Knowledge Resource Configurations and Organizational Capability: An Empirical Examination of HR Subunits in the Multinational Corporation*

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ABSTRACT
Building on the organizational capabilities literature and theories of the multinational enterprise, this paper develops and tests a framework that examines the relationship between knowledge resource configurations and organizational capabilities in MNC human resource subunits. Looking at 187 subunits from 20 MNCs, findings show that knowledge resources vary in their usefulness for creating, sharing, and implementing human resource management practices. In particular, while certain resources may help in the development of one capability, they may harm the development of another. Implications are that organizations need to invest differently in resources depending upon the desired capability.
INTRODUCTION

Few will argue against the premise that human resource (HR) issues are critical in today’s multinational corporation (MNC). A wide range of factors—that varies from global sourcing and off-shoring to regional trade agreements and labor standards to cultural differences and sustainability to strategic alliances and innovation—all point to the vital nature of human resource management in a global economy. In fact, some observers have suggested that how the workforce is managed may be among the strongest predictors of successful versus unsuccessful MNCs (Carpenter, Sanders, Gregersen, 2001; Doz & Prahalad, 1986; Evans, Pucik, & Barsoux, 2002; Gong, 2003).

Much of the literature on international HR parallels the global-local debate that characterizes organizational and strategic level decisions; that is, which practices should be globally integrated and which should be locally adapted (e.g., Brewster, Sparrow, & Harris, 2005; Fey & Bjorkman, 2001; Rosenzweig & Nohria, 1994; Schuler, Dowling, & DeCieri, 1993; Taylor, Beechler, & Napier, 1996; DeCieri & Dowling, 2006; Tung & Havlovic, 1996). For example, Miller, Hom, and Gomez-Mejia (2001) found that profit sharing and savings plans lowered turnover in auto plants in Mexico and that this was likely due to strong collectivism in the local culture. As a result, firms need to be cautious of which practices are generated locally and which are shared and implemented globally.

Related to this, one area of research that has received relatively less emphasis is not which practices should be used to create competitiveness, but rather how organizations develop the capabilities to generate new management practices locally and at the same time share and implement them globally. A focus on these specific capabilities and their underlying mechanisms helps us to better understand how HR as a function might “generate and implement the complementary organizational and managerial innovations needed to achieve and sustain
competitiveness” (Teece, 2007: 1321). This focus also helps us contribute to the organizational capabilities literature, which tends to neglect the underlying differences in capabilities critical to theories of the multinational enterprise (Zaheer, 1995). As a result, the question we ask in this paper is what are the underlying mechanisms to an HR subunit’s capabilities to generate practices in accordance with the local environment, share practices with other peer subunits across borders, and implement those practices into their existing operations?

We address this question utilizing the model discussed below. To organize our discussion, we break the paper down into three parts: First, we discuss how people management issues in MNCs create particular relevance to resource-based views (RBV) and knowledge-based views (KBV) of the firm (Penrose, 1959; Grant, 1996). We extend the theoretical development to address the capability to generate practices locally, share or transfer them globally, and implement them within the subunit. Second, we focus specifically on subsidiary-level knowledge found in local and international experience, cross-border peer unit contacts, shared vision, and codifying systems as key resources that may influence the capacity of firms to generate, share, and implement HR practices. Third, we test this framework using a sample of 187 geographically diverse HR subunits from 20 MNCs. Finally, we discuss the results of our analysis, and draw inferences for future research and practice.

**THEORY DEVELOPMENT**

International HR scholars have pointed out that the knowledge-based economy is requiring HR to be a primary contributor to a firm’s competitive advantage through more fluid, locally adaptable, and globally integrated means of managing people (e.g., Sparrow & Brewster, 2006; Stahl & Bjorkman, 2006; Schuler & Tarique, 2007). To do this, we must peer inside the HR function to understand how geographically dispersed subunits can develop capabilities requisite to their environment—as expressed in theories of the multinational enterprise (Pitelis &
Verbeke, 2007). Understanding some of the key mechanisms underlying these capabilities within the HR function, we better see how firms can create value by adapting to both local and global practice demands (Lengnick-Hall & Lengnick-Hall, 2005).

In some ways, the issue of global versus local practice is at the heart of competitive advantage in multinational corporations (Fenton-O’Creevy, Gooderham, & Nordhaug, 2008). The resource-based view (RBV) of the firm, for example, is based on the premises that resources are: (1) distributed heterogeneously and (2) remain imperfectly mobile over time. Heterogeneity establishes non-equivalence, and the possibility for differential value creation. Immobility prevents imitation, duplication, or appropriation by other firms thereby conferring a sustainable advantage. In the context of MNCs, the premises of resource heterogeneity and immobility have particular relevance.

**Resource Heterogeneity and Localized HR Practices**

While the concept of resource heterogeneity typically refers to differences across firms, MNCs are unique in that they may potentially possess resource heterogeneity *within* the firm as well. This is especially important with regard to the tension between global efficiency and local responsiveness. Because MNCs operate in multiple environments, they often develop local HR practices that reflect unique circumstances, geographical divides, local requirements, laws, cultures, and the like. In some respects, creating or developing practices locally lies at the heart of an MNC’s capacity to be responsive to idiosyncratic circumstances and changing opportunities. The variation in practices across regions is also often viewed as the foundation for organizational learning and innovation within the company as a whole (Puranam, Singh, & Zollo, 2006).

From a multinational perspective, the capacity to generate HR practices locally is potentially important for firms to address unique challenges in particular areas, as well as
develop new practices that may be beneficial in other areas (Nonaka, 1994). Ghoshal & Bartlett (1988) noted that firms generate new products, practices, or systems locally, using specific mechanisms found at the subunit level to respond to the environment. The specific mechanisms underlying the ability to generate new practices have often become a source of debate among scholars (e.g., Hansen & Lovas, 2004). Even so, these mechanisms are potentially vital to an MNC’s capacity to compete locally as well as leverage that advantage globally.

**Resource Immobility and Sharing HR Practices**

In addition to the importance of resource heterogeneity, a second important premise of RBV is that resources are immobile and therefore difficult to imitate, duplicate, or appropriate. Although the RBV typically addresses issues of immobility across firms, the issue is germane to business units within the MNC as well (see Jensen & Szulanski, 2004 for further discussion of within MNC practice immobility). Scholars using KBV have consistently noted the difficulties of sharing knowledge across borders and the capability to apply solutions from one context to challenges and opportunities in another (e.g., Kogut & Zander, 1993; Kostova & Roth, 2002; McWilliams, Van Fleet, & Wright, 2001; Szulanski, 1996).

However, if HR practices that are effective in one area can be shared with business units in other areas of the firm, the possibility for learning—and the transfer of best practice—are potentially significant. For example, Bjorkman, Fey, and Park (2007) found that “knowledge transfer between subsidiary units in different locations within the MNC increase the exchange of ideas and best practices, which leads to the spread and establishment of high-performance HR practices within the MNC.” (443). On the other hand, if HR practices are immobile, and cannot be transferred within MNCs, there is no opportunity to leverage learning or practice plurality in
other areas of the firm. In such an instance, the MNC would be no more advantageous than a market of local competitors—not allowing for economies of scale.

Resource immobility is largely a result of increased ambiguity and complexity in how resources in one location might be used or transferred to another. In the multinational context, the capacity to share practices hinges on the subunit’s ability to learn from other peer units (Argote & Ingram, 2000; Szulanski, 1996). How best to learn from other peer units depends largely upon the specific resources possessed by the focal unit. For example, the possession of specific types of networks may improve the firm’s ability to share and exchange ideas (Burt, 1997). This said, learning from other peer units requires more than just sharing of knowledge about practices, it also requires implementing those practices from the side of the focal unit.

Resource Immobility and Implementing HR Practices

While knowledge sharing is important across geographically diverse HR subunits to remove barriers to resource immobility, it does not address the issue of how—or if—the practices are implemented once they are shared. Several researchers have argued that knowledge sharing does little good when actors lack the ability to act on shared information and distinguish reusable from non-usable knowledge (Hansen and Haas (2001), Huber and Daft (1987), Kostova and Roth (2003), Sproull and Kiesler (1991), and Whittaker and Sidner (1997). The ability to implement new practices into existing operations is substantively different from merely sharing those practices across units. For example, in our interviews some managers spoke of how their HR unit was open and shared practice ideas on a constant basis with cross-regional HR units, but that the problem came when the team tried to actually implement or use the shared practice.

While generating practices and sharing that knowledge about those practices with other HR subunits in the MNC is important and often a prerequisite, the primary objective of HR subunits in most MNCs is to be able to implement practices that have been created elsewhere in
In summary, while a subunit’s generation capability may provide a source of unique advantage at a local level, it may actually diminish performance at a global level unless the subunits develop the capabilities to share and implement best practice more broadly. For example, one company we researched found that having locally adaptive HR units allowed for some very innovative HR practices, but that variation and continuous change across the subunits made the development of shared services or standardized HR platforms more difficult (diminishing the potential for achieving economies of scale). Furthermore, because of the locally adaptive nature of the firm, many HR subunits were spending time and resources reinventing practices that had already been developed elsewhere, thus losing out on economies of scope.

**HYPOTHESES**

How subunits configure their resources to generate, share, and implement HR practices is vital to managing the global/local tension found within the MNC. From a knowledge-based perspective, knowledge resource configurations are often the focus of investment for the firm as they try to build more complex and ambiguous capabilities that are difficult to invest in and difficult to obtain on the market (Dierickx & Cool, 1989). Ahuja and Lampert (2001), Nahapiet & Ghoshal (1998), Subramaniam and Youndt (2005), and Tsai and Ghoshal (1998) all noted the importance of knowledge resources, and previous research has identified three that are most critical: human capital, social capital, and organizational capital.

Human capital is defined as the knowledge, skills, and experience of individuals—experience being the key predictor in human capital theory (Becker, 1967). Fukuyama (1995) defines social capital as the existence of informal values or norms shared among members of a
group that permit cooperation. And organizational capital consists of the codified experiences residing within an organization (Youndt, Subramaniam, & Snell, 2004). However, within these three categories, there remain potentially multiple dimensions depending upon the context. Based on our interviews and MNC literature, we examined two human capital dimensions (international experience and local experience), two social capital dimensions (shared vision and social interaction), and one for organizational capital (codifying systems).

Resource Configuration for Knowledge Generation

Influence of Human Capital. The types of experience most likely linked to knowledge generation in an MNC subunit consist of localized and international forms. One of the limitations of previous work in this area is that it tends to focus more on how learning is influenced by international and local experience as a factor of nationality and does not factor in the levels of local or international experience (e.g., Bjorkman et al. 2004; Hocking et al. 2004; Lyles and Salk, 1996). To help overcome this limitation, Haas (2006) pointed out the need to understand how levels of local experience might influence learning. She measured levels of experience as two separate factors—cosmopolitan (international) and local. While previous literature (e.g., Gouldner, 1957) saw locals and cosmopolitans as two end-points on the same spectrum, Haas recognized that an individual or group could have high or low levels of both. In accordance with Tung’s (1998) international experience being a function of understanding that comes from people having lived, worked, and been trained in multiple cultures, Haas defines local experience as a function of understanding that comes from living, working, and receiving training in the country of operation—regardless of nationality—and international experience as a function of living, working, and receiving training in multiple countries.
According to knowledge creation theory, ideas new to the firm often come from individuals—not organizations as a whole (cf., Nonaka & Takeuchi, 1995; Simon, 1991). Developing ideas requires experience and reflection by the individual members (Argyris & Schön, 1978; Leonard-Barton, 1995; Snell, Youndt, & Wright, 1996). Some of these practices in response to the environment may not be new per se, but can be considered new for the firm; which is why researchers such as Luo & Peng (1999), March (1991), and Moorman & Miner (1998) all claim that exposure to the different local environments stimulates the generation of new ideas from individuals.

Generally speaking, local experience can be seen as providing managers with unique contextual knowledge to formulate practices. In this situation, managers may be more able to interpret idiosyncratic challenges and opportunities in the host country. And it may give them the credibility to develop practices in situ. For example, Rosenzweig & Nohria (1994) found that when the country HR director was a local national, management practices were much more likely to be shaped by local conditions (rather than in the larger corporation). These points lead to the following hypothesis:

**Hypothesis 1a:** The more local experience possessed by an HR subunit, the more we will see an increase in that unit’s generation capability.

As with local experience, international experience is likely to have a positive influence on the HR subunit’s generation capability. For example, Barkema and Vermeulen (1998) showed that diversity of geographical experience helps a firm develop knowledge structures about operating in a new national setting. Similarly, Mendenhall and Stahl (2000) noted that because international experience is often highly valued in MNCs, individuals with international experience are more likely to be seen as confident and willing to share divergent opinions and advocate for their own position (Stasser, Stewart, & Wittenbaum, 1995). Tung (1998) also noted
that when expatriates are successful it may largely be due to a cosmopolitan outlook demonstrated in having lived and worked in different countries.

Meanwhile, Black and Gregersen (1993) showed that people with strong experience in many international settings are more likely to make changes based on local demands rather than from pressures from central parts of the firm. This is most likely due to the array of international experiences that have helped them develop what could be a form of architectural knowledge (Henderson & Clark, 1990). People with experiences in other subunits know what general concerns and local issues to look for in a subunit setting. While they may not have detailed understanding of the local environment itself, they know how to search for and meet the needs of a local environment. In a sense, this may allow them to identify themselves more strongly with the local countries in which they operate. These points lead to the following hypothesis:

**Hypothesis 1b:** The more international experience possessed by an HR subunit, the more we will see an increase in that unit’s generation capability.

**Influence of Social Capital.** In addition to the importance of human capital on generation capability, there may also be some influence from the characteristics of social capital (e.g., knowledge available through or embedded in common understanding and interaction) as well. Several studies have documented the importance of intra-firm relationships on the flow of knowledge within complex multiunit organizations (e.g., Ghoshal, Korine, & Szulanski, 1994; Ibarra, 1993; Leonard-Barton, 1992; Powell, Koput, & Smith-Doerr, 1996).

However, much of this research does not examine the generation of new ideas. In fact, considerable research shows that people who interact with similar others tend to limit the heterogeneity of information coming to them and tend to make similar decisions (Burt, 1997). Likewise, Uzzi (1997) warned that closed social interactions (within a narrow set of internal associations) may lead to the development of shared mind sets that actually reinforce existing ways of doing things. Specifically within the context of HR, this would suggest that if subunits
limit their engagement primarily to others inside the MNC, they may blunt the richness of input that could otherwise lead to practice generation. Based on this, we propose a specific hypothesis about the nature of social capital on generation capability.

**Hypothesis 1c:** The more an HR subunit interacts with cross-border peer HR subunits within the MNC, the more we will see a decrease in that unit’s generation capability.

In summary, while each of the preceding hypotheses differs in terms of the knowledge resources that influence generation capability, they all connect theoretically in terms of their effects on resource heterogeneity. That is, if aspects of human capital, social capital, and/or organizational capital act to increase the variety and novelty of knowledge to local subsidiaries, then they are likely to increase the generation capability of those subunits.

**Resource Configuration for Knowledge Sharing**

**Influence of Human Capital.** One of the key features of the KBV is its emphasis on the mechanisms necessary to share practices that have been created within different parts of the firm (cf., Grant, 1996). In their discussion of knowledge in the multinational firm, Kogut and Zander (1993) point out that one of the most persistent findings in the work on technology creation and transfer is the importance of prior international experience. Teece (1977) argued that one of the principle obstacles to technology transfer is lack of prior experience and knowledge. This prior experience of individuals in the firm can play a strong influence on whether or not knowledge is shared. For instance, studies have shown how people enable more efficient knowledge sharing if they have the capacity or prior experience to understand related ideas (Szulanski, 1996; Tsai, 2001). In particular, Haas (2006) showed that groups with international experiences are more likely to communicate with other foreign parts of the organization than those that do not. In this regard, we argue that HR subunits will improve their ability to share knowledge with other parts of the firm if they have international experience. Hence,
**Hypothesis 2a:** The more international experience possessed by an HR subunit, the more we will see an increase in that unit’s sharing capability.

**Influence of Social Capital.** Kang, Morris, & Snell (2007) argued that certain forms of social capital might optimize the capability of an organization to share knowledge. Theorists such as Coleman (1988), Burt (1992), Uzzi (1997) and Gabbay and Leenders (1999) have all suggested that the structural make-up of relationships determines the degree of knowledge sharing. Furthermore, Kang et al. (2007) argued that through dense (i.e., internally concentrated) relationships, members are more inclined to share knowledge. Within the MNC literature, Gupta and Govindarajan (2000) built upon Ghoshal and Bartlett’s (1988) findings to show that transmission channel richness, in terms of density of interactions, lead to greater knowledge inflows and outflows. In addition, Tsai and Ghoshal (1998) talked about social interaction leading to greater knowledge sharing within the MNC. As a result, while turning to cross-border peer units within the MNC might negatively influence a subunit’s ability to create local practices, it is likely to have a positive influence on sharing practices. Hence,

**Hypothesis 2b:** The more an HR subunit interacts with cross-border peer HR subunits within the MNC, the more we will see an increase in that unit’s sharing capability.

Not only did Tsai and Goshal (1998) show the importance of social interactions, they also showed the importance of *Shared vision*, which consists of collective goals and aspirations of members inside the MNC and is often considered the key dimension of social capital. A number of scholars have acknowledged that individuals have difficulty sharing knowledge without some common frame of reference (e.g., Grant, 1996; Nonaka, 1991). For example, Kang, Morris, and Snell (2007) argued that the cognitive dimension highlights the importance of shared representation, understanding, and systems of meaning needed for organizational learning and increased interest in sharing. This shared frame of reference can be extended to include shared vision or goal congruence to show how a loosely coupled system, such as an MNC trying to
balance local and global tensions, may facilitate knowledge sharing through the informal mechanism of shared vision (Kogut & Zander, 1996). These examples show how a shared vision among the geographically dispersed HR units of an MNC can help facilitate knowledge sharing because it provides the same perceptions about how to interact with one another and avoid possible misunderstandings in their communications as well as increases their interest in interacting. These points lead to the following hypothesis:

**Hypothesis 2c:** The more an HR subunit shares a common vision with other peer HR subunits within the MNC, the more we will see an increase in that unit’s sharing capability.

**Influence of Organizational Capital.** Schulz (2001) found that the higher the level of codification of a domain of knowledge, the stronger the horizontal and vertical outflows of knowledge. This suggests that organizational capital in the form of codifying systems is likely to have an influence on practice sharing as well. Because codifying systems offer established databases and technology conduits, they allow firms the ability to better share practices across subunits within the organization (Davenport & Prusak, 1998). Practices become decontextualized and articulated in databases and other codified systems that allow multiple parts of the MNC to more easily understand how a practice might be helpful to them in their specific context. We believe that these same findings can be applied to practice sharing across foreign HR subunits. Hence,

**Hypothesis 2d:** The more codifying systems are possessed and used by an HR subunit, the more we will see an increase in that unit’s sharing capability.

The above hypotheses represent differences in how resources influence sharing capabilities of multinational subunits. However, they all point to specific influences on an MNC’s ability to combat practice immobility found within a culturally and operationally diverse group of subunits. In other words, if configurations of human capital, social capital, and/or
organizational capital act to decrease immobility barriers to practice ideas, then they are likely to increase the sharing capability of those subunits.

**Resource Configuration for Knowledge Implementation**

*Influence of Human Capital.* High aggregate levels of *local experience* by the HR members in a subunit are likely to negatively impact a subunit’s ability to implement practices. For example, subunits with high levels of experience might be more reluctant to implement practices from other parts of the firm due to a “not-invented-here syndrome”. According to Haas (2006), local and international experience may impede the application of knowledge that does not correspond to the individuals’ expertise. In a study of 96 project teams at an international development agency, she found that teams with high levels of local experience were less likely to apply knowledge that was not pertinent to their respective strengths (19). Hence,

**Hypothesis 3a:** The more local experience possessed by an HR subunit, the more we will see a decrease in that unit’s implementation capability.

*Influence of Social Capital.* *Shared vision* also plays a significant role in an HR subunit’s capability to implement HR practices. In a sense, shared vision or collective goals can act in a similar way to institutionalizing processes in that related knowledge or aspirations about how the MNC should operate will help an organization to know how new knowledge from others can fit into and be applied to existing practices. Similarly, the literature on shared cognition suggests that team processes for integrating individual knowledge is supported by the similarity of team members’ mental models (e.g., Cannon-Bowers & Salas, 2001; e.g., Klimoski & Mohammed, 1994; Mohammed & Dumville, 2001). Finally, Tsai and Ghoshal (1998) point out that shared vision not only facilitates knowledge sharing, but also knowledge implementation. Hence,
**Hypothesis 3b:** The more an HR subunit shares a common vision with other peer HR subunits within the MNC, the more we will see an increase in that unit’s implementation capability.

While the effects of shared vision on implementation may be more obvious, turning to *cross-border peer units* within the MNC is likely to influence a subunit’s ability to implement practices once they’ve been shared as well. Social interaction with cross-border peer units may positively influence a group’s proclivity to actually use ideas from others once they’ve been shared. Social capital theorists argue that the more people interact with others, the more they tend to act alike (Coleman, 1988). Actors who frequently interact with one another, such as primary contacts, tend to develop greater dyadic trust with one another (Kang et al., 2007). This dyadic trust surpasses a sense of openness to the point where obligations and reciprocations that are put in place not only promote sharing of ideas but also applying those ideas. Hence, when a group considers other HR units within the MNC its primary contact then over time that subunit will develop greater trust in the efficacy of the other subunit’s ideas about HR practices. As a result,

**Hypothesis 3c:** The more an HR subunit interacts with cross-border peer HR subunits within the MNC, the more we will see an increase in that unit’s implementation capability.

**Influence of Organizational Capital.** While knowledge sharing requires mechanisms that allow for the decontextualization of knowledge, implementation requires mechanisms, such as *codifying systems*, that allow for the recontextualization of knowledge. For instance, to implement and capture knowledge for application requires templates and systems that enable a subunit to actually hold on to the practices (Grant, 1996). This is especially true in the MNC, where people are separated by geographical distances. The codifying systems allow practices from others and the subunit to be (1) codified and made simpler to understand, and (2) captured
in a storage system that allows for longevity of the practice. In other words, codifying systems allow HR subunits to effectively implement practices into existing operations. Hence,

**Hypothesis 3d:** The more codifying systems are possessed and used by an HR subunit, the more we will see increases in that unit’s implementation capability.

The significant component of the three different capabilities (generation, sharing, and implementation) is that, while interdependent and mutually enabling in the process of learning and change, they are most likely distinct enough to be managed separately (see Figure 1 below for a visual representation of the hypotheses). In fact, in some cases they are competing as aspects of organizational learning (Crossan, Lane, & White, 1999; Grant & Baden-Fuller, 1996; Nonaka, 1996; Schulz, 2001). Their differences in part reflect the different behaviors, perspectives, processes, and skills associated with each (Crossan & Berdrow, 2003). For example, Grant (1996) stated that “transferring knowledge is not an efficient approach to integrating knowledge”. In other words, mechanisms that help a subunit effectively share practices may not be as efficient in implementing them; and in fact, might actually hinder practice generation. The challenge is to identify how subunits can preserve variety through local practice generation while simultaneously establishing a foundation for efficiency through sharing and implementing practices. Such an approach, as argued above, is found in how organizations configure their knowledge resources for capability development.

[Insert Figure 1 here]

**METHODS**

**Sample and Procedures**

Prior to testing our hypotheses, we conducted 35 semi-structured interviews with HR managers in two participating MNCs to aid construct development. Afterwards, we conceptually
mapped the constructs using feedback from 25 management PhD students. As demonstrated in the hypotheses section, these interviews were also used to inform our hypothesis development.

To test our hypotheses we sent out a multi-item survey to 288 regional and country-level HR unit managers from 20 different MNCs headquartered in the U.S., Europe, and Asia. The MNCs were identified based on a strict guideline that they had substantial operations in three major regions of the world (Asia, Europe, and the Americas). Based on these criteria, around 50 large MNCs were invited to participate. 20 responded positively. HR unit managers were identified by the Senior VP of HR for most of the 20 firms. We then had the VPs send out letters to all identified HR unit managers asking them for voluntary participation in the study. We followed 2 days to a week after the letter from the VP with an electronic survey asking each manager to respond to questions in behalf of their country or regional HR unit. We surveyed the HR unit managers because they are responsible for all management practices and activities that occur within the country or regional operations. All surveys were conducted in English, as this was the primary language of business for all the HR managers involved. The total number of completed surveys was 187 (65% response rate), representing subunit responses for 44 different countries or regions (See Table 1). The demographic information pertinent to the respondents is as follows: average tenure with the HR subunit was 4 years (s.d. = 3.2, min = 0, max = 25); the average time spent with the organization was 11 years (s.d. = 8.8, min = 0, max = 33); and 35% percent were female. Archival data at the company level was also collected for control purposes.

To analyze the survey and archival data we used a two-step structural equation modeling (SEM) approach in accordance with Anderson and Gerbing (1988). We selected SEM because it allows for the simultaneous analysis of multiple dependent variables and confirmatory factor analysis (Joreskog & Sorbom, 1996). Also, Godfrey and Hill (1995) argued that SEM provides the specific ability to tap intangible latent variables that might help unveil the unobservable
constructs that are central to the RBV. Such an approach allows us to conduct an omnibus test of
the overarching theoretical framework by providing the ability to test an overall model rather
than just coefficients individually (Bollen, 1989).

[Insert Table 1 here]

Measures

Based on the 35 semi-structured interviews with HR managers and previous measures
used in the literature, we crafted multi-item scales (using a 5-point Likert format of 1: “strongly
disagree” to 5: “strongly agree”) for each of the constructs (See Appendix 1 for measures).

Human Capital. Measures of human capital were based on original research looking at
the work related experiences of people in a firm (Becker, 1967) as well as Gregersen and Black’s
(1992) measures asking managers about their international experience (78). We also adapted
measures from Haas (2006), who looks at the local experience of a team or group as a function
of understanding that comes from living, working, and receiving training in the country of
operation and international experience as a function of living, working, and receiving training
from outside the country of operation. We asked the HR subunit manager to report on the
overall level of international and local experience found within the HR subunit. The first
dimension consists of local experiences that are pertinent to understanding HRM issues in the
environment of operation. This dimension of local experience consisted of three items. The
second dimension of international experiences pertinent to understanding HRM issues within
multiple environments also consisted of three items.

Social Capital. Social capital measures were based on the social interaction and shared
vision dimensions described earlier in the paper. We turned to knowledge management research
that has used similar measures in international settings, especially MNCs.
Multiple researchers have looked at the social connections or social interactions of a foreign subunit and how that might facilitate knowledge sharing (e.g., Ghoshal et al., 1988; Gupta & Govindarajan, 2000). Based on these studies and previous measures from Ghoshal et al. (1994), we used a behavioral-based question on whether or not other HR groups within the firm are considered that subunit’s primary contact.

To measure shared vision we turned to items used by Tsai and Ghoshal (1998). However, because they only used two items we added a third to increase probability of validity by drawing from measures of shared codes and languages from Collins and Smith (2006).

**Organizational Capital.** Measures for organizational capital were designed to assess the HR subunit’s level of databases and information systems used for knowledge capture (Davenport & Prusak, 1998). Four items to assess the codifying systems were developed based on measures by Youndt et al. (2004) and Subramaniam and Youndt (2005) looking at the issues of codification, documentation, and information systems.

**Organizational Capabilities.** Because capabilities are complex, deep, and historical, hence, seldom captured, we developed scales for generation, sharing, and implementation capabilities within the HR subunit (Godfrey & Hill, 1995). Measurement scales, as well as theoretical discussions of the different types of learning that go on in an MNC were developed from the interviews.

First, the Generation Capability was measured with three items capturing a subunit’s ability to create and develop local practices that are new to the MNC. Such a capability is demonstrated in how the subunit is able to create practices that are responsive to the local environment or simply develop practices that are not found elsewhere within the firm. The second factor is Sharing Capability. Based on interviews and the knowledge sharing literature, three items were used to assess a subunit’s ability to connect with and exchange ideas.
The third factor is Implementation Capability. This capability was measured using three items focused on how well the subunit is able to implement or formalize practices from others into their existing practices. Such measures also distinguish between a firm’s ability to share practices and a firm’s ability to implement those shared practices into the existing HR system.

These three capabilities are theoretically distinct but often overlap in practice. Such dependencies are important to point out in terms of measurement. Great effort was taken to conceptually distinguish the three capabilities in a way that managers can understand and report with validity. After collecting responses on these items, confirmatory factor analysis proved that each construct was highly reliable. To address the issue of discriminant validity using a post-hoc perspective, we also performed an exploratory factor analysis using principal factors and an orthogonal varimax rotation.

Control Variables. There are numerous other exogenous and endogenous factors that potentially influence an HR subunit’s capability to learn. Although many factors are outside the premises of the theoretical development of our arguments, some are contextual and need to be controlled. The first control variable consists of subunit size. HR subunit size varies—from a small staff of 1 person to a large regional subsidiary of 200 (mean = 20). Larger HR subunits may be prone to practice generation, while smaller HR subunits may be more oriented toward sharing and implementation. In this study, subunit size was measured as the number of HR staff working on site. Another possible influence includes the different industries in which the HR subunit is operating. HR subunits may vary in their learning responsibilities in certain industries. For example, HR issues in a manufacturing company may somewhat vary from HR issues that are dealt with by a high-tech firm (Baron, Hannan, & Burton, 2001). Hence, we measured industry effects by having the subunits identify the industry in which they are operating.

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1 The number of members in the HR group is representative of all HR staff in that country or region. This includes all secretarial/clerical staff.
Another environmental factor may be the region of operation. Rugman and Verbeke (2004) argue that regions play a much stronger role in operations of multinational firms than countries. Hence, we accounted for the region of operation. We also controlled for firm size and age to determine whether or not larger and more established firms and subunits are influenced by more mechanistic (Burns & Stalker, 1961) forms of organizing that would most likely be manifest in stronger degrees of sharing and implementation capabilities but lower degrees of generation capabilities. Likewise, younger and smaller firms would tend to operate under a more organic structure and be better suited for generation capabilities. We did not expect to find major effects as most of our companies are large fortune 500 firms that have been in existence for many years. The average size of companies in our study as measured by number of employees was 105,050 (s.d. = 89,531, min = 5,727 and max = 329,373). The average subunit age was 18 years old (s.d. = 19 yrs, min = a few months and max = 85). The average age of the firms was 79 years old (s.d. = 33 yrs, min = 14 yrs and max = 194 yrs). Because tenure in the local subunit as well as tenure in the company may influence how the HR subunit manager responds to questions related to the different forms of capital, we also controlled for the subunit and firm tenure of the HR managers responding to the survey. On average, managers who responded to the survey had been in the subunit for 4 years (s.d. = 3 yrs, min = 0 and max = 25) and with the company for 10 (s.d. = 9, min = 0 and max = 33).

In the past couple of decades, global outsourcing of HR practices has become widespread. According to Klaas et al. (2001), firms outsource practices that are scalable and less complex. HR units that do more outsourcing tend to focus more on strategic and complex practices. Hence, we suspect that HR subunits that outsource more of their practices will have more interest and opportunity to invest in strategic capabilities that allow them to adapt and adjust their practices. Similarly, we also account for level of shared services used by the HR
subunit. For reasons similar to outsourcing, HR subunits who use more shared services within the company are more likely to focus on more dynamic capabilities.

**Measurement Properties**

Confirmatory Factor Analysis (CFA) with maximum likelihood estimation was used to assess the average variance extracted, reliability, standardized factor “loadings”, and fit indexes among the 5 constructs of knowledge resources and the 3 constructs of organizational capabilities. 3 to 4 items were used for each construct, except for the social interaction construct. Social interaction was determined based on a behavioral measure of whether or not other HR groups in the firm are the subunit’s primary contacts. Because this measure fits under what measures can be single item we included it in the model with confidence of low measurement error (Edwards & Bagozzi, 2000).

Overall, the CFA results suggested that the knowledge resources model provided a good fit for the data and that the learning capabilities model also provided a good fit. In other words, both models had chi-squares less than three times their degrees of freedom and the fit indexes exceeded the suggested levels (resources: chi square 97, df = 59; CFI = .93, IFI = .94, GFI = .93; learning capabilities: chi square = 42, df = 24; CFI = .96, IFI = .96, GFI = .95) (Carmines & McIver, 1981; Bentler & Bonnett, 1980; Browne & Cudeck, 1993; MacCallum, Tait, & Ford, 1996). The composite reliability measures were all acceptable as well (Organizational Capabilities: Generation Capability = .71; Sharing Capability = .73; Implementation Capability = .75) (Human Capital: Local Experience = .66, International Experience = .62; Social Capital: Shared Vision = .78; Organizational Capital: Information Coordination Systems = .77). Results

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2 We assessed construct reliability by calculating composite reliability scores for each of the knowledge resource and capability constructs. Bollen (1989), Fornell and Larcker (1981), and Wertz, Linn, & Joreskog, (1974) recommend using composite reliability over coefficient alphas because they represent more accurate assessments of reliability drawing from each item’s error variance, modification index, and residual covariation. Because we used
showed that three separate organizational capability factors were clearly loading, with three eigen values above one (eigen values = 1.4, 1.3, and 1.3).

At a basic level, confirmatory factor analysis offers evidence of convergent and discriminant validity, assuming it is found to have acceptable factor loadings and fit indices (Anderson & Gerbing, 1988; Shook, Ketchen, Hult, & Kacmar, 2004). Since the average standardized factor “loadings” of all the measurements were significant (p < .05), the fit indices were above acceptable levels for goodness of model fit, and all of the confidence intervals of the phi values (the diagonal values of a covariance matrix) contained a value of less than one, we concluded that the constructs exhibited convergent and discriminant validity (Bagozzi & Phillips, 1982; Montoya-Weiss, Massey, & Song, 2001).

To further check for discriminant validity we calculated the shared variance between constructs (Shook et al., 2004). To do this, we used the correction for attenuation formula recommended by John & Benet-Martinez (2000). A result less than .85 means that discriminant validity likely exists between two scales. Based on our findings, we can conclude that the scales in our study are measuring theoretically different constructs (see Table 2 below).

[Insert Table 2 here]

Also, because the survey is complex in terms of collecting subunit level measures nested within different countries as well as companies, we needed to test for clustering effects as exemplified in hierarchical data structures. In other words, HR subunits that share the same company, country, or even country of origin membership may be correlated. If such correlations do exist in this dataset, the standard errors of the parameter estimates may be underestimated using a standard aggregated structural equation model (Muthen & Satorra, 1995).

structural equation modeling for the final analysis we were also able to capture some of the error variance that might have resulted from lower reliability for the local and international experience constructs.
To test for these clustering effects, we analyzed how the size of the company, country, and country of origin variance components influenced the size of their intraclass correlations (ICC) (Koch, 1983; Skinner, Holt, & Smith, 1989). We ran a design effect model and found that the ICCs were very low and that the model exhibited only a modest degree of nonindependence (Muthén and Satorra, 1995; Cochran, 1977; Skinner et al., 1989; Scott & Holt, 1982).

RESULTS

To test the overarching framework, we first measured fit of the hypothesized model and made sure it was positively identified. Goodness of fit measures for the hypothesized structural model were found to be acceptable ($\chi^2 = 23, \text{df} = 6, p < .01; \text{CFI} = .97 \text{ IFI} = .96, \text{GFI} = .99$).

Table 3 reports the means, standard deviations, and correlations among the data for this model and the control variables. Although estimation of SEM in this study is based on covariance (not correlation) matrices (Cudeck, 1989), we followed Hoyle & Panter’s (1995) advice by including a correlation matrix of the variables for replicability purposes.

[Insert Table 3 here]

Examination of the standardized parameter estimates indicated that 9 of the 11 hypothesized relationships were significant in the predicted directions when the control variables were accounted for (see Figure 2). General support of the overarching framework revealed that different knowledge resource configurations play different roles in supporting organizational capabilities among subunits in the MNC. As shown in Figure 2, the relationship between local and international experience and generation capability (1a and 1b) proved significantly positive (1a: $b = .51, p < .01; 1b: b = .21, p < .05$). Hypothesis 1c negatively relates social interaction with generation capability and was found to be significant as well (1c: $b = -.18, p < .05$).
Overall, hypothesis 1 regarding the specific resource configuration associated with generation capability was supported.

[Hypothesis 2: Insert Figure 2 here]

Hypothesis 2 primarily argues for a different resource configuration for sharing capability. First, hypothesis 2a positively relates international experience with sharing capability. The results of the path analysis were opposite of the hypothesis at a significant level—inferring that when taking into account other variables international experience actually has a negative influence or association with practice generation capability ($b = -.66, p < .05$). The second sub-hypothesis (2b) under this main hypothesis is that a subunit’s social interaction is positively related to sharing capability. The path was statistically significant ($b = .28, p < .05$). Hypothesis 2c positively relates shared vision with sharing capability. The structural model showed a significant, positive path ($b = 1.2, p < .01$). Hypothesis 2d positively relates codifying systems with sharing capability. Results proved non-significant at the .05 level but did show signs of influence at the .10 level ($b = .25, p < .10$). Overall, three of these hypotheses were supported and one was not—leading to the ultimate conclusion that sharing capability is strongly related to aspects of social capital, somewhat associated with codifying systems, and negatively related to international experience.

Hypothesis 3 is concerned with the relationship between implementation capability and an even different resource configuration from that of sharing capability. The main aspect of organizational capital (codifying systems) is hypothesized (3d) to positively relate to implementation capability. The results, showed positive significant correlation ($b = .41, p < .05$). Hypothesis 3c, which positively relates shared vision with network affiliates to implementation capability was supported at a significant level ($b = 1.2, p < .01$). Hypothesis 3b was also supported ($b = .25, p < .05$). Hypothesis 3a was not supported. However, we found that
international experience had a negative relationship with implementation (b = -.75, p < .05). In all, hypothesis 3 is supported in that social capital (shared vision and social interaction) and organizational capital (codifying systems) positively relate to implementation capability, but it is not supported in that international experience instead of local experience negatively relates to implementation capability.

**DISCUSSION**

Findings from the hypothesized model revealed that specific knowledge resource configurations play differentiated roles on organizational capabilities within subunits. Developing organizational capabilities through appropriate investments in knowledge resources is a key source of internal sustainable advantage for the MNC. But something as intangible as knowledge can be a major source of misunderstanding and mismanagement. More importantly, scholars know little about how to develop these capabilities through various knowledge resource configurations. Only recently have scholars begun to discuss and attempt models and frameworks that create greater understanding of organizational capabilities in the MNC (e.g., Augier & Teece, 2007; Pitelis & Verbeke, 2007; Teece, 2007).

As shown above, to facilitate different types of capabilities may require different levels of investment. Throughout this paper we looked into how aspects of organizational capabilities are comprised of different knowledge resource configurations. What this means is that the organizational capabilities found within the MNC must be assessed by examining their underlying knowledge mechanisms.

**Implications**

As a whole, these findings have important implications for extending resource and knowledge-based views in terms of knowledge resources and organizational capabilities in the
MNC. Haas & Hansen (2005) argued that one of the reasons organizational capability research has tended to outpace empirical research is because of the problems of defining and of measuring capabilities. As a result, the value of certain knowledge resources leading to capabilities becomes difficult to assess. This suggests that the value of global HRM research is less on the operational capabilities of management practices, but more on the organizational capabilities of how practices are created, shared, and implemented through specific and different knowledge resource investments.

Pertaining to organizational capabilities, the HR practices used by subunits may differ and change over time as long as the HR subunits are able to respond to cultural, political, and environmental factors. The capability aligned with producing these organizational forms of HR practices is seen in the subunits capability to create new, local practices. Based on the structural model, it appears that by focusing on acquiring and developing local and international experience within the HR subunit, firms can facilitate the flow or constant generation of new, heterogeneous practices.

However, because this generation capability provides fertile ground for practices that are immobile (complex and causally ambiguous) across countries and regions, subunits must possess specific capabilities to share and implement the practices across borders. Such specific and distinct capabilities require specific and distinct driving mechanisms. Unlike the strong correlation found between a subunit’s generation capability and its possession of international and local knowledge and experience, a firm’s ability to share these complex and causally ambiguous practices is strongly linked to social interaction across subsidiary peer units and how much shared vision they posses with one another. Therefore, investing in ways to build shared vision, as discussed by scholars such as Weick & Roberts (1993), would be potentially beneficial to an organization’s ability to spur sharing across geographic and cultural divides. Likewise,
while investments in codifying systems may not have a particularly strong influence on knowledge sharing, it seems that it would make a difference in a firm’s ability to apply and implement practices—thus, leading to greater convergence of the actual use and institutionalization of practices in a firm. It is also important to note that while certain resource configuration can be helpful, others may be harmful. For example, if a unit has the intent to develop a stronger sharing and/or implementation capability, overinvestment in international experience may actually backfire on the unit and decrease the desired capability. Likewise, a unit interested in new practice generation should be careful of developing too strong of internal contacts with other peer subunits within the MNC. In sum, firms can potentially overcome factors of causal ambiguity and practice complexity found especially in MNCs by investing in specific human, social, and technical levers that help the flow of knowledge within the firm.

As subunits are able to manage this paradoxical role of creating and adapting practices at the local level while sharing and implementing practices from other subunits, MNCs will be able to balance the need for heterogeneous and immobile practices that lead to a sustainable competitive advantage. Based on the structural model used in this study, greater support is provided for the theoretically developed framework. It appears that how multinational organizations mobilize seemingly immobile practices across borders, and at the same time develop new practices within those borders depends on specific investments in knowledge resource configurations that may both help or hinder a subunit’s organizational capabilities.

By looking at the relationships between these capabilities for an HR unit and the levels of knowledge resources found within each, we can address how global firms might optimally create new practices in response to local environments and share and implement existing practices from other parts of the firm (affiliates, regional headquarters, and global headquarters). As HR units invest in different knowledge resources, they can influence specific aspects of these
organizational capabilities. This framework allows for a greater understanding of how a company might better address tensions for local responsiveness and global efficiency in terms of how people are managed—depending upon the individual firm’s perceived need. As HR units are able to manage this paradoxical role of creating and adapting practices at the local level while sharing and implementing practices from other subunits, MNCs will be able to balance the need for heterogeneous and immobile practices that lead to a sustainable competitive advantage.

Limitations and Future Research

By taking a first step toward developing a framework for subunit organizational capabilities inside the MNC, further research can begin filling in the missing pieces and adding detail. In a sense, a road map has been created to better understand organizational capabilities through aspects of knowledge resource configurations. One suggestion for future research is to look at the various interactions between knowledge resources and just one of these organizational capabilities. While testing our model using SEM allows us to see how the various knowledge resources are correlated with each other and account for the dependences between the organizational capabilities, further research could take this a step further to show the increased complexities involved in managing knowledge resources.

A limitation of this study is potential bias presented by our data. However, studying over 43,000 correlations, Crampton and Wagner (1994) concluded that “percept-percept inflation may be more the exception than the rule in [research] on organizations” (72). Nonetheless, while correlation inflation due to our study’s data collection method is not substantial, we have used a number of pre and post analysis techniques to establish that correlations between independent and dependent variables are not higher than would be expected by chance (Klein, Dansereau, & Hall, 1994). We found no concern for common method bias based on these techniques used.
While limitations exist in this study, we attempt to look beyond the issue of which HR practices offer a competitive advantage and examine how firms develop capabilities that allow them to create, share, and implement innovative new practices allowing them to compete in a changing global environment. As one of few research projects of this kind where intangible assets and their influence on intangible capabilities are measured, design and collection will always prove difficult. However, in line with King and Zeithaml (2003) and Godfrey and Hill’s (1995) call for more research looking at the intangible, knowledge resources found inside the organization and how they lead to improved performance or capabilities, we argue that this is a necessary way to truly extend our understanding of resource and knowledge-based views that are interested in how organizations develop organizational capabilities that allow them to create, share, and implement knowledge. In essence, this research presents an attempt to forge new ground in the area of multinational management and the human resource management literatures.

CONCLUSION

In this paper we tried to develop and test a theoretical framework of how managers might invest in different knowledge resource configurations that act as the underpinnings to organizational capabilities. The organizational capabilities we referred to in this setting consisted of the ability of subunits to create, share, and implement human resource management practices in a complex and shifting global environment. These management practices, which are operational in nature, could also be forces of sustainable competitive advantage if they were constantly re-created, shared, and implemented. To do this, we needed to shift from traditional views that focus on specific HR practices that might be local or global, to discussing how HR units in a multinational setting might develop specific capabilities that allow them to generate practice heterogeneity while at the same time decreasing the immobility of these practices across the MNC.
To test this framework, we examined organizational capabilities at the subunit level and the underpinning knowledge resource configurations subunits drew upon. Not only did we find that different resources were linked to different organizational capabilities, but that a general trend emerged as subunits focused more on their human capital they had stronger local generation capabilities. As they focused more on organizational capital they were better at implementing practices once they had been shared, and as they focused more on social capital they were better equipped to share practices with other subunits and even, to a lesser extent, implement those practices. Finally, we discussed how this framework might provide opportunities to not only extend research through the organizational capabilities of subunits to create, share, and implement management practices, but to also provide insight on how managers might better meet the needs of the MNC.

References


FIGURE 1
Hypothesized Model
TABLE 1: Company survey participants

<table>
<thead>
<tr>
<th>Participating Organizations</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABB</td>
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<tr>
<td>Gap</td>
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<tr>
<td>IBM</td>
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<tr>
<td>Nissan</td>
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<td>TNT</td>
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TABLE 2
Test of Discriminant Validity

<table>
<thead>
<tr>
<th>Variable</th>
<th>Inter-Item</th>
<th>Correction</th>
</tr>
</thead>
</table>

40
TABLE 3
Means, Standard Deviations, and Correlations\textsuperscript{a}

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<th>6</th>
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<tr>
<td>2. Sharing capability</td>
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<td>0.37</td>
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<td>0.17</td>
<td>0.25</td>
<td>0.01</td>
<td>0.11</td>
<td>0.08</td>
<td>0.09</td>
<td>0.42</td>
</tr>
</tbody>
</table>

\textsuperscript{a} n = 187. Correlations greater than .15 are significant at p < .05. \textsuperscript{b} Natural logarithm.

FIGURE 2
Results of Structural Equation Model\textsuperscript{a}
N = 187. Fit statistics:
Measurement model—χ² = 23, df = 6, p < .00; CFI = .97, IFI = .96, GFI = .99

Knowledge Resources
- Local Experience
  - Generation Capability: .51**
  - International Experience: .21*

Social Interaction
- Social Interaction
  - Sharing Capability: -.66*
  - Shared Vision: .25*

Organizational Capital
- Codifying Systems
  - Implementation Capability: 1.25**

* p < .05   ** p < .01

a Parameter estimates are from the standardized solution. Control variables were included in this model, but eliminated from the graph for clarity.
Appendix 1: Survey Questions

Organizational Capabilities
To what extent do you agree with how well your HR group(s) does the following?

Generation capability
1. Rapidly respond to changes in the local market environment
2. Locally develop new practices
3. Experiment with practices different from those used in other parts of the company

Sharing capability
1. Participate in benchmarking activities with other HR groups in the company
2. Encourage the flow of knowledge across HR groups
3. Share insight with other HR groups in the company
4. Have a relaxed and open dialogue with other HR groups in the company

Implementation capability
1. Readily implement practices from HQ or peer subsidiary groups
2. Take practices from others (e.g., HQ or other parts of the HR functions) and apply them to their own operations
3. Formalize or institutionalize practices and ideas that come from HQ or other countries

Knowledge Resources
Looking back on the past six months of operation, to what extent do you agree with the following items describing the general state of resources or competencies found in your HR group?

Local experience
1. Many of our members have a background in local HR laws and policies
2. Many of our members have local HR certification
3. Most of our members have a strong understanding of the culture and traditions found in the countries in which they operate

International experience
1. Many of our HR staff have degrees from outside their local country
2. We understand a myriad of national cultures and the HR issues of each
3. We train our HR staff to understand issues on a global scale

Social interaction
1. We consider other HR groups in the company to be our primary contacts
2. We most often interact with people within the HR function of our company

Shared vision
1. We share the same goals and vision with the groups we interact with
2. We are striving for the same outcome from our HR practices as our contacts do from their practices
3. We agree with those with whom we interact on the direction HR in our company needs to go

Codifying Systems
1. We use extensive information systems for codifying and storing knowledge
2. We operate largely using shared IT systems found within the company
3. We possess and use extensive databases, electronic manuals, etc. for HR practices
4. We utilize and benefit from the information technology we possess