Working paper series

WP BSAD 12.02

ARE AMBIDEXTROUS INTELLECTUAL CAPITAL AND HRM NEEDED FOR AN AMBIDEXTROUS LEARNING?

Mirta Diaz Fernandez

Susana Pasamar Reyes

Ramon Valle Cabrera

(mdiafer@upo.es; spasrey@upo.es, rvalcab@upo.es)
Universidad Pablo de Olavide de Sevilla

Departamento de Organización de Empresas y Marketing

DEPARTMENT OF BUSINESS ADMINISTRATION

ARE AMBIDEXTROUS INTELLECTUAL CAPITAL AND HRM NEEDED FOR AN AMBIDEXTROUS LEARNING?

February 2012

Mirta Diaz Fernandez

Susana Pasamar Reyes

Ramón Valle Cabrera

Department of Business Administration

Universidad Pablo de Olavide

Carretera de Utrera, km. 1

41013 Seville (Spain)

Phone: + 954 34 89 77, Fax: 954 34 83 53

Abstract

Organizational learning has become increasingly important for strategic renewal. Ambidextrous organizations are specially succesfull in current environment, where firms require efficiency and adaptation to changes. Organizational ambidexterity is still in the process of developing into a new research paradigm in organizational research. In this study, we discuss arguments about the ambidextrous character, we identify the intellectual capital characteristics that better support learning types, the HRM practices adequate for the components of intellectual capital, and if the organizational intellectual capital plays any mediating role in the relationship between HRM practices and organizational learning.

Keywords: ambidextrous learning, organizational learning, intellectual capital, HRM practices

ARE AMBIDEXTROUS INTELLECTUAL CAPITAL AND HRM NEEDED FOR AN AMBIDEXTROUS LEARNING?

1. INTRODUCTION

Organizational learning has become increasingly important as a mechanism for strategic renewal (Kang and Snell, 2009). Currently, firms are required to incorporate new guidelines that must be learned as a consequence of growing competitiveness and rapid changes. In this context, organizational learning has became an important organizational issue because provide the necessary competencies to compete.

Based on March (1991) original work, most research on organizational learning focuses on two alternative approaches of organizational learning: exploration and exploitation. Exploration involves the pursuit of learning outside a firm's current knowledge domains, whereas exploitation involves the refining and deepening of a firm's existing knowledge stocks (March, 1991). Exploration and exploitation are knowledge contradictory processes because they tap different administrative routines and managerial behaviors (Lubatkin et al, 2006). They compete for firms´ scarce resources, resulting in the need for firm to manage the trade-offs between the two.

The literature suggests several issues related with both learning approaches previously mentioned: 1) if firms should choose between exploration or exploitation and, in this situation, what determinate that decision, or 2) both learning approaches should be incorporated to the organizations. In this situation a key issue regarding organizational learning is whether a firm can pursue exploitation and exploration together, that is, ambidextrous learning. The arguments point out ambidextrous organizations are that an organization that engages exclusively in exploration will ordinarily suffer from the fact that it never gains the returns of its knowledge and an organization that engages exclusively in exploitation will ordinarily suffer from obsolescence Both exploitation and exploration are complementary, "the basic problem confronting and organization is to engage in sufficient exploitation to ensure its current viability and, at the same time, to devote enough energy to exploration to ensure its future viability (Levinthal and March, 1993: 105). Furthermore, the assumption that ambidextrous learning should be tied to success is

widespread throughout the organization literature (Raisch et al., 2009). These ambidextrous organizations are aligned and efficient in their management of today's business demands while simultaneously adaptive to changes in the environment (Duncan, 1976; Tushman & O'Reilly, 1996; Gibson & Birkinshaw, 2004).

Despite of previously mentioned arguments, however, some authors as Raisch and Birkinshaw (2008) have called for more studies to fully explain a firm's explorative and exploitative search activities, justifying the need for continued research. So far, the question of how to address exploitation and exploration under increased economic crisis conditions has not found its way into the ambidexterity debate (Schimitt et al., 2010). Organizational ambidexterity is still in the process of developing into a new research paradigm in organizational theory (Raisch & Birkinshaw; 2008).

Our first objective of this paper is to contribute to explain this paradigm, through go into both types of learning in depth, and identify organizational factors needed and required for each type of learning. Specifically, we focus on how the characteristics of organizational intellectual capital support each one of the organizational learning, what is our second objective. Our analysis level is, different to Kang and Snell (2009), the structural ambidexterity where organizational units engaged in exploration are physically separated from those emphasizing exploitation (Tushman and O`Reilly, 1996). We considerer that the ambidextrous learning is not a balance issue, it is necessary to consider that different organizational areas or units should require different types of organizational learning. For this reason, our contributions of human, social and organizational capital to organizational learning will be different and each organizational unit will require a different intellectual architecture because of the exploration or exploitation learning involved.

Lastly, we try to identify HRM practices more appropriate in order to manage intellectual capital components, considerer that intellectual capital components differ according to organizational learning types. It is possible to expect that at least, two different HRM systems should be possessed by the firm, different HRM practices systems could foster different types of learning. There is few theorical evidence about the relationships between these variables, we try to fill this gap with the analysis carry out in this paper. Training and development, performance appraisal

and compensation are practices considered in previous research (Huselid et al 1997; Schuler and Jackson, 2005; Lepak and Snell, 2002) and we will considerer these practices because they could have a great explanatory character to support or influence to intellectual capital and organizational learning.

In this study, following the review of the literature, a set of propositions are formulated that represent the relationships existing between the three variables studied, the HRM, intellectual capital and organizational learning. With this work, we carry out four contributions to the existing literature. First, we discuss our arguments about the ambidextrous organizational character. Second, we identify the intellectual capital characteristics that better support learning types and, third we show the HRM practices consistent with the components of intellectual capital. Our four and last contribution is that intellectual capital plays a mediating role in the relationship between HRM practices and organizational learning.

2. AMBIDEXTROUS ORGANIZATIONS

The term ambidextrous in relation to organizations was used by Duncan at 1976, although March's (1991) landmark article has been frequently been cited as the catalyst for the current interest in the concept (Raisch & Birkinshaw, 2008). Prior literature have argued that successful organizations are ambidextrous (Duncan, 1976), they generate competitive advantages through revolutionary and evolutionary change (Tushman and O´Reilly, 1996), or exploratory and exploitative innovation (Benner and Tushman, 2003; Jansen et al., 2006).

Tushman and O´Reilly (1996) consider ambidextrous firm has the capabilities to both compete in mature markets (where cost, efficiency, and incremental innovation are critical) and develop new products and services for emerging markets (where experimentation, speed, and flexibility are critical). More specifically, they argued that an ambidextrous firm that is capable of operating simultaneously to explore and exploit is likely to achieve superior performance than firms emphasizing one at the expense of the other.

The concept of ambidexterity is also implicit in the more recent conceptualization of dynamic capabilities by Eisenhardt and Martin (2000), who suggested that overall dynamic capabilities require a blend of the two different strategic logics, namely, the logic of exploration and the logic of exploitation (p 658) likewise argued that dynamic capabilities "are rooted in streams of innovations –in simultaneously exploiting and exploring". The ability to achieve such a level of ambidexterity is said to lie at the heart of a firm's dynamic capabilities (Eisenhardt and Martin, 2000; Teece, Pisano and Shuen, 1997). In this sense Jansen et al. (2009) consider organizational ambidexterity as a dynamic capability that goes beyond moving from one competence configuration to another, but rather addresses and maintains multiple, inconsistent demands simultaneously (Gilbert, 2006). According to Katila and Ahuja (2002), exploitation of existing capabilities is often needed to explore new capabilities, and exploration of new capabilities also enhances a firm's existing knowledge base.

A firm's ability to compete is rooted in an ability to jointly pursue both orientations, that is, build on current competencies through exploitation, while developing new innovative capabilities through exploration. Firms that remain adaptive and escape the forces of environmental selection, they must exploit existing competencies and explore new ones, and more importantly, that these two facets of organizational learning are inseparable (Floyd and Lane, 2000: 155).

An exclusive focus on exploration can lead to failure if firms never collect the profits of their investments (Levinthal and March, 2003). It can also lead firms to neglect improvement and adaptation of existing routines (March, 1991) and may prevent the organization from benefiting from economies of scale (Wolfgang et al., 2009). But focusing completely on exploitation can have their negative side-effects too. An organization that engages only in exploitation will suffer from obsolescence (Levinthal and March, 2003), and are likely to find themselves trapped in suboptimal stable balance (March, 1991).

Contrary to the positions identified by Kang and Snell (2009) on the conceptualization of ambidextrous organization, we adopt a structural approach where organizational units engaged in exploration are physically separated from those emphasizing exploitation (Tushman and O`Reilly, 1996). As we remarked on the introduction, the ambidextrous learning is not a balance

issue. It is necessary to consider that different organizational areas or units should require different types of organizational learning. Nevertheless, while each unit may operate independently, they are organizationally interdependent with respect of the achievement of ambidexterity, thus the need of coordination of exploitation and exploration activities becomes essential to achieving simultaneity through the presence of a shared vision (Jansen et al, 2008; O`Reilly and Tushman, 2004, 2007), senior management team coordination (Lubatkin et al, 2006; Smith and Tushman, 2005), and systems for knowledge integration (Tiwana, 2008; Tiwana et al, 2007).

Duncan (1976) argued that ambidexterity should be managed through dual structures. In ambidextrous organizations structural differentiation results in spatially dispersed exploratory and exploitative units at different locations (Benner and Tushman, 2003; Tushman and O´Reilly, 1996). Structural separation would be necessary because the two sets of activities are so different that they cannot effectively coexist. The mindsets and organizational routines needed for exploration are radically different from those needed for exploitation, making the simultaneous pursuit of both all but impossible (Gupta et al., 2006).

Following March's (1991) article, exploitation and exploration are two fundamentally different learning activities between firms divide their attention and resources. Exploitation enables organizations to engage in refinement, implementation, efficiency and production, while exploration implements adaptive mechanisms that require experimentation, variation, search and innovation. Exploitation is defined as the refinement and extension of existing competencies, technologies and paradigms exhibiting returns that are positive, proximate and predictable. In contrast, exploration refers to the tendency of a firm to invest resources to acquire entirely new knowledge, skills and process, to attain flexibility and novelty in product innovation through increased variation and experimentation (Atauahene-Gima, 2005). The returns associated with exploration are more variable and distant in time, while the returns associated with exploitation are more certain and closer in time.

Prior studies such as Benner and Tushman (2003), Danneels (2002), and He and Wong (2004) have explicitly embraced the idea that exploratory innovations are designed to meet the needs of

emerging customers or markets. Exploratory innovations require new knowledge or departure from existing knowledge and the pursuit of new technological and customer competences (Danneels, 2002; Jansen et al, 2006). They offer new designs, demand new systems and procedures, and attract new sets of customers through new channels of distribution.

Conversely, exploitative innovations meet the needs of existing customers or markets (Benner and Tushman, 2003, He and Wong, 2004). They deepen existing knowledge by refining established technological and customer competences (Danneels, 2002; Jansen et al, 2006). Exploitative innovations improve established designs by applying existing skills and strengthening customer ties through and increase in the effectiveness of existing distribution channels.

Therefore, the core business units are given responsibility for creating alignment with the existing products and markets, and the R&D department and business development groups are given the job of prospecting new markets, developing new technologies and keeping track of emerging industry tends (Duncan, 1976). Exploitation enables organizations to engage in refinement, implementation, efficiency in production, while exploration implements adaptive mechanisms that require experimentation, variation, and search in innovation.

These arguments generate the following propositions:

P1. The ambidextrous nature of organizations results in spatially dispersed exploratory and exploitative units at different locations.

P1.1 Production units are likely to focus on exploitation learning

P1.2 R&D units are likely to focus on exploration learning

Integration between units has been cited as the main challenge of structural separation. Operating units and innovative units have often been described as functioning completely separately from one another, as if they were autonomous companies. According to this perspective, some authors propose coordination between units has thus been limited to a few top managers at the corporate

level (Raisch, 2008). Against conventional insights which focus as top management as integrators, Tushman et al. (2003) have remarked the importance of cross-units interactions called "targeted structural linkages". While selected mechanisms like senior team integration or cross-functional interfaces have been discussed, the more informal integration mechanisms should not be underestimated (Jansen et al., 2009). This research will consider the existence of the three kind of mechanisms: top management as integrators, cross-units interactions and finally the more informal integration contacts.

3. INTELLECTUAL CAPITAL

Researchers pointed out the links between a firm's orientation towards organizational learning and its knowledge stocks (Cohen and Levinthal, 1990). Intellectual capital is defined as the sum of all knowledge firms utilize for competitive advantage (Youndt et al., 2004). Considering who accumulates and distributes knowledge (individuals, organizational structures or relationships and networks), previous research identified three aspects of intellectual capital: human, organizational and social capital. Human capital is defined as the knowledge, skills, and abilities residing with and utilized by individuals (Schultz, 1961). Organizational capital is the institutionalized knowledge and codified experience residing within and utilized through databases, patents, manuals, structures, systems and processes (Youndt et al, 2004). And finally, social capital is defined as the knowledge embedded within, available through and utilized by interactions among individuals and their networks of interrelationships (Nahapiet and Ghoshal, 1998).

The conceptual separation of these three aspects of intellectual capital show how each aspect accumulates and distributes knowledge differently, either through individuals, organizational structures, processes and systems or relationships and networks (Subramaniam and Youndt, 2005). Youndt et al (2004) point out that individual learning is a necessary but insufficient condition for organizational learning (Argyris and Schon, 1978, p20). In order for organizational level learning to occur, individual must exchange and diffuse shared insights, knowledge, and mental models (Senge, 1990; Stata, 1989); that is, use their social capital. And ultimately, much of the knowledge individuals create through human capital and diffuse through social capital

becomes codified and institutionalized in organizational databases, routines, systems, manuals and the like, thereby turning into organizational capital (Hall, 1992; Itami, 1987; Walsh and Ungson, 1991).

Inherent differences in the key attributes of human, organizational, and social capital cause each o them to have a particular reinforcing or transforming on knowledge (Subramanian & Youndt, 2005) intellectual capital to organizational learning, each organizational unit would require a different intellectual architecture because of the exploration or exploitation learning involved. These arguments lead to the following prediction:

P.2.: Organizational units differ in terms of intellectual capital structure depending on the type of learning that they require.

3.1 Organizational learning and Human Capital

Considering the distinction made by Kang and Snell (2009) between generalist and specialist human capital and the knowledge involved, it seems reasonable to posit that each type of human capital may be related to organizational learning.

Exploration results from a relatively broad and generalized search to expand the firm's knowledge domains into unfamiliar or novel areas and/or to establish new combinatory mechanisms. Because generalist human capital tends to be less entrenched in a particular perspective and have the potential adaptability to discover, comprehend, combine and apply new knowledge in the future, they are more predisposed to exploratory learning (Kang & Snell, 2009).

In contrast, exploitation makes a firm to continue working on familiar areas and proximate to existing solutions rather than obtaining novel, emerging and pioneering Knowledge (Kang & Snell, 2009; March, 1991). Specialist human capital tends to be more effective for acquiring and assimilating new, in-depth knowledge, and is likely to focus on exploitation. Since exploitation requires a deeper knowledge already possessed by the individual to contribute to its improvement, specialists are best positioned to exploitation learning.

These considerations predict:

P.2.1.: Generalist human capital is likely to focus on exploitation

P.2.2: Specialist human capital is likely to focus on exploration.

3.2 Organizational learning and Organizational capital

There is no organizational learning without individual learning, and individual learning is necessary but insufficient condition for organizational learning (Argyris & Schon, 1978). Organizational capital is the institutionalized knowledge and codified experience residing within and used through databases, patents, manuals, structures, systems and processes (Youndt et al., 2004). Organizational capital can be classified into two alternative forms: mechanistic and organic (Burns & Stalker, 1961), which have different effects on acquisition and integration of knowledge in the firm (Kang & Snell, 2009).

Mechanistic organizational capital understood as standardized process and structures, detailed routines and rule following cultures helps to establish a common frame of reference among employees (Crossan et al., 1999). The accumulated knowledge embedded in mechanistic organizational structures is perceived as more reliable, robust and legitimized (Katila & Ahuja, 2002), and it tends to exploitation because organizations will solve their problems considering decision sets that have previously proved useful (Subramanian & Youndt, 2005).

On the contrary, organic organizational capital is more loosely connected to precedent, rules and traditional expectations about work (Eisenhardt & Sull, 2001; Daft & Weick, 1984). Organic organizational capital provides opportunities and autonomy for individual and groups to experiment with the way they work and the way they organize the work. Organizations will be in a better position to search and absorb new information, as well as integrate new knowledge associated with exploratory learning (Kang & Snell, 2009).

In general, exploration is related to organic structures, loosely coupled systems, path breaking, improvisation, autonomy and chaos, and emerging markets and technologies. In contrast,

exploitation is associated with mechanistic structures, tightly coupled systems, path dependence, routinization, control and bureaucracy, and stable markets and technologies (Ancona et al, 2001; Brown and Eisenhardt, 1998; Lewin et al, 1999).

Accordingly to these considerations, we propose the following propositions:

P.2.3.: Mechanistic organizational capital is likely to focus on exploitation

P2.4.: Organic organizational capital is likely to focus on exploration

3.3. Organizational learning and Social Capital

Finally, the third aspect of intellectual capital identified by literature is social capital. While knowledge stocks provide the base for firms' core competencies knowledge flow are also necessary for facilitating organizational learning by expanding, refining and modifying its knowledge stocks. Managing current knowledge stocks may be important, but managing knowledge flows may be equally if not more important (Kang et al., 2007).

Social capital is defined as the knowledge embedded within, available through and used by interactions among individuals and their networks of interrelationships (Nahapiel & Goshal, 1998). Social capital describes patterns of relationships among employees and serves as a critical mechanism for Knowledge exchange and combination in the firm (Kang & Snell, 2009). Two configurations of social capital are identified, called cooperative and entrepreneurial, that are respectively aligned with exploitation and exploration (Kang et al., 2007).

The cooperative relational archetype is defined as a tightly coupled social system that includes strong and dense network connections, generalized or institutional trust based on membership in the social unit, and shared understanding of how knowledge can be combined (Kang & Snell,

2009). This configuration supposes an efficient acquisition and integration of fine-grained and in-depth knowledge, facilitating exploitation (Kang et al., 2007).

The entrepreneurial relational archetype is more loosely connected to social systems, and facilitates the flexibility needed to expand, acquire and absorb new knowledge, thereby helping to pursue exploratory learning.

As a consequence of these arguments, we can propose the following propositions:

P.2.5.: Cooperative social capital is likely to focus on exploitation

P.2.6.: Entrepreneurial social capital is likely to focus on exploration

4. HRM AND INTELLECTUAL CAPITAL

Since intellectual capital is a key resource for organizational success, its creation, accumulation and re-creation should be the major concern for the firm. In this area, human resource management (HRM) plays a key role in facilitating the contribution of the employees (Pfeffer, 1994). Several authors point out the HRM system of attracting, selecting, deploying, retaining and transforming valuable human resources is gaining importance in the process of creating, accumulating and creating intellectual capital (Lepak and Snell, 2002; Schuler and Jackson, 2005).

HRM provides many valuable tools necessary to manage, develop, and transform human resources into human capital with an attempt to ensure high degree of functional integration in order to implement the overall corporate mission. Specifically, HRM plays an important role in developing a firm's unique human capital (Lepak and Snell, 1999). Also, increasing evidence shows that HRM can be designed to influence social capital (Kang, Morris and Snell, 2007; Leana and Van Buren, 1999). HRM helps to institutionalize a firm's know-how, diffuse key features of its culture like core values and reinforce shared interpretations, and thus, influences

organizational capital (Wright, Dunford and Snell, 2001). Hiring, deploying and training human capital are surely important aspects of building and leveraging capabilities. Sourcing, sharing, combining, and integrating knowledge are processes that increase firm-level capabilities or competencies (Minbaeva, Foss and Snell, 2009). So, there are reasons to analyze how HRM practices foster the development and acquisition of organizational intellectual capital.

Previous research suggests two different alternatives of intellectual capital that facilitate ambidextrous learning. One HR configuration combines job or function-based development, ILM-based employee relations, and error embracing performance/control systems. The other HR configuration combines skill-based development, market-based employee relations, and error avoiding performance/control systems (Kang and Snell, 2009). Following Kang and Snell (2009) we try to study some HRM activities that foster intellectual capital components, that is, human, organizational, and social capital. In order to gain this aim, first, we identificated the HRM practices most relevant for manage HR and, specifically, to acquire and develop intellectual capital.

Our objective is to identify which HRM practices are more appropriate for managing human, organizational, and social capital respectively. Training and development, compensation, and performance appraisal are the most relevant practices considered in previous research (Huselid et al 1997; Schuler and Jackson, 2005). We try to identify how HRM practices would leverage human, organizational, and social capital respectively. This leads to our third proposition:

P.3.: HRM practices of training and development, compensation and performance appraisal should influence differently the intellectual capital components, that is, human, organizational, and social capital.

4.1 HRM and human capital

HRM is fundamentally concerned with managing human capital; it focuses on all firms´ basic knowledge assets. Generally, recruitment, selection, placement, and retention mechanisms are fundamental aspects of building and maintaining stocks of knowledge that firms can deploy to

enhance performance and perhaps gain competitive advantages. We focus on training and develop as a strategic tool in order to gain and maintain the required stock of human capital in the firm.

As we noted in the previous section, following Kang and Snell (2009), we considered specialist and generalist human capital. Specialists typically have knowledge that is deeper, localized, embedded, and invested within particular knowledge domains. While generalists tend to be multi skilled with a more versatile repertoire of capabilities that can be used across alternative situations

Regarding human capital, previous research show that training and develop are the most relevant HRM practices in order to obtain an adequate human capital for firm competitiveness. Related to training and develop, organizational units that focus on developing generalist human capital tend to use extensive training to focus on future skill requirements beyond current job requirements while organizational units develop specialist human capital through intensive training to focus on the improvement of current job-related skills (Bae and Lawler, 2000; Guthrie, 2001). Thus, we propose the following propositions:

P.3.1. Training and develop on future skills should encourage generalist human capital

P.3.2. Training and develop on job-related skills should encourage specialist human capital

4.2. HRM and organizational capital

Previously, we noted that for organizational capital we follow Kang and Snell (2009) as well for the other intellectual capital components. These authors proposed two types of organizational capital: mechanistic organizational capital, that emphasizes the conformity of members to established rules or social norms, and organic organizational capital that encourages organizational members to proactively create, shape, and respond to established cultural values and norms. Kang and Snell (2009) classification of organizational capital point out the need of observance the compliance of different types of organizational aims, like achivement the established reules or following cultural norms. So, we considered performance appraisal as the

HR practices specially usefull in order to motivate people to achivement different kinds of firm objectives.

Mechanistic organizational capital assumes that firms accumulate relatively complete information about "cause-effect relations" in organizational activities. An important issue is to ensure conformance of individual to present standards, eliminate uncertainty, and increase predictability of individual behaviours at work, that is, developmental-based evaluation, or developmental appraisal systems. Accordingly, performance/control systems targeted towards "error avoidance" that uphold specific provisions regarding work protocols helps firms to effectively implement and reinforce mechanistic organizational capital

Organic organizational capital encourages individual to develop a variety of behavioural repertories and to flexibly adjust them to perceived situations. These processes can be supported by "error embracing" performance/control systems that acknowledge mistakes as a natural by-product of learning. Error embracing systems allow individuals to make decisions, set their own performance goals, and make changes in the ways they perform their jobs (Lepak and Snell, 1999). Those HR practices are behaviour-based evaluation and rewards, specific behavioural appraisal systems and performance programme imposed top-down. Thus, we propose the following propositions:

P.3.3. Developmental performance appraisal should encourage mechanistic organizational capital

P.3.4. Behavioural performance appraisal should encourage organic organizational capital

4.3. HRM and social capital

Previous research show that HRM practices of training and develop, job design, performance appraisal, compensation, career development, and the like, all prove instrumental for enhancing the flow of knowledge –that is, its acquisition, transfer, and integration within the organization (Cabrera and Cabrera, 2005; Minbaeva, Pederson, Björkman, Fey and Park, 2003). Now we focus

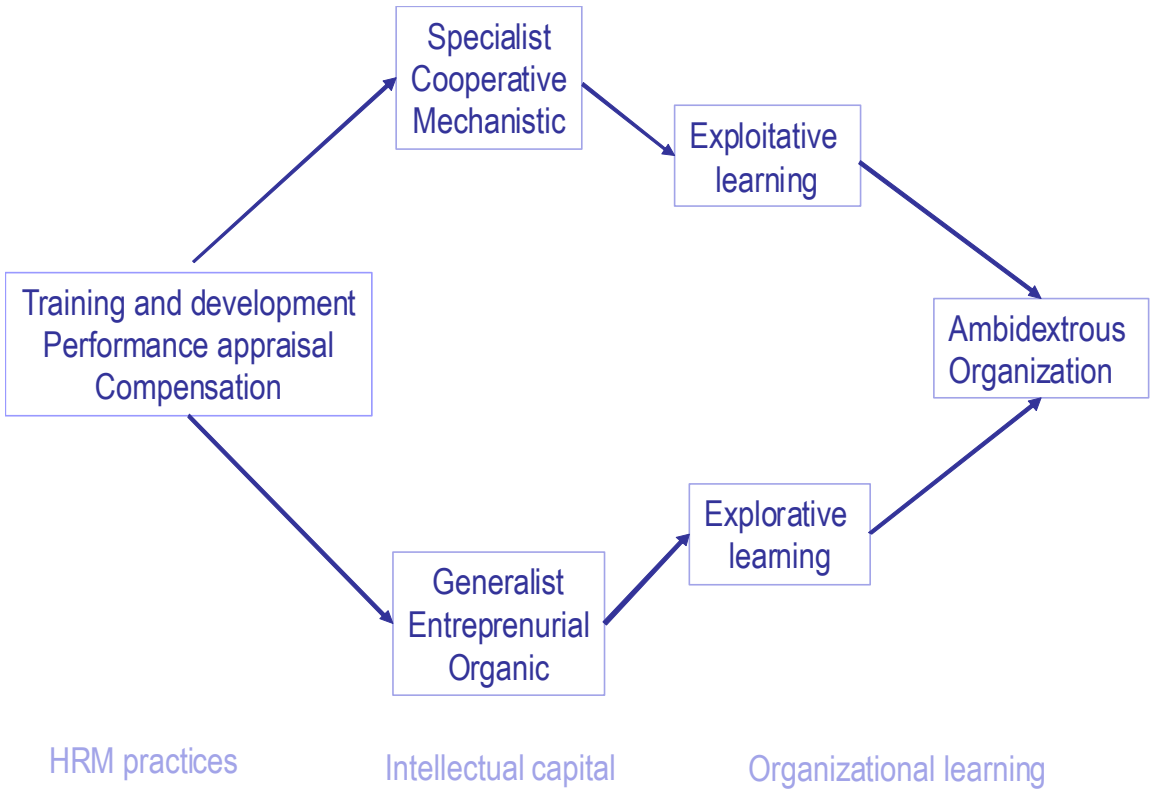
on compensation because this HR practice can motivate employees in order to acquire and share knowledge and, thus, encourage diferent types of relationships between people.

As noted early, we used two alternative types of social capital, cooperative and entrepreneurial identified by Kang et al (2007). Cooperative social capital includes strong and dense network connections, generalized or institutional trust based on membership in the social unit, and shared understanding of how knowledge can be combined. Specifically, cooperative social capital should be foster using job-based compensation, and egalitarian pay structures establish a set of norm, rules and procedures that reduce agency costs and the need for monitoring (Kang and Snell, 2009).

Entrepreneurial social capital is characterized by weak and non-redundant relational networks, resilient dyadic trust that is developed through direct personal experiences, and common component knowledge that reflects shared technical, professional, or operational knowledge. Dyadic trust would not develop unless the results obtained through joint contributions of individuals at work were appropriately rewarded. Skill-based compensation reinforce individuals´ motives to build varied relationships while discouraging social loafing, that is considered an inherent problem in job-based pay (Leana and Van Buren, 1999). Such benefits of skill-based compensation are best leveraged when focused on the acquisition of knowledge or new ideas. We propose the following propositions:

P.3.5. Job-based pay should encourage cooperative social capital

P.3.6. Skill-based pay should encourage entrepreneurial social capital



5. **CONCLUSIONS**

In this study, following the review of the literature, a set of propositions are formulated that represent the relationships existing between the three variables studied, the HRM, intellectual capital and organizational learning. Our theoretical findings show, for each intellectual capital aspects the most adequate set of HRM practices and how human, social and organizational capital contribute to explorative, exploitative or ambidextrous learning. Therefore, another contribution is that intellectual capital plays a mediating role in the relationship between HRM practices and organizational learning.

Regarding the ambidextrous nature of organizations, we argued that is manifested not in the dual presence of both types of learning in the same unit of analysis, but in the existence of units focused on exploitation or exploration. A second aspect, and linked to the previous one, is that these differences in learning are consequence of the functions and activities performed by the organizational units. Moreover, the ambidextrous nature of the organization depends on the existence of these different units focusing on diverse learning, but also promoting the connection between them.

A second set of findings is related to the different composition of CI required by organizational units according to their activity and the kind of learning involved. We argue that there is a better design of CI composition depending on the learning orientation. Learning is determined by the composition of CI organizational given that exploitation and exploration requires a different IC architecture

Our third contribution is related with HRM and its direct effects on intellectual capital components. The review of the literature shows that different HRM practices are needed, specifically we analyzed different orientation of training and develop, performance appraisal and compensation, depending of the intellectual capital required by the organization. The contingent character of the HRM practices is showed in the relationship with the required intellectual capital. So, we considered that there is not a HRM best practices model, but different HRM best practices models inside of an organization.

The fourth theoretical contribution of this study it is the intellectual capital mediating role in the relationship between HRM practices and learning. The direct effects of HRM practices on learning are mediated by the intellectual capital possessed by the organizational unit or department.

Besides these theoretical contributions, there are several practical conclusions in this paper. We point out the required considerations in order to gain a best fit between HRM, intellectual capital and learning in different organizational units. Another contribution is not considered an only one

HRM practices model for all organizational departments, but different HRM models in different organizational units.

REFERENCES

Ancona, D. G., Goodman, P. S., Lawrence, B. S., and Tushman, M. L. (2001). Time: A new research lens. Academy of Management. Academy of Management Review, 26(4), 645.

Argyris, C, and Schön, D. (1978) Organizational learning: A theory of action perspective, Reading, Mass: Addison Wesley.

Atuaene-Gima, K. A. (2005). Resolving the capability-rigidity paradox in new product innovation. Journal of Marketing, 69(4), 61.

Benner, M. J., and Tushman, M. L. (2003). Exploitation, exploration, and process management: The productivity dilemma revisited. Academy of Management. Academy of Management Review, 28(2), 238

Brown, S. L. and Eisenhardt, K. M., (1998). Competing on the Edge: Strategy as Structured Chaos, Harvard Business School Press: Boston.

Burns, T., and G. Stalker. 1961. The Management of Innovation. London, U.K.: Tavistock.

Cabrera, E. F., and Cabrera, A. (2005). Fostering knowledge sharing through people management practices. The International Journal of Human Resource Management, 16(5), 720

Cohen W M and Levinthal D (1990), "Absorptive Capacity: A New Perspective on Learning and Innovation", Administrative Science Quarterly, Vol. 35, No. 1, pp. 128-152.

Crossan, M. M., Lane, H. W, and White, R. E. (1999). An organizational learning framework: From intuition to institution. Academy of Management Review, 24(3), 522-537.

Daft, R.L. and Weick, K.L. (1984), Toward a model of organizations as interpretation systems, Academy of Management Review, Vol. 9 No. 2, pp. 284-95.

Danneels, E. (2002). The dynamics of product innovation and firm competences, Strategic Management Journal, Vol. 23, pp. 1095-121.

Duncan, R.B. (1976). The ambidextrous organizations: designing dual structures for innovation, in Kilmann, R.H., Pondy, L.R. and Slevin, D.P. (Eds), The Management of Organization Design, Strategies and Implementation, Vol. 1, Elsevier North-Holland, New York, NY.

Eisenhardt, K.M. and Sull, D.N. (2001). Strategy as simple rules, Harvard Business Review, Vol. 79 No. 1, pp. 107-16.

Eisenhardt K.M., and Martin, J.A. (2000), "Dynamic Capabilities: What are They?", Strategic Management Journal, Vol. 21, Nos. 10 & 11, pp. 1105-1121.

Floyd, S.W. and Lane, P.J. (2000). Strategizing throughout the organization: management role conflicitng in strategic renewal, Academy of Management Review, Vol. 25, pp. 154-77.

Gibson, C.B., and Birkinshaw, J. (2004). The antecedents, consequences, and mediating role of organizational ambidexterity, Academy of Management Journal, Vol. 47, pp. 209-26.

Gilbert, C. G. (2006). Change in the presence of residual fit: Can competing frames coexist?, Organization Science 17, 150-167

Gupta, A. K., Smith, K. G., and Shalley, C. E. (2006). The interplay between exploration and exploitation. Academy of Management Journal, 49(4), 693.

Guttel, W. H. G., and Konlechner, S. W. (2009). Continuously hanging by a thread: Managing contextually ambidextrous organizations. Schmalenbach Business Review : ZFBF, 61(2), 150.

Hall, R. (1992). The strategic analysis of intangible resources. Strategic Management Journal, 13(2), 135-144.

He, Z., and Wong, P. (2004). Exploration and exploitation: an empirical test of the ambidexterity hypothesis, Organization Science, Vol. 15 No. 4, pp. 481-94.

Huselid, M. A., Jackson, S. E. and Schuler, R. S. (1997). Technical and strategic human resource management effectiveness as determinants of firm performance. Academy of Management Journal, 40, 171-88.

Itami, H. (1987). Mobilizing invisible assets. Cambridge, MA: Harvard University Press.

Jansen, J. J. P., Tempelaar, M. P., Bosch, F. A. J. v. d., and Volberda, H. W. (2009). Structural differentiation and ambidexterity: The mediating role of integration mechanisms. Organization Science, 20(4), 797.

Jansen, J.J.P., van den Bosch, F.A.J. and Volberda, H.W. (2006), Exploratory innovation, exploitative innovation, and performance: effects of organizational antecedents and environmental moderators, Management Science, Vol. 52 No. 11, pp. 1661-74.

Kang, S. C., and Snell, S. A. (2009). Intellectual capital architectures and ambidextrous learning: A framework for human resource management. The Journal of Management Studies, 46(1), 65.

Katila, R., and Ahuja, G. (2002). Something old, something new: A longitudinal study of search behavior and new product introduction. Academy of Management Journal, 45(6), 1183.

Lepak, D. P., and Snell, S. A. (2002). Examining the human resource architecture: The relationships among human capital, employment, and human resource configurations. Journal of Management, 28(4), 517.

Levinthal, D.A. and March, J.G. (1993), The myopia of learning, Strategic Management Journal, Vol. 14, pp. 95-112.

Lewin, A. Y., Long, C. P., and Carroll, T. N. 1999. The coevolution of new organizational forms. Organization Science , 10 (5): 535-550.

Lubatkin, M. H., Simsek, Z., Ling, Y., and Veiga, J. F. (2006). Ambidexterity and performance in small-to medium-sized firms: The pivotal role of top management team behavioral integration. Journal of Management, 32(5), 646.

March, J.G. (1991), Exploration and exploitation in organizational learning, Organization Science, Vol. 2, pp. 71-87.

Minbaeva, D., Foss, N. and Snell, S. (2009), Bringing the knowledge perspective into HRM. Human Resource Management, 48: 477–483..

Minbaeba, D., Pedersen, T., Bjorkman, I., Fey, C.F. and Park, D. M. (2003). MNC knowledge transfer, subsidiary absorptive capacity, and HRM. Journal of International Business Studies, 34(6), 586.

Nahapiet, J., and Ghoshal, S. (1998). Social Capital, Intellectual Capital and the Organizational Advantage, Academy of Management Review, Vol. 23, No. 2, pp. 242-266.

O'Reilly, C. A. and Tushman, M.L. (2008), Ambidexterity as a dynamic capability: Resolving the innovator's dilemma, Research in Organizational Behavior 28, 185-206.

O'Reilly, C. A., & Tushman, M. L. (2004). The ambidextrous organization. Harvard Business Review, 82, 74-81.

Pfeffer, J. (1994). “Competitive advantage through people: Unleashing the power of the work force”. Boston: Harvard Business School Press, 1994.

Raisch, S., Birkinshaw, J., Probst, G., Tushman, M.L. (2009). Organizational Ambidexterity: Balancing Exploitation and Exploration for Sustained Performance.Organization Science, Vol. 20 Issue 4, p685-695, 11p, 1 Chart

Raisch, S. and Birkinshaw, J. (2008). Organizational ambidexterity: Antecedents, outcomes, and moderators, Journal of Management 34, 375-409.

Schmitt, A., Probst, G., and Tushman, M. L. (2010). M@n@gement in times of economic crisis: Insights into organizational ambidexterity. *M@n@gement, 13*(3), 128.

Schuler, R.S., and Jackson, S.E. (2005). A quarter-century review of human resource management in the U.S.: The growth in importance of the international perspective. Management Revue, 16(1), 11-35.

Schultz, T. W. (1961). Investment in human capital. American Economic Reviews, 51(1), 1-17.

Senge, P. (1990). The fifth discipline: The art and practice of the learningorganization. London: Random House.

Simsek, Z., Heavey, C., Veiga, J. F., and Souder, D. (2009). A typology for aligning organizational ambidexterity's conceptualizations, antecedents, and outcomes. The Journal of Management Studies, 46(5), 864.

Smith, W. and Tushman, M. (2005), Managing strategic contradictions: a top management model for managing innovation streams, Organization Science, Vol. 16, pp. 522-36.

Stata, R. (1989). Organizational learning: The key to management innovation. Sloan Management Review, 30(3), 63-74.

Subramaniam, M. and Youndt, M.A. (2005), "The influence of intellectual capital on the types of innovative capabilities", Academy of Management Journal, Vol. 48, pp. 450-63.

Teece, D. J.,Pisano, and G.,Shuen, A., Dynamic Capabilities and Strategic Management, Strategic Management Journal, 18, 7, 1997, pp. 509-533.

Tiwana, A., amd Keil, M. (2007). Does peripheral knowledge complement control? An empirical test in technology outsourcing alliances. Strategic Management Journal, 28(6), 623.

Tiwana, A., and Keil, M. (2007). Does peripheral knowledge complement control? an empirical test in technology outsourcing alliances. Strategic Management Journal, 28(6), 623.

Tushman, M.L. and O'Reilly, C.A. (1996). Ambidextrous organizations: managing evolutionary and revolutionary change, California Management Review, Vol. 38, pp. 8-29.

Tushman, M.L., Smith, W.K., Wood, R., Westerman, G. and O'Reilly, C.A. III. (2003). Innovation streams and ambidextrous organizational designs: On building dynamic capabilities. (Working paper), Harvard University.

Walsh J P and Ungson G R (1991), Organizational Memory, Academy of Management Review, Vol. 16, No. 1, pp. 57-91.

Youndt, M. A., and Snell, S. A. (2004). Human resource configurations, intellectual capital, and organizational performance: JMI. Journal of Managerial Issues, 16(3), 337.