organizations are using different techniques and tools to manage knowledge for obtaining better results. Besides all the other sectors, health is one sector which relies heavily on knowledge. Although it is challenging to implement KM into health care, it is necessary for healthcare providers to implement this information to multiple factions and branches of the healthcare community, thus enhancing wellness and medical care to their patients in all sectors of health care. KM provides multiple advantages which are worthwhile to organizations that use KM tools for management [63].KMS is the best among all to improve the firm's competitiveness and also to keep costs to a minimum. Hung, Huang, Lin and Tsai (2005) conducted the study, in which affiliates of the "Taiwan Pharmaceutical marketing and management association" were used as study sample. From the research, 32 variables were delineated in the process of completion of Knowledge Management System. After proper investigation 7 issues are determined to exist critical: "a benchmarking strategy and knowledge structure; organizational culture; informational technology; employee involvement and training; the leadership and the commitment of senior

management; a learning environment and resource control; and evaluation of professional training and teamwork" [64]. Husain and Gul (2017) did a case study of All India Institute of Medical Sciences (AIIMS) and its online portal with the aim to develop a KMS in health sciences fulfilling the requirements of both doctors as well as patients. The study took the form of an interview, and both offline and online extensive literature survey, and observation. The final findings of the study came out with KMS that takes care of both doctors' knowledge need and also patient's health care [65].

2.5.4 Knowledge Management and Law firms

In the Law profession, experiences of the Legal experts are more valuable than the knowledge printed in books or in any other explicit form. KM is becoming imperative and necessary to law firms as to their success in this challenging environment. The profession of law is among those prominent fields were KM plays a fundamental role in capturing, storing, manipulating and making appropriate knowledge available for a proper person at the correct time. Lawyers, who were often adversely compared to "white collar" workers, e.g. medical practitioners and tax accountants due to their lack of terminology and information, now have access to the technology of KM to enhance their knowledge and nomenclature to excel in their profession. Gottschalk (1999) puts emphasis on the lessons learned from Norwegian law firms and also examined KM in these firms. Two approaches were proposed which includes initial field study and survey of Norwegian law firms, but only the initial field study was conducted wherein semi-structured interview was carried out, in which both organizational and individual questions were asked to 14 employees of Thommessen Krefting Greve Lund (TKGL), eight attorney and six staff persons. The questionnaire was also filled by the each respondent during the interview. Furthermore, the base of the study was made actual by conducting a comparative study of TKGL and Schjodt where Schjodt scores were lesser than TKGL. During the study, different posts were identified by both the firms as Knowledge Manager and IT coordinator. In future studies, the second phase of the venture has to look for the advantaged of law firms, the value of indefinable resources and the use of information technology to support KM [66].

From a technological perspective, in so far the law firms are concerned KM is aimed at providing staff with the best possible tools at least cost to support their routine work and fulfilling their needs. There are different stages of KMT in law firms associated with lawyers; four of them are "Lawyer to technology, lawyer to lawyer, lawyer to information, and lawyer to application."They also presented a stage model i.e. the period of development of KMT within law firms, from exploratory empirical investigation of Norway. Findings from the research stated that the majority of the law firms are at 3rdphase i.e. Lawyer to information. In addition to this other survey, the study was conducted regarding determinants of KM technology projects in Australian firms [67].

As we are aware that KM is a continuum of different tools and techniques. Information technology plays a main role in the success of KM in an organization. IT support for KM is of 4 kinds. "The first category is concerned with end-user tools that are made available to knowledge workers, the second category is information about who knows what, the third is information from knowledge workers, and the last category is information systems solving knowledge problems."The outcome revealed is from a pragmatic study of law firms of America. Among all the premeditated firms, in most of the firms, the current project was concerned with the "end user tools", while as only a few were implementing systems for solving knowledge problems. From the discriminate analysis of all firms, it was indicated that the number of lawyers and Information technology professionals were important determinants of the category, of KM technology projects. There is a good implication of KM and KMS in different types of organization in general and in law firms in particular [68].

It is quite difficult to manage all knowledge assets of a firm. Various studies have been done and some are in process. Plessis (2011) in a similar way provided insight of KM in law firm and the impact of legal services provided to the clients. It was made known by the study which was carried out in two steps. Firstly, the findings of literature were presented in the course of which the role of information KM in altering legal environment was explored. And lastly, a pragmatic study in South African law firms was conducted and findings were presented based on their KM practices [69].

2.5.5 Knowledge Management and Police

With the passing time, Knowledge Management has shown a great importance in almost every sector including the ones of public domain e.g. health, disaster management, police, etc. Seba and Rowley (2010) tried to be known with the organization of knowledge especially in the public sector. In approaching their aim they conducted 4 different case studies of United Kingdom police force department. To obtain the objectives of study the researchers conducted interviews with 10 separate senior police officers in 3 police forces. The researchers also surveyed the national agency responsible for drafting policies to investigate the initiatives taken for the management of knowledge, the strategies planned and promotion of sharing it by encouraging the staff for collaboration as per their domain. "3 stage thematic analyses of the interview transcripts were undertaken. First transcripts were analyzed individually for key themes in each force, next common themes across individual respondents within one police force. Finally, a general picture of Knowledge Management approaches was surfaced by making comparisons between the analysis of the three forces and that of the national policing improvement agency." It was revealed that even not a single organization has a concrete KM policy, although they do try to symbolize KM in their processes (strategies, processes and training methods). It was witnessed that knowledge networking is a major concern in these departments because of a culture, strength, and capricious detection of worth for KM [70].

2.6 Research pertaining to the development of KMS in Business Organizations

Knowledge Management helps the organizations to meet organizational goals by managing their knowledge assets. In business, Knowledge Management has the task of managing activities of knowledge workers for better product service to their customers [71]. In fact, implications of KM are considered to be one of the basic components of every firm.

All organizations including banks are now a day's being in a race of this unending competition. Banks must take initiative to incorporate KM in their business process to survive in the race. Cader et al. (2013) conducted the study regarding "Knowledge Management in Islamic and conventional banks in the UAE" to investigate about the present or to which extent the Knowledge Management is practiced in these banks. The study begins with a research literature review, followed by interviews with senior executives in 8 different banks, wherein 3 were from Islamic and 5 from conventional banks using a structured questionnaire. Due to their experiences in banking and operations management they

were selected for participation, data thus obtained was recorded using tape recordings and field notes. According to findings revealed from the study, Islamic banks were found more actively involved in KM than those of conventional banks. No doubt, both differ in the involvement in KM, although they had same goals and objectives of capturing knowledge, transferring it, and most importantly it's sharing. But unfortunately, not even a single bank was having a knowledge officer nor was any one of them fond of Knowledge Management ethnicity [72].

Besides managing the internal knowledge of an organization, the external knowledge that lies within the customer knowledge can also be managed, which have been found more useful from different studies. Taherparvar, Esmaeilpour and Dostar (2014) conducted the study to examine the customer KM effect on firm performance and continuous innovation in private banks of Guilan, Iran. The data was collected from managers using questionnaires, whereas structural modeling was used for testing the hypothesis. The reports gathered from the findings revealed that customer's knowledge has a positive impact on both innovation speed and innovation quality. Thus using the customer's knowledge there will be more innovational and give better performance of the organization [73].

In Nigeria, a study of "central bank" was conducted to investigate the development of KM strategy. In which a"2cleft approach of communities, practice and a functional portal" was used to impel KM. The need for aligning KM strategy with business strategy for the success of KM was strongly felt [74]. Akin to this an empirical study was carried out to make known that how those organizations working in fewer business settings can benefit from KMS. As from the findings it was highlighted that KMS could be of most significance, such as for better decision making, for promoting innovations hence, leading organizations to better-quality positions [75]. Another study was made on the "perceptions of Knowledge Management and intellectual capital in the banking industry" with the main motive to tab the perceptions of KM and intellectual capital and to note the relevancy and supposed assessment of such secretarial variables in the banks. In this research, the Qualitative approach was followed and analysis was developed after the interviews with the top level management of different banks. Findings conferred the verification of most of the theoretical KM and intellectual capital literature and also identified the value given to KM and intellectual capital by the banks [76]. The approaches of an international organization to the development of Knowledge Management was reviewed by Ringel-Bickelmaier and Ringel (2010), their study begins with the analysis of the evolution of particular approaches supported with different case studies. From the findings of the study, all institutions were found at a nice position of information management encompassed with initiatives to set active KMSs. It was also found that only certain international associations like "UNDP or the World Bank" had integrated external and internal knowledge. While in other organizations tacit and external knowledge management was noted to a less significant level, highlighting that there is still room for improvement in these organizations [77]. Lee and Hong (2002) discussed regarding the KM life cycle from knowledge capture to knowledge utilization and also strategies used to develop an entrepreneur KMS with the support of Information Technology [78].

Squier and Snyman (2004) made a study to know the present status of the KM execution program in 3"South African financial organizations", the study was carried out using Questionnaire and face to face interviews for collecting useful data. After the proper analysis of data KM was found useful and effective in creating and organizing corporate knowledge and most important way to expose tacit knowledge [79]. In addition, Koh, Gunasekaran, Thomas and Arunachalam (2005) evaluated the need for Knowledge Management in a call center. They after studying few already existing models developed the new KM model [80]. For an analysis of the most important KM processes in companies, a conceptual model was developed which analyzed 12 dynamic companies from the industrial sector. Findings record 79 instruments with which knowledge is organized in practice. It was also found that there are provisions for KM on a strategic and tactical level, but they have not been developed as such [81]. Apart from this, China has taken an initiative of compiling all the business knowledge by developing a single KM platform called 'iBridge' with main purpose to promote knowledge sharing and collaboration across the world, which in line will encourage greater levels of innovation. The developed KMS is enabled with many new technical and social tools including blogs, community forums etc. [82].

3. CONCLUSION

In the present era, every organization needs its own KMS to support their work and decision-making power by providing access to its explicit as well as tacit knowledge, thus helping the organizations to achieve their set goals. However, prior to successful implementation of KM, one must be aware about the KM trends operational in different domains of the research management of Knowledge. The present paper has, therefore, focused upon bringing the research trends in KM/KMS into light to all the knowledge dealers. The paper is expected to not only enable the researchers to know the overall patterns of research on the topic but also to enable them to find out the gaps in the research to be dealt with in future.

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