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The effect of HRM Practices on Knowledge Management Capacity: a Comparative Study in Indian IT Industry

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Abstract

Successful businesses demand high-performing Human Resource Management Practices (HRMP) and effective Knowledge Management Capacity (KMC) to enhance the overall organizational performance. Rapid growth of both local and multinational companies operating in knowledge-intensive industries has increased the global competition in the labor market, also for the developing economies. Actually, attracting valuable human capital, retaining talents and managing effectively knowledge to deliver on the latest technologies and innovative solutions and services are the biggest challenges in the modern IT industry. This paper studies the influence of HRMP on KMC through a cross case analysis including four companies operating in Indian IT sector. Based on the existing researches in this field, five key HRMP have been identified (i.e. recruitment and selection, training and development, compensation and reward, employee retention, and career development), as well as two key processes supporting the KMC (i.e. knowledge acquisition, and knowledge sharing). The article adopts a qualitative research method based on a multiple case study, and uses primary and secondary data collected through desk research and field interviews. Results show the existence of HRMP that aim to enhance the individual learning, motivation and retention of employees for knowledge acquisition and knowledge sharing, in the strategic perspective to improve the organizational performance. This study provides a twofold contribution: from a research perspective, it investigates the role of HRMP to support KMC in Indian IT companies; from a practitioner view, the study may help HR and KM managers to motivate employees to undertake learning processes, as well as to acquire and share knowledge resources useful for the organization to remain innovative and stay competitive. Since these mechanisms have not been widely studied in the Indian IT industry, these results may open the field for further researches on a deeper investigation of the relationships existing between HRM, KM and organizational performance in the Indian IT industry and, more in general, in the developing economies.

Keywords: Case study; Human resource management; Human resource management practices; Knowledge management; Knowledge management capacity; India; IT industry.

1. Introduction

Organizational working environment has become more competitive and rapidly changing in recent decades. In line with the technology advancement, human resource professionals have inevitably involved in facing the ‘talent crunch’ (Rao, 2015) and undertaking the ‘Global War for Talent’ (Ng, 2013) to recruit those personnel who are highly talented, skilful, knowledgeable and potential for innovation and development. Indeed, organizations are able to gain and sustain a global competitive advantage when they manage their talented workforce effectively (Bryan, 2010; Schuler et al., 2011).

On the other side, organizations are facing the challenge to create, improve and manage new knowledge assets, and transform them into social and economic value (Pinho et al., 2012). This makes people as creators and holders of knowledge, with high potential and distinguishing competencies (Ubeda-García et al., 2013) by sharing ideas, opinions and experiences that contribute to develop the organizational knowledge base (Monavvarian & Khamda, 2010). Therefore, how to manage effectively knowledge represents an essential issue for firms to fulfil their objectives and achieve superior performance (Chen & Huang, 2009). Thus, human resources and knowledge are considered two fundamental factors and valuable assets within organizations to achieve a competitive advantage and innovation-related goals (Geiger & Schrevogg, 2012; Omerzel and Gulev, 2011; Scarbrough, 2003). This because knowledge resides in the minds of employees and has to be continuously developed and acquired, even if it can be easily lost if employees decide to leave the organization or refuse to share it (Fong et al., 2011; Jimenez-Jimenez & Sanz-Valle, 2013; Collins et al., 2013). Therefore, organizations should take care of their human factor to take advantage of the knowledge embedded at their internal. This is particularly true in knowledge intensive industries, like the IT sector, where attracting talents, retaining human capital and managing effectively their knowledge to deliver high performing and innovative services are big challenges, in both developed and developing countries.

In such a perspective, theory suggests human resources management (HRM) and knowledge management (KM) as two valuable and interdependent drivers. HRM concerns the policies, practices and systems that influence employees’ behaviour, attitude and performance (Noe et al., 2007), thus allowing for the effective utilization of people within an organization to achieve the organizational goals (Fong et al., 2011). Whereas, KM aims at creating or locating knowledge, managing the flow of knowledge and ensuring that knowledge is used effectively and efficiently for the long-term benefit of the organization (Darroch & McNaughton, 2002).

Managing the human resources of an organization requires the use of different practices (Ortega-Parra & Ángel Sastre-Castillo, 2013) that influence the behavior, attitudes and performance of individuals by creating a learning culture and increasing their learning capacity, so helping the entire organization to reach and maintain the performance desired (Fong et al., 2011). In such a way, human resources management practices (HRMP) represent a system that attracts, develops, motivates, and retains employees to ensure the effective implementation and the survival of the organization and its members (Wang & Noe, 2010). HRMP are essential to capture and develop the employees’ knowledge and skills needed by the organization to stay competitive and be innovative (Chen & Huang, 2009). Thus, HRMP support the knowledge management capacity (KMC) of organizations, which refers to those processes that develop and use knowledge resources

within the firm (Gold & Arvind Malhotra, 2001), and especially knowledge acquisition and knowledge sharing that are required by the organization to gain a competitive advantage and organizational performance (Hsiao et al., 2011).

The interest in building bridges between HRMP and KM processes has increased over the years. Many researchers have undertaken quantitative studies about the direct impact of HRMP on KM processes (Camelo-Ordaz et al., 2011; Chen & Huang, 2009; Jimenez-Jimenez & Sanz-Valle, 2012). Some contributions were mainly oriented to explore the link between HRMP and knowledge sharing (Pillai, 2016; Camelo-Ordaz et al., 2011; Fong et al., 2011; Hsiao et al., 2011; Cabrera & Cabrera, 2005) with a major focus on an individual perspective (Foss et al., 2009; Horvat et al., 2015). However, this area still demands additional research oriented to investigate the relationships between HRMP and other KM processes. More specifically, the influence of HRMP on KMC has not been widely studied and supported by empirical comparative cases.

Actually, since knowledge and human resources are key drivers for development and have been successfully applied to improve business performance in many organizations in the western countries and developed economies, KM and HRM can play a crucial role also in the developing economies (Teclémichael Tessema & Soeters, 2006; Lwoga et al., 2010). Specifically for India, where primary educational institutions, advanced research centres and world-class management schools provide qualified human assets, the effective management of knowledge and human resources can attract companies interested in investing in knowledge-intensive industries (Malhan & Gulati, 2003); this makes knowledge burst and information distribution as key enablers of global development strategies (Thakur & Sinha, 2013). The Indian IT industry has not been deeply investigated in such direction, even if it is very dynamic and in continuous development. This is confirmed by the presence of a significant number of knowledge-intensive companies like Wipro Technologies, Infosys, Tata Consultancy Services, IBM India Private Limited, HCL Technologies, Tech Mahindra, Larsen & Toubro Infotech, Mphasis, Mindtree, etc., which are undertaking several initiatives to exploit and develop further their knowledge assets (Goswami, 2009). A recent study conducted by Bharadwaj et al. (2015) has confirmed this phenomenon; the authors discovered that the organizational knowledge management capabilities in Indian companies influence positively the knowledge management effectiveness measured in terms of better communication and enhanced skills, improved decision-making, and increased productivity.

In such a view, based on the existing researches in this field, five key HRMP (i.e. recruitment and selection, training and development, compensation and reward, employee retention, and career development) and two crucial processes supporting KMC (i.e. knowledge acquisition, and knowledge sharing) have been selected to carry out this research (Figueiredo et al., 2016; Hsiao et al., 2011; Scarbrough, 2003). The study adopts a qualitative research analysis based on multiple case study (Yin, 2009) by involving four major Indian IT companies; the study uses also primary and secondary data collected through desk research and field interviews. The article provides a two-fold contribution: the contemporary investigation of the link between HRMP and knowledge acquisition and knowledge sharing processes, and the geographical focus of the study in the Indian IT industry, which represents a context of research not so much investigated under this perspective. The article is organized as follows: next section presents the theory background of the study based on HRMP, KMC and their reciprocal relationship. Afterwards, the methodological issues are

illustrated by presenting data collection and data analysis processes. Then, an overview for each company is provided through a synthetic description about their own HRMP and the typology of support given to KMC. A conclusive synthesis is also provided by highlighting similarities and differences existing among the four cases. Finally, discussion of results and conclusions end the paper.

2. Theory Background

HRM and KM are two complementary processes and interdependent constructs in the theory of knowledge based view of the firm (Wright et al., 2001; Grant, 1996), since they have both direct and indirect relationships with intangible assets, which are considered the key strategic resources of the organizations (Geiger & Schreyögg, 2012). HRM refers to the effective use of people within an organization for stimulating them to interact, share knowledge, and achieve the organizational goals (Fong et al., 2011; Al-Tit & Hunitie, 2015). KM is about capturing, developing, organizing, sharing, applying and exploiting knowledge assets within the firm to gain profitability and sustain the competitive advantage, with a central role played by the individuals (Omotayo, 2015; Inkinen et al., 2015).

HRM and KM are two people-centered concepts, and most researchers suggest that HRM is crucial for KM implementation to achieve business success (Runar Edvardsson, 2008; Monteiro & Pais, 2014; Mohanapriya & Sasikala, 2015). In particular, HRM supports employees in creating and managing knowledge through the sharing of ideas, opinions and experiences (Monavvarian & Khamda, 2010; Theriou & Chatzoglou, 2014). On the other side, KM can be interpreted as a form of HRM, by using information technology as supporting mechanism in human interactions and collaborations (Yahya & Goh, 2002). Moreover, by adopting a global perspective of the competitive dynamics in the current business scenarios, HRM represents a fundamental area of activities for facing the challenges of the talent management process, such as the shortage and surplus of talent, workplace location and salary of talent (Schuler et al., 2011). Finally, HRM facilitates the building of a learning organization by assisting employees in creating and using knowledge, by establishing appropriate networks, and engaging in double loop learning (Garavan et al., 2000). Looking at the aim of the paper, the next sections refer to HRMP and KMC, and presents the main studies about the linkages existing among them to support the organization in achieving better performance.

2.1 Human Resource Management Practices (HRMP)

Human resource management practices represent a set of organizational activities that aims at attracting, developing, motivating and retaining employees (Horwitz et al., 2003), as well as at ensuring that human resources are effectively employed to achieve the organizational goals (Collins & Clark, 2003; Wright & Boswell, 2002). Thus, HRMP are vital for managing knowledge within firms (Theriou & Chatzoglou, 2014), and can improve management process at organizational level by increasing employees' skills and abilities, influencing their behavior and attitudes, and increasing their motivation and learning capacity (Jackson et al., 2014; Scarbrough, 2003; Wright & Snell, 1998). Likewise, HRM practices are used by organizations to manage their

own human resources through facilitating the development of competencies that are firm specific, produce complex social relations and generate organizational knowledge to sustain competitive advantage (Singh & Jain, 2014). An interesting research carried out by Strack et al. (2012) showed the importance of effective HR practices by highlighting that companies that are highly skilled in core HR practices experience up to 3.5 times the revenue growth and as much as 2.1 times the profit margins of less capable companies. In some cases, HRMP may significantly predict organizational performance (Amin et al., 2014), either directly or indirectly through knowledge management (Al-Tit, 2016). Finally, the implementation of HRMP contributes to consolidate the brand of the organization that, especially in the Indian context, plays a crucial role to attract young talents (Rao, 2015).

More specifically, Jerez Gómez et al. (2004) found that HRMP such as selection, compensation, and training and development serve as drivers to orientate employees' behavior and motivation, thus influencing their learning attitudes to assist the organization for achieving its best performance. Moreover, Pillai (2016) found that HRMP like training and development, reward and recognition, performance appraisal, and team working contribute to knowledge sharing in the organization. Mansouri (2016) and Chia et al. (2016) showed that commitment-based HRMP oriented towards "committing" the human resources towards the organization as against "controlling" them, generate superior performance in the long term.

Definitely, HRMP reveal as important tools for harnessing core competencies, behavioural outcome and learning capacity, thus having impact on organizational performance and innovation (Scarbrough, 2003; Figueiredo et al., 2016). Appendix A provides a short description about the five key HRMP identified for this study.

2.2 Knowledge Management Capacity (KMC)

In today's dynamic business world, knowledge management has become a key success factor of the organizations. KMC refers to the organizational processes for generating and disseminating knowledge continuously, thus providing firms with the opportunity to recombine current knowledge and create new knowledge by acquiring it from the internal employees, as well as external stakeholders and marketplace (Hsiao et al., 2011). KMC embeds infrastructural and process capabilities, which exploit and make knowledge-related resources as valuable assets for organizational knowledge effectiveness. In such a view, knowledge culture, knowledge structure and information technology, together with knowledge acquisition, knowledge storage, knowledge dissemination, and knowledge application processes play an important role in improving organizational effectiveness mainly resulting in improved communication, enhanced collaboration, improved employee skills, better decision-making, and improved productivity (Bharadwaj et al., 2015).

Definitely, KMC allows for managing knowledge through a set of processes and mechanisms focused on its acquisition, development, sharing, and application (Hsiao et al., 2011; Chen & Huang, 2009; Gold & Arvind Malhotra, 2001) with the final aim to develop new intellectual assets as a new source of competitive advantage. In particular, knowledge acquisition plays a critical role in enhancing the breadth and depth of knowledge available to the firm from outside, thereby developing potential and self-transcending knowledge to cultivate radically new insights and

promote innovation at all levels of the organization (Scharmer, 2001). Similarly, knowledge sharing with colleagues, collaborators and partners enables the effective usage and application of knowledge resources, thus providing value to the entire organization (Olatokun & Nwafor, 2012). Definitely, organizations that exhibit a greater level of KMC, mainly in terms of knowledge acquisition and knowledge sharing, are likely to harness value and thus lead to increase their performance through collecting, organizing and transforming knowledge into productive activities (Hsiao et al., 2011; Gold & Arvind Malhotra, 2001). Appendix B provides a synthetic description of the key processes characterizing the KMC of the organization within this study.

2.3 Linkages between HRMP and KMC

HRMP is a multi-dimensional construct, which can be conceived as normative model (Ogedegbe, 2014) that encompasses a large number of strategic linkages with KM processes. Actually, HRMP can enhance creativity, team building and problem solving capacity, thus generating a positive impact on the overall KM process (Yahya & Goh, 2002). In such a view, Table 1 summarizes relevant researches about the relationship between HRMP and KMC.

<Table 1 about here>

The theory background above described highlights that most of the researches focused on analyzing HRMP within the general context of KM processes, without an explicit focus on both knowledge acquisition and knowledge sharing. Moreover, many studies discussed the relationship between HRMP and knowledge sharing process at organizational level (Fong et al., 2011; Ipe, 2003); some others discussed the individual perspective of HRMP and knowledge sharing (Foss et al., 2009; Manafi & Subramaniam, 2015). In any case, HRMP influence employees' behavior and generate positive effects in individual performance by improving the knowledge, skills and abilities, with a positive effect also at organizational level (Jackson et al., 2014). Moreover, the influence of HRMP on KMC has not been widely studied and supported by empirical comparative cases, and most of the studies refers to the western countries, with limited attention to the development economies like India, where knowledge-intensive industries are growing up (e.g. IT sector). In such a perspective, this paper aims at exploring and investigating the following research question: *How do HRMP influence KMC in terms of knowledge acquisition and knowledge sharing processes within organizations operating in Indian IT industry?*

3. Methodology

The article adopts a multiple case study methodology by considering four Indian IT companies. Case study methodology has been selected because of the unexplored nature of the research topics where the main objective is answering to "how" and "why" questions. Besides, case study allows for a holistic understanding of the complex phenomenon under research by carrying on empirical inquiry that investigates bounded contemporary phenomena within the real life context (Eisenhardt, 1989; Yin, 1994; Creswell, 2014). Moreover, case study allows researchers to observe formal as well as informal processes within an organization and collect a wide array of data

(Hartley, 1994). Finally, through an in-depth examination of each case, multiple case studies are appropriate when attempting to externally validate the findings from a single case study, through cross-case comparisons (Eisenhardt, 1989). Definitely, multiple case studies permit the generation of more robust theory respect to single case study, being the former methodology more grounded in varied empirical evidences (Eisenhardt & Graebner, 2007; Yin, 1994).

The study involved four Indian IT companies with a CMMI level 5 certification (Capability Maturity Model Integration) and a multinational presence; they play a key role in the Indian IT industry, they have a qualified and talented work force, they adopt innovative HRMP, and they consider KM as a key driver to enhance their innovation capacity.

Data have been collected by a native Indian researcher who used primary sources such as semi-structured questionnaires and in-depth (formal and informal) phone interviews with HRM managers, knowledge managers, as well as with people involved in HRM and KM initiatives. On average, for each company, five persons have been involved in data collection process. Interviews lasted on average one hour in order to gather information required to pursue the paper's research objective, and were tape-recorded and transcribed. Topics covered during the interviews concerned the modalities of implementation of the HRMP, the approaches followed and the initiatives undertaken. Finally, a telephone follow-up with the respondents was conducted to check some information and gather some missing data.

To ensure data triangulation and the internal validity of the construct, which refers to the reliability of the study itself (Yin, 2009; Dane, 1990), some secondary data sources have been used, such as the company's annual reports, HR policies, website and social media (e.g. blogs, YouTube, online magazines). These multiple and heterogeneous data sources contribute to develop a converging line of inquiry (Yin, 1994). The key objective of data collection and analysis was to understand the features of HRMP in each company, and in which way they provide support to the KMC.

Besides, by following the recommendations of Miles & Huberman (1994), data analysis was conducted in four main stages:

- *Data categorization.* Data collected from each company have been aggregated in order to identify the key characteristics of how each company operationalized and implemented the five HRMP, as well as to understand which kind of support they provided to knowledge acquisition and knowledge sharing processes.
- *Data contextualization.* During data collection, some contextual factors have been considered that may reveal new features and perspectives on HRMP and KMC, as well as reciprocal relationships.
- *Preliminary within case analysis.* Data from each case were analyzed separately with the same framework to give a complete picture and a systemic description of the company's approach to HRMP and KMC. A synthetic description of each case was written and checked with the companies' informants to prevent observer bias (Lincoln & Guba, 1985) and establish the credibility of the interpretation (Wallendorf & Belk, 1989).
- *Cross-case analysis.* Comparisons across the four companies were made through a cross-case matrix, in order to reach a general explanation of the observed phenomenon and determine a likely existence of similarities and differences (Eisenhardt, 1989; Yin, 2009).

4. Findings

The findings of the analysis carried out are presented here by adopting a two-level approach. Firstly, for each case, the company's overview is provided in terms of general description, key characteristics of HRMP and their effect on KMC. Later, a cross comparison has been realized by presenting similarities and differences among the four cases.

For confidentiality reasons, the real names of the four companies have been anonymized and are simply indicated as Company A, Company B, Company C, and Company D.

4.1 Companies' Overview

Company A is a major Indian IT company with about 173,000 employees and a total revenue of about 7.5 B\$ in 2016. Company A adopts Six Sigma method and is PCMM level 5 certified (People Capability Maturity Model). Its core business concerns the design and implementation of software solutions, IT consulting, business process outsourcing, and R&D on hardware and software design. Company A considers human resources and knowledge as the most important assets of the organization, and the actual sources of innovation and sustainability. It leverages HRMP to consolidate its businesses and develop further its intellectual capital. Moreover, it provides a robust support for the KM processes to reinforce its own KMC and enhance the overall organizational performance. Table 2 provides a synthetic description about how Company A has implemented its own HRMP and how these ones support the organizational KMC in terms of knowledge acquisition and knowledge sharing processes.

Company B is an Indian multinational company with almost 200,000 employees including the subsidiaries and a total revenue of about 10 M\$ in 2016. The company offers services for business consulting, information technology, software engineering and outsourcing. To deliver its services, the company adopts a global delivery model, according to which large projects are divided into smaller components that are distributed and completed in different parts of the world. As a knowledge-intensive company, company B recognizes the value of its human resources in maintaining and increasing new knowledge, as well as in supporting knowledge transfer and knowledge creation to develop technological activities for its competitive positioning and performance. Table 3 provides a synthetic description about how Company B has implemented its own HRMP and how these ones support its KMC in terms of knowledge acquisition and knowledge sharing processes.

Company C is a provider of IT services, consulting and business solutions, with a multinational presence. It is one of the largest providers of IT and business process outsourcing services in India with about 8,000 employees at global level. The company strongly believes that "*good ideas can come from any level of the organization and teams can do better than the individuals*". With such mindset, it is evident that the role of human resources is crucial to provide the context for energizing and motivating people, which is an enabling condition for the company to grow and become more global. One of the key features of company C is that the human resource function is closely linked to the business strategy and knowledge management functions; this highlights the importance of HRM practices to capture and develop the employees' knowledge and skills needed from the organization to remain competitive and be innovative. In such a way, HRM function is

able to involve the right number of qualified people into the right jobs at the right time, so that the organization can benefit of excellent work force with innovative performance. Table 4 provides a synthetic description about how Company C has implemented its own HRMP and how these ones support its KMC in terms of knowledge acquisition and knowledge sharing processes.

Company D is the Indian subsidiary of an American multinational corporation operating in technology and consulting services. With about 150,000 employees and a total revenue of 3B\$ in 2016, it contributes significantly to the domestic IT industry. Company D produces and sells IT hardware and software, and has a very rich and wide portfolio of researches, consulting and financial services, solutions, systems and software that distinguish it from the direct competitors. The real source of value for the company is to ensure to its customers and human capital full success and innovation, through a trustful and responsible long-term relationship. The company leverages its own HRMP to consolidate its businesses and develop further its intellectual capital. Moreover, it provides a robust support to the KM processes to reinforce its own KMC and enhance the overall organizational performance. Table 5 provides a synthetic description about how Company D has implemented its own HRMP and how these ones support its KMC in terms of knowledge acquisition and knowledge sharing processes.

<Table 2 about here>

<Table 3 about here>

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<Table 5 about here>

4.2 Cross-case Analysis

This section presents a synthetic and comparative view on how each HRMP is implemented in the four companies analyzed. More specifically each HRMP is described in terms of approach and key distinguishing features, and then it is indicated how it affects knowledge acquisition and knowledge sharing processes in each company, thus providing a qualitative indication about the companies' KMC. The ultimate goal is to highlight similarities and differences about how the HRMP characterize and influence the KMC of the four companies analyzed.

Recruitment & Selection

Most of the companies tends to focus on external methods, which are advertising, online recruitment, and the use of employment agencies to recruit talented employees and introduce new knowledge into the company (Chatterjee, 2007). However, also internal recruitment process is adopted, mainly for promotions and change of positions. The recruitment process for all the companies considers the level of fit between the individual and the organizational culture. This influences the cultural aspects of the socialization process of individuals within the organization, as well as encourages and supports the interchange of knowledge among the old and new members. The selection process for all the companies is mainly based on collecting, measuring and evaluating candidates through interviews, analysis of their background, and assessment of their knowledge creating behavior (Evans, 2003). An interesting element characterizing Company B concerns the evaluation of the candidates' "learnability", which refers to the ability of a person to absorb the concept learnt in a context and to apply it in another context. This characteristic, which contributes to strengthen knowledge integration, is particularly important in the project-based companies, where the projects' life cycle is short and technology changes rapidly.

Definitely, the recruitment and selection process brings hire qualified and experienced personnel who contribute significantly to let the organization acquiring new knowledge and competencies, enhancing the organizational learning culture, and the willingness to share ideas. This finding is consistent with the earlier researchers on knowledge acquisition and knowledge sharing supported by recruitment and selection practices (Fong et al., 2011; Jimenez-Jimenez and Sanz-Valle, 2012; Obeidat et al., 2014; Scarbrough, 2003).

Table 6 provides a synthetic comparison about the recruitment and selection process in the four companies analyzed, in terms of both key features and its influence on the companies' KMC.

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Training & Development

All the companies point out the importance of a broad application of training in order to develop employees' learning capabilities and provide a common language and shared vision. This would develop a high level of self-efficacy so that employees may feel more assured of their abilities and will be more likely to exchange knowledge with others (Cabrera & Cabrera, 2005), thus fostering the acquisition of new knowledge and the dissemination of individual knowledge within the firm. Moreover, all the companies accomplish their requisite of skilled workforce by providing them induction training, team-based training, project oriented training, on-the-job training, leadership

development, and other internal educational programs that are designed to improve quickly the employees' learning capability. Additionally, findings also suggest that most of the companies use multi-skill training that influences the degree of openness and acquisition of new knowledge, as well as the degree of knowledge transfer (Jerez Gómez et al., 2004).

In spite of many similarities, some differences also could be noted such as Company A that chose the six-sigma methodology since it is recommended for team based-learning and increasing technical and statistical competencies; whereas Company B followed the 9-pillar model that is used mainly for developing managerial skills and grooming team members to enhance commitment-based learning and knowledge acquisition.

Table 7 provides a synthetic comparison about the training and development process in the four companies analyzed, in terms of both key features and its influence on the companies' KMC.

<Table 7 about here>

Compensation & Reward

All the companies consider that compensation and reward system plays a vital role to motivate and encourage employees to create and transfer knowledge within the organization. All the companies have taken similar initiatives that include financial and non-financial compensation, internal opportunities, pay for performance, and bonuses. This kind of rewarding system motivates and supports individual employee's performances through better learning and commitment that increase the motivation to share and create new knowledge, as already confirmed in other researches (Manafi & Subramaniam, 2015; Scarbrough, 2003).

Additionally, the study highlights also that employees are expected to repeat positive behavior in obtaining rewards and recognition by the company. Thus, the firms use compensation and rewards as tools to elicit, enhance and maintain the desired knowledge sharing behavior of employees.

Table 8 provides a synthetic comparison about the compensation and reward process in the four companies analyzed, in terms of both key features and its influence on the companies' KMC.

<Table 8 about here>

Employee Retention

All the companies provide high professional training, career opportunity and high compensation packages to attract the employees and enhance their ability and motivation for acquiring knowledge. If the company succeeds to retain their employees, then the organization benefits from the knowledge embedded within them. Besides, the organizational and dynamic culture based on individual empowerment, reciprocal engagement, and flexible benefit, encourages employees to continue to work in the same organization. These findings confirm what other researches revealed (Argote et al., 2003; Collins & Clark, 2003, Castro & Neira, 2005, Figueiredo et al., 2016; Haider et al., 2015).

Although all the companies have similar retention tools and initiatives, some of them have different retention strategies, such as Company A that emphasizes the employees' empowerment, or Company B that stresses the reward strategy and stock option, or Company C that emphasizes job

security, personal and career development, or Company D that focuses on innovative approaches and employees' aspiration.

Table 9 provides a synthetic comparison about the employee retention process in the four companies analyzed, in terms of both key features and its influence on the companies' KMC.

<Table 9 about here>

Career Development

The analysis revealed that all the companies encourage their employees towards self-choice career development and unhindered growth, and provide them with flexibility and opportunities to enhance individual learning capabilities for creating new knowledge and sharing it in different functions and divisions. This is consistent with other researches on knowledge acquisition and knowledge sharing (Currie & Kerrin, 2003; Evans, 2003; Jimenez-Jimenez & Sanz-Valle, 2012; Scarbrough, 2003). However, companies adopt different strategies and initiatives to support career development programs. Specifically, Company A focuses on "Own-choice career program" that offers the opportunity to change current job and move to another job within the same organization; Companies C and D emphasize the employees' online learning demand oriented career system, whereas Company B stresses the learnability strategy that positively affects employees' motivation. During the career development process, employees get the opportunity to interact each other to acquire and exchange knowledge, and are stimulated and motivated to develop and apply their skills, thus generating new knowledge and enhancing individual learning.

Table 10 provides a synthetic comparison about the career development process in the four companies analyzed, in terms of both key features and its influence on the companies' KMC.

<Table 10 about here>

5. Discussion

Results illustrate the existence of formal, structured and rationalized HRM systems within the companies analyzed, which motivate organizations to take care of their human factor and increase their commitment to take advantage of the knowledge within them (Obeidat et al., 2014). Results show also how the four companies have implemented their HRMP in the final aim to enhance the employees' learning, motivation, and retention, as well as to support KMC through knowledge acquisition and knowledge sharing processes, in the strategic intent to improve the organizational performance. Indeed, the effective execution of HRMP may consolidate and develop the individual knowledge and organizational experience, thus generating a positive impact on the firm's performance (Omerzel & Gulev, 2011). Moreover, by using HRMP that can enhance employees' attitude at absorbing new knowledge and sharing information, individuals can achieve the desired work behaviors and efforts contributing to innovation outcomes (Ardito & Messeni Petruzzelli, 2017). Definitely, HRMP can enhance creative and innovative behaviors of individuals, and contribute to shape a favorable context to feel motivated and committed to learning and sharing

knowledge, with the ultimate intention of applying creativity and knowledge to create new products and experiment new processes (Özbağ et al., 2013).

The analysis of the five HRMP (i.e. recruitment and selection, training and development, compensation and reward, employee retention, and career development) in each company and the cross comparison among the four organizations reveal that HRMP and KMC are strongly intertwined each other, and represent powerful tools that companies may use to implement their competitive strategies and pursue their business goals. This is in line with the research carried out by Singh & Jain (2014) who found a positive relationship between HRMP and organizational effectiveness in many sectors of developing countries, including the Indian ICT industry.

Moreover, the analysis of the case studies has shown how the traditional roles of HRMP are evolving to support also the achievement of talent management goals such as talent identification, talent development, and talent engagement (Rani & Joshi, 2012). Actually, the vision and consequent effort to scout and cultivate talents, which represent human resource assets that are capable to support current and future organizational growth, is a core function of the strategic management system of the organizations (Rani & Joshi, 2012). Moreover, talent management together with employee retention, leadership development, performance management and rewards, and recruiting, is a key area that determines a positive correlation between economic performance and HRMP (Strack et al., 2012).

Finally, by analyzing the different implementations of the HRMP, it is possible to identify a red line that connects HRM strategy with KM strategy and business strategy, in the strategic view of the organizational development. For example, recruitment and selection processes based on the level of matching between the competency profile of potential candidates and the requirements of business strategy and organizational culture represent a tangible example of this linkage. Also, career development approach based on self-training programs aligned with the company business strategy and goals is another example that highlights the virtuous connection among HRM strategy, KM strategy and business strategy.

From the study, many similarities have been identified among the companies in terms of role and support that each HRMP provides to sustain the KMC of the companies. For example, the hiring of talents is a common action implemented to acquire new knowledge and expertise within the company, or the choice of candidates that are both technically expert and endowed with knowledge sharing attitudes is another example of how recruitment and selection procedures may support the organizational KMC. By continuing, the development and reinforcement of individual learning capability or the organization of courses and project teams that are transversally participated are examples of how training and development practices may sustain knowledge acquisition and knowledge sharing respectively. Also reward system and compensation strategy may encourage and stimulate employees to acquire and share knowledge, thus generating benefit for the entire organization. Finally, the four case studies reveal a limited attention reserved to the internal and external use of social media platforms for enhancing knowledge-sharing, even if this practice is having good reactions within the Indian industries (Rao, 2015).

As for the differences, they concern the way that companies adopt to implement and make operational each HRMP, by designing specific approaches and implementing ad hoc initiatives, coherently with the organizational culture and the typology of knowledge to manage. For example,

the generation of new knowledge through career development practices is realized by using different approaches such as job rotation, continuous learning, new idea generation, or knowledge application. Of course, this depends on both the culture of the organization and the nature of the knowledge.

Definitely, by showing how HRMP enable a novel organizational approach supporting KMC, this study strengthens the argument that KM is an important driver of value creation, organizational competitiveness and success (Carneiro, 2000; Bhatt, 2001; Zack et al., 2009; Andreeva & Kianto, 2012). More specifically, HRMP can be considered as a toolbox for managers, consultants and other organizational developers engaged to improve the conditions for well-being at work. Through the implementation of successful HRMP, these people may develop continuously the capabilities to use human related resources effectively, so being able to create or sustain the organizational competitive advantage (Omerzel and Gulev, 2011).

This study provides a contribution for both researchers and practitioners. From a research-based perspective, it studies the role of HRMP in supporting KMC in Indian IT companies, which represents a not so much explored theme in the Indian context. Actually, the four case studies represent a first sample of companies to be extended in the near future, in the final aim to derive and propose a framework and a model of HRMP supporting KMC in India. Then, also the focus on India is particular significant because in 2030 this country will have a larger workforce than China, and this 'demographic dividend' is drawing a new interest in HRM in this country, both in public and private sectors (Chatterjee, 2007). Moreover, a deeper analysis on the talent management dimension could represent a further area of investigation, by considering the concept of 'talent' not restricted to only few individuals, but as an encompassing characteristic that interests all the employees, even if some have more talent than others (Armstrong, 2014).

From a practitioner point of view, the study could help HR and KM managers to motivate their employees to undertake learning processes, as well as to acquire and share knowledge resources useful for the organization to remain innovative and stay competitive. In addition, the delivery of specific courses to sensitize the management levels of organizations about the importance that the design, adoption and implementation of HRMP have for the companies' sustainability is another practical implication derived from this study. This would create a learning oriented culture and a value creation behavior within the organizations, which could be particularly effective to renew the public sector in which career development strategies are basically grounded on seniority system rather than on merit and performance (Chatterjee, 2007).

Finally, the study is also useful for managers and executives wishing to implement KM initiatives within their organizations, by inviting them to take care not only about the technological and strategic issues related to the initiative, but also to consider the important role that HRMP have in this kind of projects. Indeed, HRMP play a crucial role in implementing KM strategies (Yahya & Goh, 2002). They can be used to facilitate the dissemination of learning and assist employees in creating and using knowledge (Armstrong, 2014), as well as to align knowledge management with business directions and identify strategic knowledge gaps to be filled in (Soliman & Spooner, 2000).

6. Conclusion

Following the resource-based view of the organization (Wright et al., 2001), HRM system and routines assume a key role to ensure the business sustainability since they are unique for each organization and contribute to create specific human capital skills, as well as valuable, rare, inimitable and non-substitutable knowledge, which can be exploited into the organizational strategy (Barney et al., 2001). Indeed, successful implementation of HRMP helps organizations to learn quickly and apply the acquired knowledge faster than competitors, thus becoming more competitive. Thus, HRMP through KMC increase organizational learning that is significant for innovation and sustainable competitive advantage, especially in knowledge intensive industries (Özbağ et al., 2013). Managers and executives who operate with this mindset should consider as high priority tasks those activities related to HRMP and KMC since they have a direct connection with the market offering and thus ultimately with the business performance (Schuler et al., 2011). Consequently, companies should rely not only on the knowledge of their people but they should also implement KM systems and tools to retain that knowledge, so that future employees can capitalize on it for new exploitation.

Moreover, all the initiatives and policies addressing HRMP to consolidate and develop knowledge and competencies reveal crucial in ensuring a permanently updated workforce. Particular attention is reserved to those actions that specifically focus on nurturing and managing of talents, which play a key role in achieving the organizational goals (Daraei et al., 2014), in developing innovation and building a durable competitive advantage (Schuler et al., 2011). In such a view, HR managers are called to play an active role in introducing change within organizations, with the ultimate goal of growth and innovation (Gonsalvez, 2015).

This paper is positioned into this conceptual framework and illustrated a study about the influence of HRMP on KMC in four Indian IT companies. By adopting a multiple case study analysis grounded on primary and secondary data sources, the paper described how each company has operationalized its own set of HRMP, by highlighting the impact at level of knowledge acquisition and knowledge sharing processes. The results provide evidences about the practical implementation of HRMP and their influence on KMC of the four organizations, and offers a cross case view that highlights similarities and differences.

Although the paper suggested useful insights for both researchers and practitioners, the research presents some limitations, which may provide scope for future research. First, the study is mainly a qualitative multiple case analysis, so a more extensive research is needed to generalize the results and investigate further relationships existing between HRMP and KMC, by including both the organizational learning and the information system perspective (Gloet & Berrel, 2003). Moreover, a deep investigation on the organizational performance dimensions by adopting both financial and non-financial indicators (Al-Tit, 2016) is required to verify the existence of a link with the variable analyzed. Another area of research concerns the inclusion into the model of other KM processes, such as knowledge storage, knowledge interpretation, and above all knowledge application that complement the organizational KMC and define a more comprehensive model (Özbağ et al., 2013). Finally, also the socio cultural environment where companies are located and related contextual factors can play a mediating role in the relationships between HRMP and KMC, as well as can influence how each HRMP is implemented within companies.

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Table 1 - Relevant researches about the relationship between HRMP and KMC

Recruitment and Selection		
Knowledge Acquisition	Hiring new employees is crucial to acquire new knowledge and competencies, as well as selection process based on interviews and evidences about knowledge-creating behaviors enables firms to integrate or converge knowledge from diverse sources and stimulate innovative idea generation.	(Scarborough, 2003; Evans, 2003; Chen & Huang, 2009)
	Recruitment supported by external methods (e.g. advertising, online recruitment, employment agencies) to introduce new knowledge into the company, as well as selection to attract the best people in terms of their inherent potential.	(Fong et al., 2011; Lim & Ling, 2012; Özbağ et al., 2013; Asgharian et al., 2013)
	Recruitment of new employees and experts provides their new employers with access to specialized knowledge, experiences and insights gained at prior places of employment that can strengthen the organizational knowledge base.	(Herstad et al., 2015)
Knowledge Sharing	Profile and culture of new recruits embrace knowledge interchange among old and new members of the company.	(Fong et al., 2011)
	Newly recruited employees are likely to do the effective sharing of knowledge if they are able to take the broader perspective and appropriate attitude.	(Currie & Kerrin, 2003; Chen & Huang, 2009; Fong et al., 2011; Asgharian et al., 2013)
Training and Development		
Knowledge Acquisition	Continuous training and team-based training enhance organizational learning capability, favoring the acquisition and generation of new knowledge and skills.	(Jerez Gómez et al., 2004; Kuo, 2011)
	Training and development enhance the staff's expertise, widen their understanding and provide them with innovative skills and mindsets that encourage them to gain knowledge and stay at the forefront of their professional fields.	(Figueiredo et al., 2016; Manafi & Subramaniam, 2015; Mohanapriya & Sasikala, 2015)
	Multi-skill training has a positive impact on the degree of openness and acquisition of new knowledge, as well as on knowledge transfer.	(Cabrera & Cabrera, 2005)
Knowledge Sharing	Employees have the opportunity to exchange information and ideas during formal training sessions and development opportunities, or informal interactions.	(Ipe, 2003; Özbağ et al., 2013)
	Employees develop a higher level of self-efficacy, so that they feel more assure of their abilities and will be more likely to exchange knowledge with others.	(Cabrera & Cabrera, 2005; Kuo, 2011)
Compensation and Reward		

Knowledge Acquisition	Both tangible and intangible incentives can motivate and encourage employees to create and share new knowledge.	(Scarbrough, 2003; Chen & Huang, 2009; Özbağ et al., 2013)
	Reward system including free time to work on knowledge-building projects motivates employees to develop new knowledge.	(Mohanapriya & Sasikala, 2015)
Knowledge Sharing	Compensation and reward reinforce the motivation to improve individual and group performance through better learning, commitment and knowledge sharing.	(Camelo-Ordaz et al., 2011; Özbağ et al., 2013)
	Compensation recognizes and offers rewards for risk-taking attitude, creativity, and ability to solve problems, which stimulate knowledge sharing.	(Kuo, 2011; Manafi & Subramaniam, 2015)
Employee Retention		
Knowledge Acquisition	Professional training, career development programs, compensation and dynamic culture are very effective in employee retention; this enhances employees' ability, skills and competencies for acquiring knowledge within the organization.	(Argote et al., 2003; Haider et al., 2015)
	Employees whose performance, competencies and skills match the core business often create new ideas, improve the knowledge flows, and increase the knowledge assets of the organization.	(Figueiredo et al., 2016)
Knowledge Sharing	Retaining of employees increases the transfer of knowledge between the acquired and acquiring organizations.	(Castro & Neira, 2005)
Career Development		
Knowledge Acquisition	Career systems are important elements in shaping the flow of employees over time and the way they interact to acquire and exchange knowledge, which contribute to build 'employability'.	(Evans, 2003; Scarbrough, 2003; Rao, 2015)
	Promotions increase the mobility of employees across divisions and functions, because this is likely to foster the acquisition and dissemination of new knowledge.	(Jimenez-Jimenez & Sanz-Valle, 2012)
Knowledge Sharing	Through the career development process, junior and senior staff build up an informal network of trusted contacts that facilitates the sharing of knowledge.	(Currie & Kerrin, 2003)
	Career systems may reward individuals that promote the sharing of knowledge among wider communities of practice.	(Scarbrough, 2003)

Table 2 - Synthetic description on the Company A's HRMP and the support provided to KMC

Company's A HRMP	Distinguishing features of the company's approach	Support to Knowledge Acquisition	Support to Knowledge Sharing
Recruitment & Selection	<ul style="list-style-type: none"> • Hiring of qualified, talented and experienced software developers, mainframes administrators, web developers, and functional analysts • Internal recruitment process (promotions, transfers, job posting, employee referral) and external recruitment sources (campus agencies, online placement services) • Selection based on aptitude tests and several rounds of technical and behavioral interviews • Matching between technical knowledge and social skills of new recruits with business strategy and organizational culture 	<ul style="list-style-type: none"> • Hiring of talented people to introduce new knowledge areas • Selection criteria to reveal candidates with knowledge creating capacities 	<ul style="list-style-type: none"> • Qualified internal employees, moving within the company and attracted by stability and internal opportunities, facilitate knowledge transfer from individuals to organization • Fitness of new recruits towards knowledge sharing
Training & Development	<ul style="list-style-type: none"> • Induction / on-job / team-based training • Presence of executives to build a trustful relationship with individuals and teams • Key areas: digital architectures, big data, analytics, mobile apps • IT platform with cutting edge programs 	<ul style="list-style-type: none"> • Reinforcement of the employees' multi-skill learning capability • Development of innovative skills and mindset 	<ul style="list-style-type: none"> • Common language to foster interpersonal ties • Individual self-efficacy to be more likely to exchange knowledge with others • Individual ability to link with colleagues of different areas
Compensation & Reward	<ul style="list-style-type: none"> • Monetary and non-monetary benefits (e.g. medical insurance, interest-free loan for the house, contingency loans for marriage, illness or death allowances of a close family member) based on individual performance 	<ul style="list-style-type: none"> • Employees' motivation to learn and acquire knowledge for 	<ul style="list-style-type: none"> • Employees are encouraged to share knowledge for building and proposing innovative ideas

	<ul style="list-style-type: none"> • Bonus for top service providers (customer view) and creative contributors (innovation view) • Employee Stock Option Plan 	getting better performance	
Employee Retention	<ul style="list-style-type: none"> • Continuous updating and training, career development, and attractive compensation packages • Flexible career system • Valorization of the individual potential • Transparency of policies and processes • Lock-in programs (e.g. Engagement & Empowerment, Freedom of Association, Women empowerment, Employee Survey, Gender Equity) 	<ul style="list-style-type: none"> • Enhancement of employee's ability and motivation to learn 	<ul style="list-style-type: none"> • Preservation of the employees' knowledge that can be further shared and transferred in M&A process
Career Development	<ul style="list-style-type: none"> • Self-choice career program (transfer of job role to a different firm to facilitate knowledge acquisition) • Grade wise promotions (internal mobility across divisions and functions) • Lifecycle Leadership Programs (developing managerial competencies and soft skills to define career paths, plan mobility, and build trust) • Learning & Development initiative (upskill/reskill employees in technical domains) • e-learning modules, expert and peer learning, project trainings, webinars, outbound training, mentoring 	<ul style="list-style-type: none"> • New opportunities for continuous updating of competencies and skills • Understanding of different job positions • Increase motivation to widen the personal knowledge base 	<ul style="list-style-type: none"> • Build-up of informal networks of trusted contacts • Open discussion with colleagues and mentors

Table 3 - Synthetic description on the Company B's HRMP and the support provided to KMC

Company's B HRMP	Distinguishing features of the company's approach	Support to Knowledge Acquisition	Support to Knowledge Sharing
Recruitment & Selection	<ul style="list-style-type: none"> • Match-making the right talents with the right jobs, by preserving the individual 'learnability' (i.e. the ability of 	<ul style="list-style-type: none"> • New recruits allow the company for 	<ul style="list-style-type: none"> • New recruits facilitate the transfer of

	<p>new hires to acquire knowledge from specific experiences and transfer in new situations)</p> <ul style="list-style-type: none"> • Internal sources (e.g. former employees, retirements, internal notifications) and external sources (e.g. agencies, institutions, advertisement companies, websites, walk ins, write ins, talk ins, etc.) • Selection criteria based on levels of analytical ability, team working and leadership attitudes, communication skills and creativity, problem solving 	<p>acquiring new knowledge and competencies</p>	<p>knowledge from individuals to the company</p> <ul style="list-style-type: none"> • New recruits perfectly fit with the organizational culture to embrace knowledge interchange among old and new members of the company
<p>Training & Development</p>	<ul style="list-style-type: none"> • The new recruits are trained into the Global Education Center of the company, which offers world-class training facilities and large space for training hundreds of people at a time • Training programs designed according to the nine-pillar model for leadership development (360-degree feedback, developmental assignments, culture workshop, developmental relationships, leadership skill training, feedback incentive programs, system process learning, community empathy, and action learning) • Vertical training initiatives (e.g. technical training by Education & Research department, quality process training, managerial programs, and leadership) to help employees to update their knowledge and get the chance to exchange their creative thoughts 	<ul style="list-style-type: none"> • Training programs develop innovative skills and mindsets to gain new knowledge to perform knowledge-oriented tasks • Vertical training initiatives aim at developing creative thoughts and update the employees' knowledge background 	<ul style="list-style-type: none"> • During the training sessions, employees are encouraged to share their knowledge and learning experiences, thus favoring knowledge acquisition and knowledge exchange • Training programs develop innovative skills and mindset that favor information exchange and ideas development • Vertical training initiatives develop employees' self-efficacy so employees are more likely to share knowledge with others

Compensation & Reward	<ul style="list-style-type: none"> • Monetary and non-monetary benefits based on individual performance • Employee Stock Option Purchase Plan 	<ul style="list-style-type: none"> • Assessing individual performance stimulates and motivates employees' to learn and acquire new knowledge 	<ul style="list-style-type: none"> • Compensation and rewards as tools to elicit, enhance and maintain the employees' knowledge sharing behavior • Employee Stock Option Purchase Plan as tool that encourages people to share knowledge
Employee Retention	<ul style="list-style-type: none"> • Technological and behavioral training programs • Continuous learning, high structure compensation, incentive bonus and organizational dynamic culture • Employees' engagement strategies and tools (Corporate Channel, Intranet Sparsh, Sustainability Portal, Eco Clubs, Employee Committees, etc.) • "Fast-track" career path for high performers • Restricted stock offerings and rewards for performance plan 	<ul style="list-style-type: none"> • Enhancement of employee's ability and motivation to learn and acquire new knowledge • Employees engagement strategies have a positive impact on knowledge creation flows 	<ul style="list-style-type: none"> • Employees engagement strategies have a positive impact on knowledge flows • Retaining of employees increases the transfer of knowledge between the acquired and acquiring organizations
Career Development	<ul style="list-style-type: none"> • Continuous learning to build up the employees' career growth • Competence development programs on cutting edge technologies • Career development tools (e-learning modules, libraries, workshops, etc.) facilitate the delivery of world class products, platforms and solutions • Job rotation and promotion based on individual performances 	<ul style="list-style-type: none"> • Job rotation foster the acquisition of new knowledge and the employee's polyvalence 	<ul style="list-style-type: none"> • Job rotation and promotion facilitate mobility of employees and dissemination of knowledge across the divisions

Table 4 - Synthetic description on the Company C's HRMP and the support provided to KMC

Company's C HRMP	Distinguishing features of the company's approach	Support to Knowledge Acquisition	Support to Knowledge Sharing
Recruitment & Selection	<ul style="list-style-type: none"> • Hiring policy includes an optimal mix of fresh and experienced recruits (fresh recruits are selected from major academic institutes, whereas experienced professionals are recruited through the active involvement of sourcing agencies and interviews) 	<ul style="list-style-type: none"> • Hiring policies allow organizations for converging knowledge from various sources to generate innovative ideas and acquire new knowledge 	<ul style="list-style-type: none"> • Company identifies lateral candidates that adjust perfectly with the organizational culture and contributes to the interchange of knowledge among the old and new members
Training & Development	<ul style="list-style-type: none"> • Monthly education programs address the training requirements, also by activating collaborations with technology firms to keep participants up to date with the new technological trends • Web based training programs and access to database containing study material on different knowledge areas 	<ul style="list-style-type: none"> • Monthly education programs create awareness of new and emerging knowledge that enhance organizational learning capability and favor the arising of creative ideas • Training programs use self-assessment strategy, which helps participants to measure their learning capacity in favoring of knowledge gain and expertise enhancement 	<ul style="list-style-type: none"> • Training activities influence the employee's level of self-efficacy, which could feel more assure about their abilities to exchange innovative thinking and knowledge with colleagues and group members • Training programs are carried out in project teams, which helps to adjust the employees in a new environment and activate knowledge flows
Compensation & Reward	<ul style="list-style-type: none"> • Performance based variable paying system integrates individual and teamwork performance, thus allowing for obtaining many benefits like, trust, coordination, cooperation, and team spirit 	<ul style="list-style-type: none"> • Pay benefits motivate employees to enhance the innovative work and gain knowledge related goal 	<ul style="list-style-type: none"> • Team working improve group performance through better learning, commitment and knowledge sharing

	<ul style="list-style-type: none"> • Monetary benefits and financial bonuses stimulate employees to be aligned with the company's mission • Non-monetary benefits (e.g. house rental or car allowances, medical benefits, flexi working hours, childcare assistance) reinforce the reward strategy that integrates tangible and intangible incentives 	<ul style="list-style-type: none"> • Both tangible and intangible incentives motivate and encourage employees to create new knowledge 	<ul style="list-style-type: none"> • Both tangible and intangible incentives motivate and encourage employees to share knowledge
Employee Retention	<ul style="list-style-type: none"> • A multi-level strategy based on professional training, career development plan, learning opportunities, transparency for compensation and reward, dynamic culture, and friendly organizational environment • Performance driven environment encourages knowledge creation, recognize performance, and motivate employees to realize their potential • A number of non-work related engagement initiatives such as fun events, sports, cultural activities and volunteering for social causes 	<ul style="list-style-type: none"> • Multi-level retention strategy enhances employees' ability, skills and competencies for acquiring new knowledge 	<ul style="list-style-type: none"> • Company retains talents as they preserve the knowledge in the acquired firm and transfer it to the newly combined firm • Non-work related engagement initiatives influence positively the internal knowledge flows
Career Development	<ul style="list-style-type: none"> • Employees' career and personal development are vital for company's success and knowledge related results • Online learning initiatives and competence development schemas encourage career development through enhancing a wide variety of skills, including languages, sciences, leadership, and business, as well as technical and social knowledge, and culture 	<ul style="list-style-type: none"> • Training programs and competence development initiatives develop the employees' professional profile in technical domains and behavioral attitudes, thus favoring the acquisition of new knowledge 	<ul style="list-style-type: none"> • Rotation and mobility of employees in different sectors and locations allows for building new skills and competencies, and promotes knowledge sharing

	<ul style="list-style-type: none"> • Rotation across projects, functions and locations globally 		
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Table 5 - Synthetic description on the Company D's HRMP and the support provided to KMC

Company's D HRMP	Distinguishing features of the company's approach	Support to Knowledge Acquisition	Support to Knowledge Sharing
Recruitment & Selection	<ul style="list-style-type: none"> • Internal recruitment favors cost saving, provides stability and career opportunities within the company to its most experienced and qualified employees • External recruitment relies on external agencies and universities, which provide services to identify the best talents available • The selection procedure is organized around three main steps: written test, technical interview, and interview with human resource department, eventually integrated by writing essay and group discussions to assess individual learning and the attitude to distribute new knowledge throughout the organization 	<ul style="list-style-type: none"> • With external recruitment, the new employees bring in lot of ideas and innovation, thus enabling the introduction of new knowledge • Integration of internal and external recruitment policies allows for gathering knowledge from various sources, thus generating new knowledge and ideas 	<ul style="list-style-type: none"> • With internal recruitment, employees increase their commitment to transfer knowledge from individuals to the company
Training & Development	<ul style="list-style-type: none"> • Induction training program for new hiring people • Courses and teaching programs on technical knowledge areas (e.g. enterprise mobile application development, business analytics, big data, cloud computing, data management), but also on organizational issues and social skills 	<ul style="list-style-type: none"> • Induction training program develop individual's learning capability and knowledge, favoring the acquisition and generation of new knowledge • Courses and programs offer new learning opportunities and develop multi-skilled 	<ul style="list-style-type: none"> • Transversal courses on organizational issues and social skills help employees to develop creativity, innovation, and knowledge sharing capacity

		employees capable to gain new knowledge	
Compensation & Reward	<ul style="list-style-type: none"> • Performance bonus, commissions, awards and other forms of financial earnings and intangible incentives given on the basis of performance level and objectives (for a maximum of 8% of annual earnings) • The most common adopted allowances concern human resources, leave travel, transportation, vehicle maintenance, medical expenses, income protection, saving plans, pension programs, employees stock purchase plan 	<ul style="list-style-type: none"> • Both tangible and intangible incentives motivate and encourage employees to create new knowledge 	<ul style="list-style-type: none"> • Both tangible and intangible incentives motivate and encourage employees to share knowledge • Allowances encourage employees to work in a satisfactory way and increase knowledge flows into the organization
Employee Retention	<ul style="list-style-type: none"> • Training and development programs, compensation flexibility, and transparency on career models help to retain talents for a longer time • Programs, policies and practices that sustain respect for its employees, and a dynamic organizational culture stimulate employees to continue to stay in the company • Open door policy, speak up program, employees' opinion survey, internal communication and informational media are effective initiatives adopted by the company • HRMP and policies allow employees to meet their personal aspirations and create a conducive working environment where they feel comfortable and can foster job satisfaction 	<ul style="list-style-type: none"> • Employee retention initiatives shape a favorable context where employees are motivated to learn and enhance their knowledge 	<ul style="list-style-type: none"> • Programs, policies, practices, and a dynamic organizational culture positively impact on knowledge flows • Retaining of employees help company to increase the transfer of knowledge between the acquired and acquiring organizations
Career Development	<ul style="list-style-type: none"> • Employees have the access to a set of services and tools to manage effectively their own career (e.g. 	<ul style="list-style-type: none"> • Career development services stimulate 	<ul style="list-style-type: none"> • Employees are motivated to develop

	<p>repository of online courses on technical and managerial issues, a career management system that identifies opportunities and creates an action plan for building skills, an Academic Learning program that provides assistance to obtain additional external education to stay aligned with the company business strategies and goals)</p>	<p>employees to enhance and apply their skills thus increasing their individual learning capabilities and generating new knowledge into the company</p>	<p>knowledge flows within the organization, as well as to build an informal network of trusted contacts that facilitates the sharing of knowledge among junior and senior staff members</p>
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Table 6 - Cross case comparison about Recruitment & Selection in the four analyzed companies

	Company A	Company B	Company C	Company D
Approach and Features	<ul style="list-style-type: none"> • Internal Recruits (promotions, transfers, job posting, employee referral) • External Recruits (campus agencies, online placement services) • Selection based on aptitude test and several rounds of interviews • Matching between technical knowledge and social skills of new recruits with business strategy and organizational culture 	<ul style="list-style-type: none"> • Internal Recruits (retirements, internal notifications) • External Recruits (campus, agencies, institutions, online services) • Selection based on the employees' learnability, team working and leadership attitudes, problem solving, plus technical test to identify professional competencies and academic excellence 	<ul style="list-style-type: none"> • Fresh recruits (from universities) and experienced professional (from sourcing agencies and direct interviews) • Selection based on written test, and group discussion 	<ul style="list-style-type: none"> • Internal recruitment (from experienced and qualified employees) • External recruitment (from agencies and universities) • Selection based on written test, technical interview, group discussion, as well as on individual learning knowledge sharing attitudes
Knowledge Acquisition	<ul style="list-style-type: none"> • Hiring of talented people to introduce new knowledge areas • New recruits with knowledge creating capacities 	<ul style="list-style-type: none"> • Candidates' learnability criteria are considered crucial from the company to acquire new knowledge and competencies 	<ul style="list-style-type: none"> • Qualified and experienced persons create new knowledge 	<ul style="list-style-type: none"> • New recruits bring new knowledge • Candidates' profiles meet knowledge creating behavior
Knowledge Sharing	<ul style="list-style-type: none"> • Fitness of new recruits towards knowledge sharing • Qualified internal employees that move within the company facilitate knowledge transfer 	<ul style="list-style-type: none"> • Persons fit organizational culture to foster knowledge sharing, and embrace knowledge interchange among old and new members of the company 	<ul style="list-style-type: none"> • Professional experience fit organizational culture and knowledge sharing, and favors interchange of knowledge among the old and new members 	<ul style="list-style-type: none"> • New recruits fit with culture and knowledge sharing behavior

Table 7 - Cross case comparison about Training & Development in the four analyzed companies

	Company A	Company B	Company C	Company D
Approach and Features	<ul style="list-style-type: none"> • Induction / on-job / team based training • Multi-skill training • Six sigma model • Presence of executives in training sessions 	<ul style="list-style-type: none"> • Induction training • Global Education Center • 9-pillar model • Vertical training initiatives 	<ul style="list-style-type: none"> • Monthly education programs • Collaborations with technology firms • Web based training and database • Project team training 	<ul style="list-style-type: none"> • Induction training • Technological hands-on sessions • Transversal programs on organizational issues and social skills
Knowledge Acquisition	<ul style="list-style-type: none"> • Enhance learning capability and develop innovative skills and mindset 	<ul style="list-style-type: none"> • Reinforcements for learning capability and development of innovative ideas 	<ul style="list-style-type: none"> • New web based training helps to increase learning and knowledge creation • Monthly education programs make employees aware of new and emerging knowledge 	<ul style="list-style-type: none"> • Learning programs for gaining knowledge from different domains • Individual learning capability to acquire new knowledge
Knowledge Sharing	<ul style="list-style-type: none"> • Develop of a common language to foster interpersonal ties • Increase self-efficacy to share knowledge 	<ul style="list-style-type: none"> • Individual ability and self-efficacy to link with colleagues of different areas, and exchange information and knowledge 	<ul style="list-style-type: none"> • Training programs increase employees' self-efficacy that makes them able to exchange knowledge with colleagues • Project teams favor knowledge sharing 	<ul style="list-style-type: none"> • Transversal courses help employees to share knowledge

Table 8 - Cross case comparison about Compensation & Reward in the four analyzed companies

	Company A	Company B	Company C	Company D
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Approach and Features	<ul style="list-style-type: none"> • Monetary and non-monetary benefits • Bonus for top service providers (customer view) and creative contributors (innovation view) • Employee Stock Option 	<ul style="list-style-type: none"> • Monetary and non-monetary benefits • Employee Stock Option 	<ul style="list-style-type: none"> • Monetary and non-monetary benefit • EVA based compensation (individual and teamwork performance) 	<ul style="list-style-type: none"> • Financial and non-financial earnings • Employee Stock Option
Knowledge Acquisition	<ul style="list-style-type: none"> • Employees motivation to learn for getting better performance 	<ul style="list-style-type: none"> • Encourage and motivate employee to learn and create new knowledge 	<ul style="list-style-type: none"> • Rewarding system to motivate and generate new knowledge 	<ul style="list-style-type: none"> • Motivate for gaining new knowledge
Knowledge Sharing	<ul style="list-style-type: none"> • Encouragement of employees to share knowledge and enhance the innovation potential 	<ul style="list-style-type: none"> • Encouragement of employees to share knowledge 	<ul style="list-style-type: none"> • Team working for stimulating knowledge sharing • Reward system to encourage employees to share knowledge 	<ul style="list-style-type: none"> • Encouragement of employees to share innovative ideas • A satisfactory way of working increases knowledge flows

Table 9 - Cross case comparison about Employee Retention in the four analyzed companies

	Company A	Company B	Company C	Company D
Approach and Features	<ul style="list-style-type: none"> • Positive dynamic culture • Training, career and compensation practices • Women empowerment • Engagement of employee to develop the individual potential 	<ul style="list-style-type: none"> • Positive dynamic culture • Training, career and compensation practices • Fast track career • Restricted stock offerings and rewards 	<ul style="list-style-type: none"> • Flexible organizational culture • Performance driven environment • Work and life balance • Training, career and compensation • Non-working related engagement initiatives 	<ul style="list-style-type: none"> • Training, compensation and carrier development • Dynamic organizational culture • Transparency and development of personal aspirations

Knowledge Acquisition	<ul style="list-style-type: none"> • Enhancement of employee's ability and motivation to learn and acquire knowledge 	<ul style="list-style-type: none"> • Employees' ability to learn and acquire new knowledge • Skill match with core business to create new ideas 	<ul style="list-style-type: none"> • Multi-level retention strategy enhances employees' ability, skills and competencies for acquiring new knowledge 	<ul style="list-style-type: none"> • Favorable context where employees are motivated to learn and enhance their knowledge
Knowledge Sharing	<ul style="list-style-type: none"> • Preservation of internal knowledge to be shared 	<ul style="list-style-type: none"> • Support to internal knowledge flows • Preservation of internal knowledge to be shared 	<ul style="list-style-type: none"> • Company retains talents to preserve their knowledge • Non-working related initiatives influence positively the internal knowledge flows 	<ul style="list-style-type: none"> • Retaining of employees increases the internal transfer of knowledge • Organizational culture positively impact on knowledge flows

Table 10 - Cross case comparison about Career Development in the four analyzed companies

	Company A	Company B	Company C	Company D
Approach and Features	<ul style="list-style-type: none"> • Self-choice career • Internal mobility • Lifecycle Leadership Programs • Training, peer learning, and mentoring 	<ul style="list-style-type: none"> • Learnability strategy • Academia outreach programs • Job rotation and promotion 	<ul style="list-style-type: none"> • Online learning demand • Job rotation across projects, functions and locations globally 	<ul style="list-style-type: none"> • On demand learning programs • Career guidance and learning plans
Knowledge Acquisition	<ul style="list-style-type: none"> • Motivation to widen the personal knowledge base • New opportunities for continuous updating of competencies and skills 	<ul style="list-style-type: none"> • Job rotation and internal opportunity to build self-ability for creating new knowledge 	<ul style="list-style-type: none"> • Updating of competencies and skills to stimulate new idea generation 	<ul style="list-style-type: none"> • Stimulate employees to develop and apply their knowledge

Knowledge Sharing	<ul style="list-style-type: none"> • Open discussion with colleagues and mentors • Informal networks of trusted contacts 	<ul style="list-style-type: none"> • Work experiences in different internal job positions foster knowledge sharing 	<ul style="list-style-type: none"> • Build-up of informal networks of trusted contacts 	<ul style="list-style-type: none"> • Informal network of trusted contacts to facilitate knowledge sharing among junior and senior staff members
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Appendix A – Brief description about the five key HRMP

HRMP	Description	Author
Recruitment and selection	End-to-end process going from the identification of a job request to the attraction and screening of candidates, selection and identification of the most suitable people.	(Fong et al., 2011)
Training and development	The process by which individuals change and develop their skills, knowledge, attitudes, and behavior, to increase their abilities for future job positions.	(Kougias et al., 2013)
Compensation and reward	Cumulative financial and non-financial rewards destined to employees in return for their services.	(Lim & Ling, 2012)
Employee retention	Practices adopted to prevent employees (mainly the brightest ones that are difficult to replace) from leaving the organization.	(Jackson et al., 2014)
Career development	A formal strategy of the organization to ensure that people with the proper qualifications and experiences are available when they are needed, so avoiding the risks of the workforce obsolescence.	(Yan Zheng and Kleiner, 2001)

Appendix B – Brief description about the five key processes characterizing the KMC

KMC	Description	Author
Knowledge Acquisition	Process covering the activities of the accessibility, collecting, development and application of new knowledge, acquired from both internal and external sources, through collaborative relationships and alliances, in the aim to accumulate existing knowledge and generate new one.	(Gold & Arvind Malhotra, 2001; Parker, 2012; Bharadwaj et al., 2015)
	Process of learning from the founders of a firm (congenital learning), from the experience (experiential learning), and from other individuals and businesses (vicarious learning).	(Obeidat et al., 2014; Jashapara & Tai, 2011)
Knowledge Sharing	Process of exchange of personal and organizational knowledge, from one person to another, from persons to groups, or from one organization to other organizations.	(Jimenez-Jimenez & Sanz-Valle, 2012)
	Capacity by which employees possess abilities, motivation and opportunities to communicate and mutually transfer knowledge.	(Abdul-Jalal et al., 2013; Bharadwaj et al., 2015)