KNOWLEDGE MANAGEMENT, BUSINESS INTELLIGENCE AND EMPLOYEE RETENTION

Review Paper 1

Knowledge Management, Business Intelligence, and Employee Retention

The first paper titled 'Improving Employees Retention Rate Through Knowledge Management and Business Intelligence Components' discusses the important relationship between Knowledge Management and Business Intelligence to Employee Retention. It gives an overall picture of this link and then goes on to present various research and studies conducted in this field.

The link between Knowledge Management, Business Intelligence, and Employee Retention

The motivation of project teams is often accomplished by using such tools as Knowledge Management (KM). The turnover of employees is of major concern to many business organizations these days and it has been proven by researchers that retention is a function of motivation as well as orientation that the employees have regarding his work. The expertise of employees is crucial to organizational success and it is here that KM comes into play as it strategically supports decision making regarding employees, processes, and technology.

Leadership integrity, as well as the justification behind decisions, is directly linked to satisfaction at the job. The human capital is required to be managed intelligently and this relates to the intelligence of all types related to markets, customers, technology and the environment (Surbakti, 2015). Decision Support Systems (DSS) are facilitated by Business Intelligence (BI). Other techniques like Big Data Analytics and data mining also serve the same purpose. Information is thus converted to a form in which it has a high value for managers. Data gets converted to actionable intelligence through knowledge management with the help of business intelligence. This stabilizes the working environment in an organization (Pirttimäki, 2007). BI is a very effective tool for managers who would be analyzing the human resource capital available to an organization.

The competitive nature of any organization is boosted up using work practices that involve a high degree of association (Ranjbar, 2015). Companies aim to achieve competitive advantage based on the quality of their employees. However, boosting employee skills is no easy task. It takes a while before these skills cross a certain required threshold where tangible benefit

can be obtained. BI, Big Data, and associated Analytics form the major part of software utilized at enterprises (Chen, 2012). WhatsApp purchase by Facebook is a typical example. The app had close to 1 billion active users worldwide but employs roughly just 57 engineers in 2016. Such is the quality of their output that there was just one engineer at the company for roughly 17.5 million users in 2016. The app supported nearly 42 billion messages per day in that year with just over 1.6 billion photos shared daily. 250 million videos were shared per day as well. (Desk, 2016). The use of WhatsApp is a typical example of Bid Data creation and accumulation and upon which Big Data Analytics can be run. The accumulated data is so massive that it is hard for a human being to even conceive its massive nature.

Firms use Knowledge Management to ensure that business related information pervades the organization even when old employees are replaced by younger ones. Most of the Big Data streams from social media and New media platforms and quantity is so massive that it is hard to analyze. BI is at the core of the complex, fast-changing, globally inclined, and networked world where proactivity seems to be the right strategy to succeed. Competitive advantage has become synonymous with an organization's ability to be proactive and predictive and it can do both by using Big Data and its associated Analytics.

Literature Review

Knowledge Management and Business Intelligence

The existing literature shows that to strategically manage Business Intelligence, Knowledge Management would classify as to be the most influential factor (Fleig-Palmer, 2011). Knowledge management would also be very closely linked to whether employee suggestions and thinking are valued by the organization and thus this affects their attitudes towards the jobs they have. Teamwork is highly encouraged along with modernizing and enhancement of efficiency to be highly competitive and Knowledge Management based strategies and techniques are at the core of sustaining this competitive advantage (Iqbal, 2012). BI, on the other hand, is a tool used by managers for creating latest information that helps decision making strategically. Business Intelligence is thus the coming together of both data and knowledge relating to how the company conducts its operations with the aim of creating a competitive advantage (Kanaan, 2013).

KNOWLEDGE MANAGEMENT, BUSINESS INTELLIGENCE AND EMPLOYEE RETENTION

BI is the backbone in terms of provision of actionable information and data to support the managerial decision-making process. it is a talent in that it allows to collect data from diverse sources so that modern and enhanced analytical techniques can be implemented and it is also a skill in that it is instrumental in supporting a multiuser demand (Ranjan, 2009).

Employee Retention

Companies intentionally build strategies in the operations that tend to retain employees. Thus, Retention is basically an intentional move (Samuel, 2009). Whenever these employees make a career move to some other organization, the knowledge, intellect, and skills all get transferred as well (Curado, 2007). Human Resource Management has thus come a long way in not just attracting good and well-accomplished workers and employees but also has developed strategies to retain them (Yarbrough, 2016). The inability of an organization to retain employees would increase the turnover rate and this has a burdening effect on the employees who stay with the company (Guha, 2015).

Conclusions of the paper

It then puts forward a research methodology to conduct empirical research on the topic as well as question sessions to get first-hand data. From the data collected, it confirmed the link as stated in the title and while finding BI too technical and expensive especially its data mining component, it nonetheless reinforced its importance for any successful organization. Finally, it concludes that in the competitive world of today, the competitive advantage is through professional employees and their retention needs to ensure a high level of motivation. It recommends that as employees are hard to replace, the intellectual assets of a firm need to be codified using Knowledge Management techniques. This way, knowledge erosion would be avoided.

Review Paper 2

Organizations build Intellectual Capital (IC) using Knowledge Management (KM). The employees are converted to valuable assets. Managers thus, require timely and accurate information to achieve this. Business Intelligence applied properly is the key to success here as it is linked to Knowledge Management. The implementation might be problematical even in the presence of a massive amount of information. Business Intelligence helps manage this huge

amount of information (Davenport, 1993). BI is instrumental in making KM useful to get the competitive edge. Employees become competitive as they become more efficient, perform batter and manage customer relationship better (G. Muhammad, 2014). OLAP, Data Mining and DSS are the BI technologies that relate to KM. Basically, these are strategic. BI needs to be fully aligned with strategies of the concerned organization. Two-way relationship between employees is possible as this information pervades throughout the enterprise. Employees would be more loyal and committed to their work if they feel they have been a part of every decision-making process in the organization.

Paper 2 Literature Review covered

Knowledge Management

The science and art of searching, acquiring and then communicating the information in an organized manner with the idea of motivating company employees is Knowledge Management (Davenport, 1993). Leadership, efforts made as groups, the psyche of the employees in the organization as well as their individual efforts; all relate to Knowledge Management (G. Muhammad, 2014). The organizational ability to identify and acquire the required information related to the goals is called acquisition (Ingram, 2000). The KM process has a second step as well which relates to the retrieval of the information. Multiple sources are tapped by the organization to take out the required information (Williams, 2007).

Business Intelligence

BI is the core process supporting DSS by collecting and analyzing information. Business tools are emphasized by BI to boost business performance. All the processes, technologies and the subsequent implications that are related to the acquisition, analysis, storage, retrieval, and data analysis comprise Business Intelligence (BI) (Wixom, 2010). OLAP (online Analytical Processing) being a tool of BI searches and tests data and then computes and identifies the relationships (G. Muhammad, 2014). The trends, relationships and patterns within the massive data in the Data warehouse are identified by Data Mining (Wixom, 2010). Mathematical techniques and statistics are employed by it. The managerial DSS is a man and machine-based system that makes a decision based on the authentic information. One of the most vital

components of BI is OLAP. Many traditional forms of OLAP are there like regression, sequential patterns, link analysis, and classification.

Methodology

The paper then goes on to discuss the methodology which is a qualitative technique e.g. corporate managers interviews, literature review analysis of previously employed techniques and KM and BI. Previous researchers have also guided the theoretical framework model in this paper. KM and BI enhance competitiveness and effectiveness. Thus, integration of KM and BI is a must for attaining organizational goals. Open-ended questions were asked and managers were free to argue among themselves as well. They agreed that DSS based on KM and BI is extremely important for Operations Management and for short term and long term decision making. OLAP and others are integral to BI and data are more trustworthy for DSS in the presence of BI. Better IC (Intellectual capital) is obtained with both KM and BI well in place. Even though it does not reflect on the Balance sheet and financial statements of the organization, it certainly improves goodwill. However, in both short and long term goodwill has a positive effect on company's financial success too. It also creates a competitive edge.

BI and KM model which is inherently people-centric clearly emphasizes the role of the people who use KM and BI to communicate better with customers (Ghorab, 2014). A well-developed BI model would consider both the organizational operations and functions (G. Muhammad, 2014). A competitive advantage that is driven by the people would almost always involve BI in close linkages to KM. BI is not just a trend. Strategic decision making depends on its integration into organizational thinking. Diverse challenges can be better tackled in presence of BI. KM and BI's influence on each other is clearly shown when different models are evaluated. Models can be established by considering steps of KM and BI exchanges which relate to decision making. IT tools are vital in the work of knowledge workers for both performance improvement and socialization. Data mining results in better BI and KM integration. OLAP is an excellent extraction tool. These KM tools work hand in hand with BI and stress on collaboration rather than competition. Changing global patterns and trends are closely watched by executives of multinational corporations. The business strategical analysis is dependent on socio-economic factors. Sound decisions are possible using qualitative methods as it considers multiple aspects of social life. (Rostam, 2014). On the other hand, the quantitative analysis

KNOWLEDGE MANAGEMENT, BUSINESS INTELLIGENCE AND EMPLOYEE
RETENTION

would give concrete answers, however, limitations might exist in the case of implementation of

results.

Conclusions are drawn in paper 2

Latest knowledge, thanks to globalization is being applied to apply knowledge effectively. BI

related technologies have totally changed KM's utility as an enhancer of firm's Competitive

advantage. The reverse is also true. Fast paced globalization is forcing a need to modernize

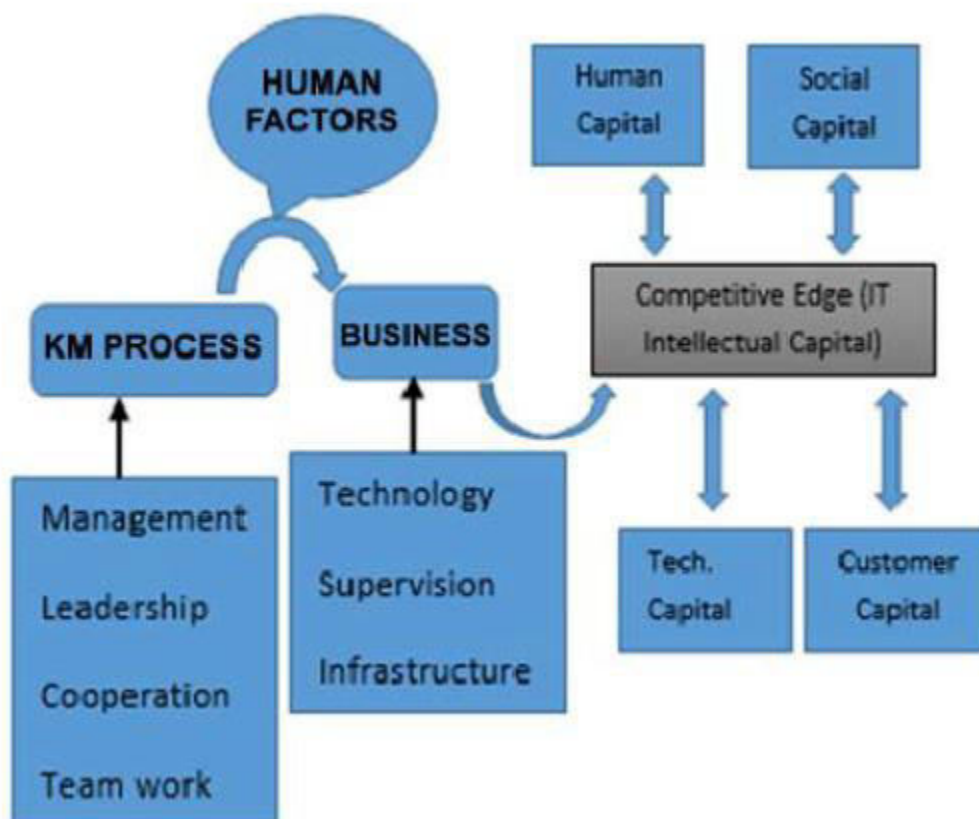technologies to cater to customer needs (H. Nemati, 2002).

Figure Implementation phase of Proposed Model: Integrating KM and BI

Highly valued IC (Intellectual Capital) is created by the integration of KM and BI. The

people working in the organization are a part of this asset created. Thus, Human resources play a

great part in this. The culture prevalent in the organization, behavior of the employees, opinion

leaders, and the style of management; all greatly affect the development of the competitive

advantage (White, 2005). DSS, OLAP, and Data Mining which are all BI technologies need to

KNOWLEDGE MANAGEMENT, BUSINESS INTELLIGENCE AND EMPLOYEE RETENTION

be properly implemented. KM and BI integration require that the organizations hire qualified experts. (McGee, 1999).

This paper focusses on the KM and BI integration based attainment of competitive advantage. Modern technology based BI leads to this advantage. Corporate sector leaders can both analyze and successfully communicate information using BI based systems. BI is a game changer for organizations. Strategic decision making is greatly facilitated through a Data warehouse based information retrieval system. It is not just the computing technology but the employees of the company are a great source of information as well. (Eisenhardt, 2002). IC is carried by these employees which is a source of sound knowledge and information. Thus, integration of KM and BI leads to both performance enhancement and competitive advantage as well. That is the very reason, most of the organizations aim to integrate both KM and BI (S. L. Pan, 1999).

The Human Factor

The implementation model in the figure above, the main factor connecting KM and BI is indeed the 'Human factor.' Thus, it is imperative that both human and social factors would always influence the attainment of competitive advantage. The author of the paper states that this paper is indeed just a milestone and that in future further research would be required. Moreover, to simulate how a human brain works and processes information is the real challenge that lies ahead.

The human inertia

Tacit and explicit both types of knowledge are garnered by an organization through its employees. This helps problem-solving and gives the firm a competitive advantage. However, improvements in methods are in order in ways the knowledge is gained and shared. Interactive, and supporting learning environment is a must. Openness and ownership are important factors too. Sharing exponentially increases individual, team-based or corporate Intellectual Capital (IC). The biggest problem for Knowledge Management is inertia on part of people (Wah, 1999). Monetary and non-monetary rewards are essential as motivators. Conversely, tacit knowledge can disappear in case of mergers, reorganization's, and downsizing. People like to teach and learn and there is a relationship between the 'teacher' and the 'learner' (Smith, 2001).

KNOWLEDGE MANAGEMENT, BUSINESS INTELLIGENCE AND EMPLOYEE
RETENTION

Cognitive Analytics

The Cognitive Analytics exemplary system is an advanced analytics system used to collect tacit knowledge. It has unique capabilities. Traditional DBMS and OLAP, other older data warehousing systems were rather 'unstructured'. Contextual analytics are now included in what is termed as Cognitive analytics. The only relevant dataset which is confined is used in searches. Techniques likes 'relevancy ranking' are used besides those like entity relation modeling, entity extraction, tagging of parts of speech, etc. Thus, data is analyzed within a confined set. If \implicit knowledge' and various 'perspectives' are included in this analysis, these contextual analytics becomes cognitive analytics. Different areas of interest dictate the use of taxonomies, lexicons, computations that are based on various rules, different models etc. for the use data for KM. Within these frames of references are built 'insights' and 'understandings' which are related to 'explicit' knowledge within KM. At least four capabilities are required for Cognitive Analytics:

Collection: The ability to identify relevant information from plenty of sources and forms and ingesting this information

Context: extraction of relationships and features either in an implicit or explicit manner from a variety of data sources and creation of metadata thus building continuously a context around the various data elements

Cognition: analyzing the data inside of different 'contextual perspectives' and adding in 'insights' about metadata and other information to deliver a better understanding.

Exploitation: Applying all above so that action can be taken for DSS and Automation systems (Fred A. MAYMIR-DUCHARME, 2014).

The software architecture of Cognitive Analytics and KM is shown in the figure below. This belongs to Content Analytics from IBM. It is a solution of Cognitive Analytics. The Crawler framework identifies and ingests data from multiple sources. This acquisition is done in multiple formats. An IBM search engine is utilized which helps store the information, metadata, and results obtained analytically. KM's data set is ingested and indexed first. Metadata such as UIRI,

KNOWLEDGE MANAGEMENT, BUSINESS INTELLIGENCE AND EMPLOYEE
RETENTION

URL, name and type of document, data indexing, etc. are included in it. Legal, economic and

organizational constraints might make the documents non-persistent in the KM (Fred A.
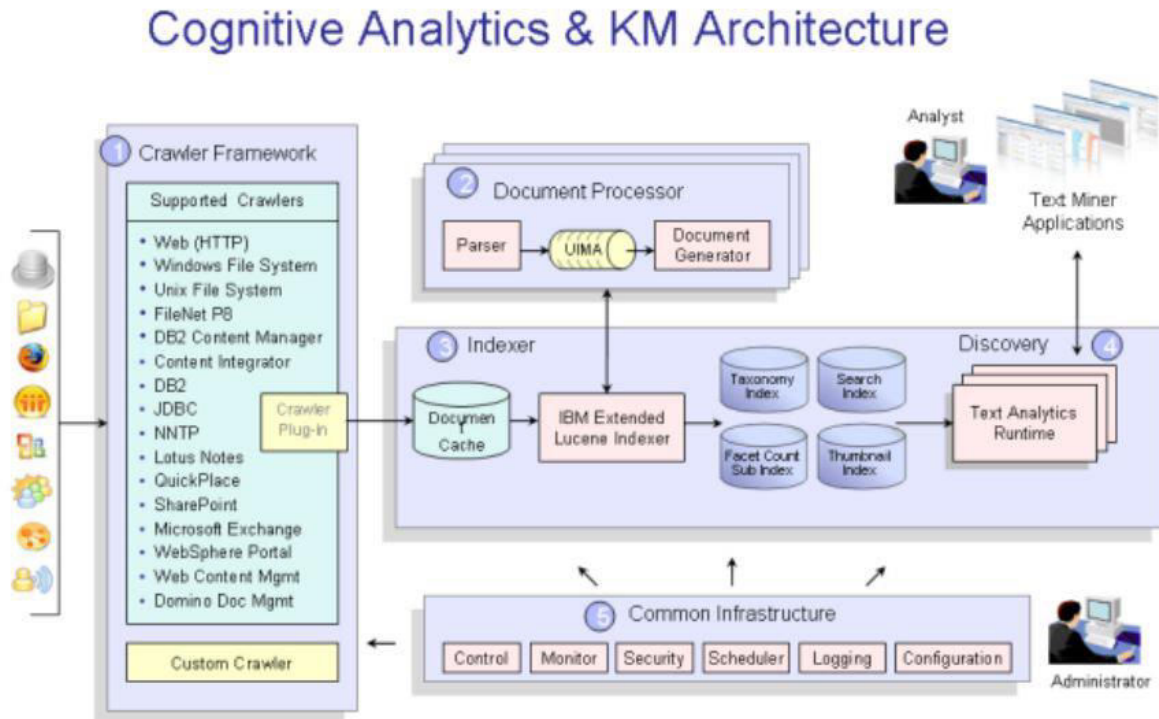
MAYMIR-DUCHARME, 2014).

Figure   Cognitive Analytics and KM architecture Source: (Fred A. MAYMIR-DUCHARME, 2014).

Contextual Analytics is shown in the figure below. This is the 2nd phase and it includes the

application of analytics to documents and all KM data. The features are extracted either

implicitly or explicitly and so are the relationships. This way metadata is created. The context

around data elements thus gets built on a continuous basis. SIPAI (Search and Index API) is

primarily utilized for the analysis of documents and thus 'annotations' are created in the output
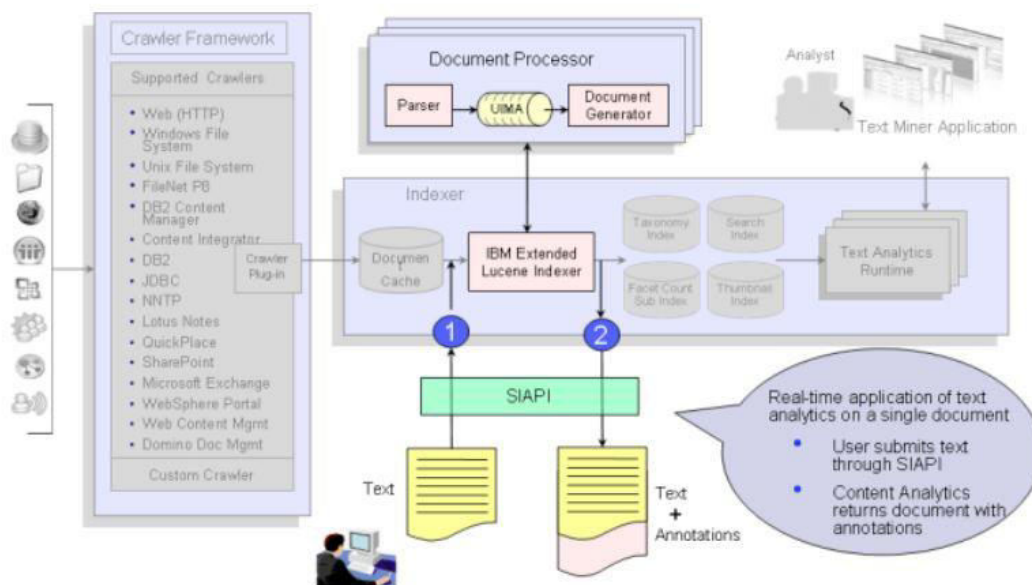
(Fred A. MAYMIR-DUCHARME, 2014).

Figure   Contextual Analytics Source: (Fred A. MAYMIR-DUCHARME, 2014).

The figure below shows Contextual and Cognitive Analytics that extends the Text and
multimedia analytics to add taxonomies, lexicons, and other different models of analytics. The
Analytics server has a 'text miner' which creates analytic models using a mapping structure
which is multi-element. An attribute or an entity is called an element. It is possible to create
social network models, hierarchical models etc. which represent the predictive models for
organizations. Information on geo-location, time, and other important attributes like
demographics are used to provide visuals or models. Taxonomy and lexicon quality effects the
quality of the generated models. A tabularized list is created which is basically used for the
analytics or for creating models (Fred A. MAYMIR-DUCHARME, 2014).

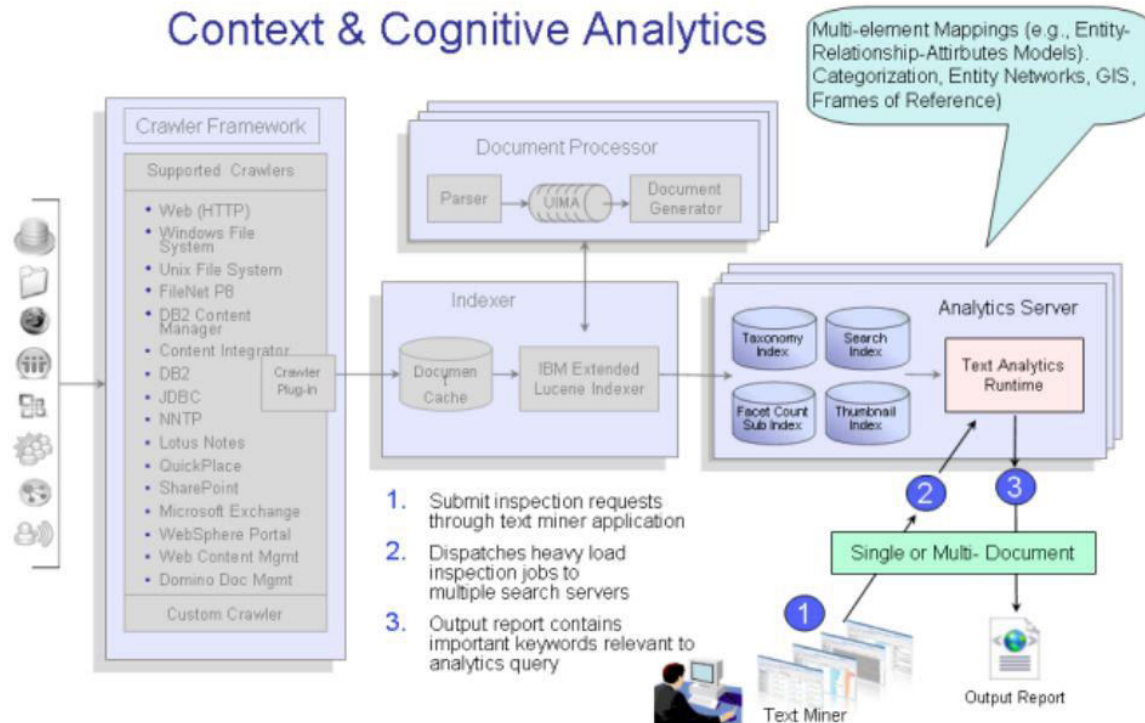KNOWLEDGE MANAGEMENT, BUSINESS INTELLIGENCE AND EMPLOYEE RETENTION

Figure Contextual and Cognitive Analytics Source: (Fred A. MAYMIR-DUCHARME, 2014)

Gaps in relation to tacit knowledge

The main categories of tacit knowledge gaps per most studies are in the five categories described here: Physical capital linked knowledge gaps, IC linked knowledge gaps, knowledge gaps linked to the management of relationships, knowledge gaps linked to social capital, and finally related knowledge gaps linked to cultural capital. Thus, organizations need to these and take proactive measures to smoothen the effects of these gaps and plug them by creating social and cultural harmony within the organization and implement strategies for the creation of the best of relationships through trust, mutual respect for views, opinions, and culture. The more the understanding between the people within the organizational on the functional, social, cultural and human level, the less would be these gaps.

Research Objectives

KNOWLEDGE MANAGEMENT, BUSINESS INTELLIGENCE AND EMPLOYEE RETENTION

The Research objectives include studying the relationship of Knowledge Management to Business Intelligence in developing a competitive advantage and the ability to motivate employees and retain them. To build a viable KM and the exploitation BI tools, the human factor is the most important. Human inertia needs to be reduced and share and trust enhanced within the organization to reduce tacit knowledge gaps. Thus, the objective of the research is to study the human behavior as it fits into the development of a viable BI based KM system and ensuring that the human factor is used to its positive potential as much as possible. The factors that create gaps in tacit knowledge must be minimized and the research aims to reduce these to enhance the effects of the integration of KM and BI.

As explained above, Cognitive Analytics are ideally suited for this as from among the massive data available these days, firms would like to use the most relevant data so that the research can be more focused and result oriented.

References

Chen, H. C. (2012). BUSINESS INTELLIGENCE AND ANALYTICS: FROM BIG DATA TO BIG IMPACT. *MIS Quarterly*.

Curado, C. &. (2007). Managing intellectual capital: the MIC matrix. *Int. J. Knowledge and Learning*.

Davenport, T. H. (1993). *Process Innovation: Reengineering Work through Information Technology.* Boston: Harvard Business School Press.

Desk, T. (2016). WhatsApp now has 1 billion monthly users, 42 bn messages sent each day. *The Indian Express*.

Eisenhardt, G. O. (2002). Integrating knowledge in groups: how formal interventions enable flexiBusiness Intelligencelity. *Organization Science*.

Fleig-Palmer, M. M. (2011). Trust as a Moderator of the Relationship Between Mentoring and Knowledge Transfer. *Journal of Leadership & Organizational Studies*.

Fred A. MAYMIR-DUCHARME, L. A. (2014). Cognitive Analytics: A Step Towards Tacit Knowledge? *SYSTEMICS, CYBERNETICS AND INFORMATICS* .

G. Muhammad, J. I. (2014). Business Intelligence as a Knowledge Management Tool in Providing Financial Consultancy Services. *American Journal of Information Systems*.

KNOWLEDGE MANAGEMENT, BUSINESS INTELLIGENCE AND EMPLOYEE
RETENTION

Ghorab, D. F. (2014). The Influence of Knowledge Management on Organizational Business
Processes' and Employees' Benefits,. *International Journal of Business and Social
Science*.

Guha, S. &. (2015). Effects of Intrinsic and Extrinsic Factors on Voluntary Employee. *Anvesha*.

H. Nemati, D. S. (2002). Knowledge warehouse: an architectural integration of knowledge
management, decision. *Decision Support Systems*.

Ingram, L. A. (2000). Knowledge transfer: A basis for competitive advantage in firms.
Organizational Behavior and Human Decision Processes.

Iqbal, J. &. (2012). Reviewing Knowledge Management Literature. *INTERDISCIPLINARY
JOURNAL OF CONTEMPORARY RESEARCH IN BUSINESS*.

Kanaan, R. M. (2013). THE IMPACT OF KNOWLEDGE SHARING ENABLERS ON
KNOWLEDGE SHARING CAPABILITY: AN EMPIRICAL STUDY ON
JORDANIAN TELECOMMUNICATION FIRMS. . *European Scientific Journal*.

McGee, M. (1999). Lessons from a cultural revolution – Proctor & Gamble is looking to IT to
change its entrenched culture – and vice versa. *Information*.

Pirttimäki, V. H. (2007). Conceptual analysis of business intelligence. *South African Journal of
Information Management*.

Ranjan, J. (2009). BUSINESS INTELLIGENCE: CONCEPTS, COMPONENTS,
TECHNIQUES AND BENEFITS. . *Journal of Theoretical and Applied Information
Technology*.

Ranjbar, M. &. (2015). THE RELATIONSHIP BETWEEN KNOWLEDGE MANAGEMENT
AND EMPLOYEE RETENTION. *The IRES 7th International Conference.* Kuala
Lumpur.

Rostam, N. A. (2014). Integration of Business Intelligence and Knowledge Management – A
literature review. *Journal of Intelligence Studies in Business*.

S. L. Pan, S. a. (1999). Knowledge management in practice: an exploratory case study.
Technology Analysis & Strategic Management.

Samuel, M. O. (2009). Employee retention and turnover: Using motivational variables as a
panacea. *African Journal of Business Management*.

Smith, E. A. (2001). The role of tacit and explicit knowledge in the workplace. *Journal of
Knowledge Management*.

Surbakti, H. (2015). WEB TECHNOLOGY KNOWLEDGE MANAGEMENT AND ITS
PRIVACY AND SECURITY CHALLENGE. *The IIER International Conference.*
Singapore.

Wah, L. (1999). Making knowledge stick. *Management Review*.

KNOWLEDGE MANAGEMENT, BUSINESS INTELLIGENCE AND EMPLOYEE
RETENTION

White, C. (2005). The Role of Business Intelligence in Knowledge Managemen. *Eye network*.

Williams, S. W. (2007). The Profit Impact of Business Intelligence. *Morgan Kaufmann*.

Wixom, B. H. (2010). The BI based organization. *International Journal of Business Intelligence Research*.

Yarbrough, S. M. (2016). Professional values, job satisfaction, career development, and intent to stay. *Nursing Ethics, III*.