THE ROLE OF HUMAN RESOURCE MANAGEMENT IN CROSS-BORDER TECHNOLOGICAL ACQUISITIONS

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INTRODUCTION

In innovative industries, technological change is both rapid and frequent (Sarkar, Echambadi, Agarwal & Sen, 2006). While both incumbents and startups strive to innovate, past research provides evidence that much of the truly novel innovations originate in startups (Abernathy & Utterback, 1978; Pavitt, Robson, & Townsend 1987). This leads to many incumbent firms left technologically wanting. As a result, technological acquisitions have become a popular complement to internal innovation allowing firms to overcome the time compression diseconomies (Dierickx & Cool, 1989). Though technological acquisitions have recently become a much researched topic (Ahuja & Katila, 2001; Benson & Ziedonis, 2009; Capron & Mitchell, 2009; Graebner, 2004; Graebner, 2009; Graebner, Eisenhardt & Roundy, 2010; Makri, Hitt & Lane, 2010; Paruchuri, Nerkar & Hambrick, 2006; Puranam, Singh & Chaudhuri, 2009; Puranam, Singh & Zollo, 2006; Puranam & Srikanth, 2007; Ranft & Lord, 2002; Schweizer, 2005), less attention has been given to the effects of human resource management (HRM) strategies on the ability of firms to successfully acquire external technology.

Consistent with previous research focusing on non-technological acquisitions, acquirers fail to create value in technological acquisitions (King, Slotegraaf & Kesner, 2008; Sears & Hoetker, 2010). Despite the acquirers' inability to create value, technological acquisitions continue to increase in prevalence as the value of technological acquisitions have rose to over half of the value of all U.S. acquisitions by the turn of the century (Inkpen, Sundaram & Rockwood, 2000). With the regionalization of innovation (e.g., Silicon Valley, Route 128, the Research Triangle, Taiwan's Hsinchu region, U.K.'s Cambridge region), cross-border technological acquisitions are increasing as well. While not many firms are able to integrate the target firm successfully, Inkpen et al. (2001) find that the difficulties are magnified when it is a cross-border technological acquisition. While much of the research on technological acquisitions has been conducted from a strategy lens, we focus on the role of human resource management (HRM) in the acquisition process to facilitate the realization of post-acquisition synergies.

To analyze the effectiveness of HRM strategies as a mechanism for achieving synergies, we incorporate the post-acquisition resource flows and the need for structural integration into Aguilera and Dencker's (2004) framework that considers both national institutional environments and the strategic fit between the acquisition rationale and the human resource management (HRM) strategy. By taking into account the post-acquisition resource flows, we can identify which acquisitions will require greater levels of interdependence between the resources of the acquirer and the target. We also discuss whether and to what degree the acquisition should entail integration since acquirers should implement different HRM strategies contingent on whether structural integration occurs. While Aguilera and Dencker (2004) address acquisitions in a broader sense, here we focus exclusively on technological acquisitions for three primary reasons: 1) unique to technological acquisitions, their success depends on the retention of the target firm's employees and the acquirer's ability to not disrupt the routines of the target during integration, 2) HRM strategies play a significant role in the acquirer, both retaining target employees and successfully integrating the target, and 3) technological acquisitions are a newer phenomenon for which there has been little analysis involving HRM strategies.

We organize the chapter as follows. First, we review the different acquisition rationales of technological acquisitions drawing on the strategy literature. We highlight the need for different HRM strategies for different acquisition rationales and identify the different challenges HR managers face in the different acquisition rationales. From this initial analysis of the acquisition rationales and their differential HRM challenges, we emphasize the need for a strategic fit between the HRM strategy and the acquisition rationale. We then examine the multiple national contexts in cross-border acquisitions with reference to coordinated market economies and liberal market economies (Hall & Soskice, 2001). We conclude with our analysis of the use of HRM strategies in the three stages of the acquisition process: pre-announcement, due diligence, and integration. Within this analysis, we address the increased difficulties of cross-border technological acquisitions arising from a lack of fit between the HRM strategies of acquirer and target.

STRATEGIC FIT BETWEEN ACQUISITION RATIONALE AND HRM

The strategic HRM literature emphasizes the need to align a firm's HRM strategy with its business strategy (Fombrun, Tichy & Devanna, 1984; Schuler & Jackson, 1987). Building off Chandler's (1962) argument that organizational structure follows an organization's strategy, Fombrun et al. (1984) emphasize the tight link between strategy, structure, and HRM, with strategy emerging as the dominant force. Consistent with this argument, Schuler and Jackson (1987) show that firms that differ in their strategies also differ in their use of the same HRM practices and that firms that change strategies are likely to change their HRM practices.

We argue that, for successful synergy realization, acquirers need to align their HRM strategy with their acquisition rationale. Thus, it is important to have a clear understanding of the acquisition rationale to be able to specify the role that HRM should play. In order to consider the fit between acquisition rationale and HRM strategies, and to help make sense of the HRM challenges in technological acquisitions, we rely on the post-acquisition resource flows between the acquirer and the target and on the need for structural integration.

Resource Redeployment and Structural Integration of Technological Acquisitions

Technological acquisitions have the potential to create value through the recombination of the technological resources of the acquirer and the target firms (Galunic & Rodan, 1998; Kogut & Zander, 1992). More recent research demonstrates that the pursuit of novel recombinations is the driving force that motivates many technological acquisitions (Karim & Mitchell, 2000; Larsson & Finkelstein, 1999). Therefore, maintaining the technological capabilities of the target, which reside within the routines of their knowledge workers (Nelson & Winter, 1982), is vital to achieving post-acquisition success. Managers must then focus on implementing a HRM strategy that attenuates the routine destroying effects of the post-acquisition integration process.

Two key dimensions identified by Haspeslagh and Jemison (1991) in regard to post-acquisition integration are the need for strategic interdependence and the need for structural autonomy. The acquisition rationale determines the strategic interdependence between the resources of the target and the acquirer. The strategic interdependence necessary for synergy realization determines the directional flows of the redeployed resources and the level of interaction between the resources. The need for strategic interdependence then determines the need for structural integration. Structural integration refers to the absorption of the target into the acquirer leading to the loss of the target’s distinct organizational identity (Puranam et al., 2006; Haspeslagh & Jemison, 1991).

Firms acquire technological firms to either leverage what the target knows (codifiable technological knowledge) or what the target firm does (technological capabilities) (Puranam & Srikanth, 2007). Target technological knowledge refers to the pre-acquisition accumulated knowledge that the target brings to the acquisition while technological capabilities refers to the target’s abilities to create new technological knowledge. The necessity for the continuous interdependence between the acquirer’s and the target’s resources differs between the two acquisition rationales. If a firm wants to acquire the pre-acquisition accumulated intellectual knowledge of the target, then the acquirer only needs a one-time acquisition of the knowledge and does not need to maintain the technological capabilities of the target. On the other hand, a firm acquiring the technological capabilities wishes to continuously benefit from the capabilities of the target post-acquisition. Therefore, a HRM strategy that focuses on retaining the target’s employees and maintaining their routines should lead to greater success when the rationale is to acquire the target’s capabilities.

Acquiring a firm for the purpose of gaining access to their technological knowledge requires the unidirectional flow of resources from the target to the acquirer. Puranam and Srikanth (2007) find that structural integration enhances the ability of the acquirer to transfer knowledge from the target to the acquirer. Though structural integration enhances knowledge transfer, it also disrupts the target’s routines leading to a lack of post-acquisition innovation (Puranam & Srikanth, 2007). This does not pose a problem for knowledge acquisitions as the acquirer does not seek to use of the target’s capabilities in post-acquisition invention. Therefore, the HRM strategy can focus on the expedient transfer of knowledge without being constrained by the necessity to maintain the technological routines of the target. The acquirer still needs to focus on employee retention at least in the short-term to facilitate the knowledge transfer.

HRM plays a much greater role in the successful acquisition of technological capabilities. The difficulty in acquiring capabilities rather than just knowledge relates to the need to maintain the routines of the target. In order to benefit from the target’s technological capabilities, managers must consider whether the capabilities acquired need to be structurally integrated with the acquirer’s technological capabilities. If the synergies rely on constant interaction between the knowledge workers of the acquirer and target, then structural integration is necessary. On the other hand, a modular design where the target’s technological workers do not need to constantly interact with the acquirer’s workers allows the target firm to maintain much of its pre-acquisition autonomy (Puranam et al., 2009).

Structurally integrating the target into the acquirer without disrupting the routines of the target should be the acquirer’s main focus. In the semiconductor industry, Kapoor and Lim (2007) show that target firm inventors patented less when the target was integrated into the acquirer rather than left autonomous. Similarly in computing, communications, and pharmaceutical industries, Puranam and Srikanth (2007) find that structural integration decreased the productivity of the target’s inventors. Much of these results are attributed to the disruption of routines and the lack of corporate culture match between the acquirer and target. As many technological acquisitions are between large acquirers and entrepreneurial targets, the shock of moving from an entrepreneurial, fluid work environment to the more structured work environment of a large corporation inhibits the creativity within the target. HRM must then play a role in the integration process that simultaneously allows for the continuous interaction of the knowledge workers while creating a work environment that does not inhibit the innovativeness of the target’s knowledge workers.

Strategic interdependence does not always require structural integration. Puranam et al. (2009) demonstrate that acquisitions can avoid the necessity of structural integration even when there is a need for continuous interaction if the two merging firms possess ‘common ground’ in their technological capabilities. They find that firms can gain the benefits of coordination usually only obtained through structural integration even though the target remains autonomous due to ‘common ground’ that allows for efficient and effective distant communication. Therefore, HRM can play a multitude of roles in facilitating an environment of post-acquisition innovation: pre-merger partner selection for a target with ‘common ground’, training to create ‘common ground’ post-acquisition, and/or organizational design that creates communication channels allowing for an autonomous target structure with continuous resource interactions between the acquirer and target.

Insert Table 1 about here

Table 1 presents a summary of the directional resource flows, the need for structural integration or autonomy, and the focus of HRM strategy for technological acquisitions for either technological capability or technological knowledge acquisition rationales. We will further discuss the appropriate match of HRM strategies and the post-acquisition integration in our analysis below. But first, we introduce the environmental context of cross-border acquisitions and discuss how the HRM strategies are embedded in the national contexts of the firms.

THE ENVIRONMENTAL CONTEXT OF CROSS-BORDER ACQUISITIONS[1]

Organizations are embedded in national and supra-national environments that can provide a source of competitive advantage for, as well as act as a constraint on, cross-border acquisitions. The result is that organizations do not operate in a vacuum; rather, they are located within certain national boundaries. The key therefore is to discern when and how the national environment influences cross-border acquisitions. Contingency theory suggests that firm strategies and structures will be dependent upon environmental conditions (Lawrence & Lorsch, 1967). For

[1] This section is based on Aguilera & Dencker (2004).

example, Schuler and Jackson (1987) argue that managerial practices need to be aligned with environmental demands so that desired work behaviors arise.

The notion of embeddedness suggests that environmental characteristics such as institutions or culture influence organizational strategies and structures. National culture is often reflected in a country's organizational and managerial practices, such as individual performance awards, team-oriented, short-term results and decentralized and informal organizational structures (Schneider, 1989). Fey et al. (2009) find that different HRM strategies are preferable in different national contexts and that matching the HRM strategy with the appropriate national context affects firm performance. Firms that engage in cross-border acquisitions therefore need to be aware of the possible consequences of national cultural differences. At an abstract level, nations can be divided into two types based on the institutions characterizing their financial and labor market systems: liberal market economies (LME) and coordinated market economies (CME) (Hall & Soskice, 2001; Gospel & Pendleton, 2003).

LME countries are distinguished by competitive market arrangements, with supply and demand forces having a large impact on organizational outcomes and processes. In terms of financial systems, LMEs often are seen as 'shareholder value' nations, with performance measured by market value, returns evaluated on a short-term basis and the state rarely intervening in the economy. In effect, in these nations, the market for corporate governance focuses on current earnings, with regulatory regimes being tolerant of acquisitions. Hall and Soskice (2001) note that, among OECD nations, the following countries can be classified as LMEs: Britain, the US, Australia, Canada, New Zealand and Ireland.

In contrast to LMEs, CMEs – such as Germany, Japan, Switzerland and the Benelux and Scandinavian countries – are characterized by non-market relationships (Hall & Soskice, 2001).

In these ‘stakeholder capitalism’ national models, employees, suppliers, customers and financial institutions are part of the context within which the overall firm is judged. The market for corporate governance is such that firms are not entirely dependent on publicly available financial data or current returns. Thus, firms can be more long-term oriented and the network of relationships among stakeholders will restrict acquisitions in a number of ways.

Adjustments to the national institutional environment are also salient in the HRM field. For instance, HRM practices in CMEs ‘include more restricted employer autonomy, difficult hiring and firing decisions, lower geographic and professional employee mobility, and a stronger link between type of education and career progression’ (Sparrow, Schuler & Jackson, 1994: 286). For instance, in German industrial organization, works councils police collective bargaining agreements and training policies inside the companies and have a legal right to intervene in work reorganization (Casper & Hancke´, 1999). By contrast, in LMEs, industrial relations are characterized primarily by open labor market relationships, with firms having the freedom to hire and fire employees almost at will and collective bargaining being uncoordinated and taking place at the firm level. Bjorkman, Fey and Park (2007) find significant differences in the HRM systems used in the subsidiaries of US, Japanese, and European MNCs in Russia, Finland, and the US.

THE ROLE OF HRM IN CROSS-BORDER TECHNOLOGICAL ACQUISITIONS

It is important to understand when and how HRM can contribute to the success of the acquisition. The literature has divided the acquisition process into three main stages: pre-announcement; due diligence; and integration. The pre-announcement stage tends to be secretive with the evaluation of potential partners and finishes with the announcement of the acquisition of a given firm. The due diligence stage occurs between the announcement of the merger and its closing date and it typically includes planning for the integration, such as communicating expected roles in the newly formed entity (Aguilera & Dencker, 2010). The integration stage implies the physical integration of the various elements of the acquisition following the closing date.

HRM practices influence the success of acquisitions in each stage of the process. During the due diligence stage, HRM tends to focus on ensuring legal compliance, such as with regard to equal opportunity and collective bargaining agreements (Mirvis & Marks, 1992) as well as all planning regarding staffing, compensation, and personnel issues. More specifically, it is at this stage when HRM managers in both companies start designing potential processes to manage retention agreements and assess compensation differences between the potentially merging entities. Although, at this state it is all pending on the deal going through, and while the HR brings in an assessment of the strategies and resources that will be involved in the merger, evidence and practice suggest that HR practices and strategies influence the success of acquisitions the most in the integration stage, when acquisition practices and policies are implemented. As Child, Faulkner and Pitkethly (2001) note, the attention, "to human resources is particularly important following an acquisition, the more so if cultural differences are involved." In effect, these cross-national differences will affect many of the firm practices and policies and magnify the complexity, often due to variation in the nature of integration across countries.

In the following section, we discuss the role of HR in these three phases of cross-border acquisitions. For comparative purposes, we begin our analysis of each stage within the same country group and continue with a discussion of each stage between firms belonging to different national groups. Since the vast majority of target's of technological acquisitions have historically come from LME countries (Inkpen et al., 2000), most of our analysis differentiates between the acquirer being from a CME versus a LME country. Specifically, we focus on the following recognized HR functions: HR planning, communication, staffing, training and development, compensation structure, and organizational design and control dimensions (Pucik, 1988; Bjorkman et al., 2007). Table 2 presents a summation of the match between acquisition stage and the HR functions with comparisons between domestic and cross-border technological acquisitions.

Insert Table 2 about here

Pre-announcement stage

Technological acquisition are unique in two ways that affect the pre-announcement stage of the acquisition: 1) the target possesses much control over who acquires it (Graebner, 2009; Granstrand & Sjolander, 1990), and 2) financial compensation is not the sole or even the main consideration of the target since many targets are entrepreneurial firms in which the entrepreneur/seller has an emotional connection to the firm (Graebner, 2009). This puts the acquirer in a unique possession of having to not only sell the financial benefits of the acquisition to the target but also sell how the acquirer will create benefits for the target's technology (Graebner, 2009). Therefore, communication is vital in the pre-announcement stage to assure the target that the acquisition will benefit the target firm beyond financial incentives.

Although HRM usually plays a minimal role in the pre-announcement stage, its role should include that of strategic decision making (Antila, 2006). Antila (2006) argues that HRM should be involved in the decision process of selecting an appropriate partner. Though usually delayed to the due diligence stage, analyzing how the target will be integrated and to what extent should initially take place in the pre-announcement stage. The management of Cisco believes that one of the keys to their ability to successfully acquire technological firms is their focus on corporate culture fit during target selection (Inkpen et al., 2000). Unfortunately, Clemente and Greenspan (2000) find that less than 40 percent of the HR managers in their study stated that they were involved in acquisition strategy planning or target selection screening.

Cross-border acquisitions provide additional difficulties in the pre-announcement period. In the pre-announcement stage, lack of access to the target firm plagues cross-border acquisitions (Antila, 2006). With geographic distance, HR planning may not be possible until the due diligence stage. Therefore, acquirers must maintain the option to walk away during the due diligence stage. The willingness to balk after the acquisition announcement if due diligence uncovers potential complications explains recent empirical findings that cultural distance positively affects acquisition performance (Chakrabarti, Gupta-Mukherjee & Jayaraman, 2009). Consistent with this explanation, Aguilera and Dencker (2010) find that acquisition announcements are more likely to be withdrawn with greater cultural distance between the acquirer and target.

Cross-border acquisitions are also susceptible to communication difficulties (Piekkari et al., 2005). Timely decision making characterizes the innovative industries of the targets. Large acquirers from CME countries are not structured to make timely decisions as many of the stakeholders of the acquirer must be considered. Inkpen et al. (2000) find that the greater bureaucracy in acquirers from CME countries creates communication problems and delays in pre-integration planning which creates difficulties in the integration stage since the target's employees face many uncertainties about the future of their jobs.

Due diligence stage

With the inherent difficulties in HR planning in the pre-announcement period for cross-border acquisitions, HR planning becomes paramount to post-acquisition success in the due diligence stage. The acquirer must communicate to the target the planned post-acquisition HRM system to be put in place. Colombo et al. (2007) find a positive relationship between pre-merger planning of the integration process and long-term acquisition performance. As the HRM systems of large corporations often do not align with the HRM systems of entrepreneurial firms (Zenger & Lazzarini, 2004), communicating their intentions in the due diligence stage allows time for negotiations that can lead to an optimal HRM system. Graebner (2009) finds through multiple case studies that while the sellers of the entrepreneurial firms seek non-financial incentives such as achieving strategic success for their business, maintaining their firm's autonomy, protecting their employees' jobs, and receiving important job responsibilities for themselves if they decide to stay with the firm, acquirers believe that they can smooth over any misrepresentations of their post-acquisition plans with financial considerations which leads to post-acquisition employee resistance.

When considering cross-border technology acquisitions, corporate cultures can significantly differ between firms from CME countries and firms from LME countries. While US firms have begun to establish divisions with the sole responsibility of handling the integration process, firms from CME countries need to also set up dedicated divisions that not only integrate the target, but also focus on understanding the corporate culture of technology firms. One European firm in Inkpen et al.'s (2000) case studies created an office in Silicon Valley for the sole purpose of understanding and absorbing the Silicon Valley corporate culture. This better enables the acquirer to understand the corporate culture that is at the root of the innovativeness of the target firm. Therefore, during integration the acquirer can better understand how to integrate the target without disrupting the routines of the target.

Integration stage

HRM's main objective during the integration stage is to obtain the knowledge or retain the capabilities that motivate the acquisition. Therefore, HRM should focus on communication, staffing, compensation structure, and organizational design and control dimensions. We now analyze the different HRM strategies appropriate for structurally integrated acquisitions and those that maintain target autonomy. We also consider the integration speed as some acquirers prefer to initially maintain target autonomy with a gradual structural integration strategy.

The vast amount of the value destruction in acquisitions occurs during the integration process (Birkinshaw, Bresman & Hakanson, 2000; Graebner, 2004; Ranft & Lord, 2002). This especially holds true in technological acquisitions where much of the value resides in the routines of the target. Therefore, acquirers maintain target autonomy in many acquisitions where synergy realization does not require technological resource interdependence (Puranam & Srikanth, 2007; Puranam et al., 2009). With respect to cross-border acquisitions, Child et al. (2001) find differing levels of integration across countries, ranging from no integration, to partial integration, to full integration. For example, they demonstrate that firms in the US and the UK integrate their subsidiaries to a greater extent than do firms in Japan, Germany and France.

Recent research has investigated the link between cultural distance and the integration/autonomy dilemma. Slangen (2006) finds that national cultural distance has a negative impact on acquisition performance at greater levels of integration while having a positive impact when the target is left autonomous. Similarly, Bjorkman, Stahl and Vaara (2007) find that structural integration enhances the negative effect of cultural distance, but finds that the use of social integration mechanisms such as personnel rotation, short-term visits, participation in joint training programs and meetings, and membership in cross-unit teams can attenuate the negative interaction of cultural distance and structural integration on performance.

While autonomy can alleviate concerns of disrupting the target's routines, changes in compensation structure and control dimensions can still negatively affect the entrepreneurial spirit of the target. The difficulties in maintaining the compensation structure of targets when the target comes from an LME country and the acquirer from a CME country is exacerbated in technological acquisitions due to target employees being compensated with stock options. Since many acquirers from CME countries are not publicly traded firms (Inkpen et al., 2000), they do not have the ability to offer the stock options that entrepreneurial firm employees have come to expect. Even if they could offer stock options, the stock of large corporations do not possess the same intensity of incentives as the high growth stock options of entrepreneurial firms. As technology targets are usually extremely small compared to their conglomerate acquirers from CME countries, Inkpen et al. (2000) find that acquirers from CME countries are unwilling to offer stock options as it is not worth changing compensation policy for only a small part of their large conglomerate as it may cause conflict among the rest of their conglomerate employees who do not receive stock options.

Staffing and communication play an interconnected role in the integration process. While staffing decisions should be made in the due diligence stage, the integration stage should have no ambiguity in the staffing decisions with communication playing a key role in alleviating any uncertainty on staffing decisions and structure. Inkpen et al. (2000) find that ambiguity regarding who is in control of the target post-acquisition creates an unproductive work environment. Firms from CME countries are more hierarchical with a focus on long-term success and the good of all stakeholders which slows down the decision making process. As technology firms operate in rapidly changing technological environments, decisions need to be made quickly. Therefore, staffing with respect to who has authority to make decisions needs to be put in place immediately and communicated effectively. Differences in communication and staffing strategies exist between firms from LME and CME countries. Lam (2003) finds that Japanese firms use a more ethnocentric HRM strategy by placing Japanese expatriates in their foreign subsidiaries to facilitate the transfer of the subsidiaries knowledge to the Japanese headquarters while US firms deployed a more global HRM strategy allowing for the multinational exchange of scientific talent among the different subsidiaries and headquarters.

With technology acquisitions that structurally integrate, much attention needs to focus on creating mechanisms and routines for capability interdependence that will allow for synergy realization without destroying the routines of the target. Cisco is known for its stellar record in integrating small technology firms. Cisco has a devoted integration team for which its sole job is to integrate the target into the acquirer. As Child et al. (2001: 3) point out, in the merger between Cisco and Cerent Corporation, Cisco utilized a transition team that 'mapped' Cerent employees into jobs at Cisco, and communicated this information to these employees. Although integration is costly for Cisco Systems, it prefers to acquire knowledge through acquisitions if the development cycle is longer than six months (Aguilera & Dencker, 2004). Cisco also tries to put key people from the target in key positions and has been able to retain about half of their targets' CEOs in the post-acquisition firm (Inkpen et al., 2000).

Acquirers that structurally integrate must also consider the integration speed. Some firms prefer to gradually integrate the target over a number of years while others prefer to instantly integrate the target and to immediately start establishing new routines for the target. Colombo et al. (2007) find that delaying the integration process negatively affects long-term acquisition performance. The speed of integration is also dependent on the industry as the product development cycle is often much shorter in information technology (IT) firms than in pharmaceutical firms. For example, GE Capital attempts to integrate each target as soon as possible by creating a 100-day integration plan for each acquisition (Askkenas, DeMonaco & Francis, 1998). Similarly, Cisco tries to integrate their targets as quick as possible and encounters more integration difficulties when they delay the integration process (Inkpen et al., 2000). Similar cross-country variation exists in terms of integration speed (Empson, 2000; Inkpen, 2000). The need to satisfy multiple stakeholders in CME countries delays the decision making process which in turn can delay progress in integration. With the negative effects that delayed decision making can have on the entrepreneurial environment of target firm, it is even more important for firms from CME countries to establish a decision making protocol or develop the organizational design in the due diligence stage.

DISCUSSION AND CONCLUSION

In this chapter, we address the use of HRM systems in cross-border technological acquisitions. Since the acquirer's attention is more focused on limiting alienation of the target's employees rather than the rationalization of resources in technological acquisitions (Rees & Edwards, 2009), technological acquisitions deserve special attention in the choice of HRM strategy implemented. We argue that there needs to be a strategic fit between the directional flows of the post-acquisition redeployed resources, their strategic interdependence, and the necessity of structural integration with the particular HRM strategy implemented. We further discuss that the appropriate strategic fit is contingent on the national contexts of the merging firms.

In our analysis we argue that acquirers need to incorporate HRM into both the pre-announcement and due diligence stages of the acquisition where much of the previous research has focused solely on the integration stage. While most acquirers do not utilize their HR managers during the target selection process (Clemente & Greenspan, 2000), HR managers should have a more strategic role in the pre-announcement period because coming to an agreement with the right partner will turn out to be critical for the post-integration acquisition success. Cisco management has acknowledged that picking the wrong partner in terms of corporate culture fit is difficult to overcome in the integration stage (Inkpen et al., 2000). Organizational culture fit should be assessed during the pre-annoucement stage and work through during the due diligence stage so when the acquisition takes place employees can go through the least turmoil possible. Thus, the majority of the HR planning must happen in the due diligence stage in technological acquisitions as delays in setting the new organizational design creates ambiguities that lead to the deterioration of the fast paced, entrepreneurial environment.

The HRM strategy implemented in the integration stage depends on the need for structural integration. With structural integration the HRM strategy needs to focus on maintaining the routines of the target's knowledge workers in place. Cisco does this by putting great emphasis not only on keeping the key employees of the target but also by putting them in key positions of the post-acquisition firm (Inkpen et al., 2000). When the target maintains structural autonomy, the acquirer needs to create communication channels and a common organization identity through social integration mechanisms such as personnel rotation, short-term visits, participation in joint training programs and meetings, and membership in cross-unit teams (Bjorkman et al., 2007).

National context affects what HRM strategies work in different target nations. While the majority of the technological acquisitions are undertaken between firms that are both from LME countries, firms from CME countries are increasingly undertaking technological acquisitions of targets from LME countries. CME firms' major difficulties in acquiring LME technological targets lies in maintaining the pre-acquisition compensation structure and the fast-paced decision making culture of the target. CME firms' stakeholder governance systems are not structured to either offer high impact compensation mechanisms such as stock options or make fast-paced decisions.

In conclusion research shows that managers must account for their strategic rationale for the technological acquisition and then apply the appropriate HRM functions that will enhance acquisition performance. Acquirers from CME countries must recognize the entrepreneurial environment of the target and adjust their management style with the target to keep the target's routines intact. For CME firms to be able to successfully acquire technological targets, they must be able to implement a HRM strategy that maintains the entrepreneurial culture of the target. While we have focused on the use of HRM systems in the target, Rees and Edwards (2009) find that acquirers can use acquisitions of technological firms from LME countries to implement the high-powered HRM systems traditionally found in entrepreneurial targets within the acquirer. Therefore, the acquirer not only maintains the corporate environment and routines of the target but can upgrade its own HRM systems.

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Table 1. Technological acquisition rationale and HRM Strategy

Technological Acquisition Rationale	Direction of Resource Flows	Autonomy or Integration	HRM Strategy
Technological capabilities	Bidirectional	Integration	Maintain the routines and corporate culture of the target
	Target to Acquirer	Autonomy	Create communication channels and common corporate identity
Technological knowledge	Target to Acquirer	Integration	Create communication channels and work design for transfer of knowledge to target; maintaining the routines and culture of the target is not of the utmost importance

Table 2. The Role of HRM in Cross-Border Technological Acquisitions

Acquisition Stage	HRM Strategy	Cross-border Acquisitions
Pre-Announcement	• Due diligence and target selection o Incorporate HR management into strategic decision making o Assure business cultures can be merged without losing capabilities • Communication concerning post-acquisition use of resources o Entrepreneurs usually more concerned with success of firm rather than financial incentives	• Due diligence difficulties o Access to target difficult leading to delay in much of due diligence o Must be willing to abandon acquisition post-announcement • Communication much slower in CME nations due to stakeholder structure o Clear and timely communication must take place due to the fast pace of technological industries
Due diligence	• HR planning o Plan how the HRM systems will be augmented or integrated o Must consider entrepreneurial culture of target	• Due diligence not completed in pre-announcement period • HR planning o Consider HRM functions of target that are not consistent with values of CME firms (e.g., stock options)
Integration	• Autonomy vs. Integration o Need for strategic interdependence of resources • Integration Speed o Communicates employee roles immediately • Compensation Structure o High powered incentives such as stock options • Staffing & Communication o Retain employees of target o Give key employees key positions in post-acquisition firm o Expedient communication and clear decision making control established due to fast pace of technological industries	• Autonomy vs. Integration o Cultural distance can have a negative effect on performance with integration o Social integration mechanisms can attenuate negative effects of cultural distance (e.g., joint training) • Integration Speed o CME hierarchies slow down integration process • Compensation Structure o Many CME firms are not structured to offer high powered incentives such as stock options • Staffing & Communication o Slow decision making of CME firms disrupts entrepreneurial environment o CME firms less willing to integrate and/or interchange knowledge workers