

Section I

The Cutting-Edge in HRM

Chapter I

Web-Based Organizing in Traditional Brick-and-Mortar Companies: The Impact on HR

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Abstract

This chapter introduces the notion of how old-economy brick-and-mortar firms are adapting their HRM policies and practices and the roles of their HR departments in light of newly introduced Web-based business-to-business transaction practices. It argues that the Internet has introduced three new business models in old-economy companies: the Internet as a marketplace, the Internet as a supply chain integrator, and the Internet as

a catalyst for business model redefinition. These innovative ways of organizing are providing HR with opportunities to rise to new challenges and increase their added value to the firm.

Introduction

The so-called new economy has taken a beating over the past few years. The dot.coms have come—and many have gone again. Even the last great hope of the new revolutionary age, Enron, filed for bankruptcy. However, the phenomenon known as the Internet is not going to go away; it just keeps expanding. Slowly but surely more and more individuals and companies are coming to rely on it for doing business. Maybe the changes will be more gradual than originally predicted. But the changes are happening. The purpose of this chapter is to look at some of the possible consequences of these current developments for HR.

The Internet can, of course, be used for different purposes. Through the use of e-mail and similar derivatives, it is a messaging medium par excellence. However, it is more than mere communication: it is also a medium for entertainment and information. Moreover, the Internet can be used as a medium for transactions, for buying and selling. Although all applications have implications for the utilization of an organization's human resources, this chapter concentrates on the area likely to impinge closest on most organizations: the medium of *transactions*.

The largest growth in transactions using the Internet has been in the area of transactions between businesses; the so-called business-to-business (B2B) sector. Since the end of the 1990s when global e-commerce was worth a little more than \$150 billion (*The Economist*, February 26, 2000), the growth rate has slowed, but is still continuing strongly. Forrester (www.forrester.com), a respected research organization in the field, expects this sector to reach \$7 trillion or 27% of total U.S. trade by 2006. It is hard to know how seriously to take such a dramatic prediction, but major growth in this area—despite the downturn both in the world economy in general and in Internet-related stocks in particular—seems inevitable.

One particular area of growth in B2B transactions is taking place in old-economy firms. These companies are involved in transactions within the new economy in different ways. Firstly, they can invest in and even take over new

economy companies. Secondly, they can start up their own subsidiaries to operate within the new economy. Thirdly, *they can attempt to incorporate the new economy into their old-economy organization*. It is this third area that is probably most interesting from the point of view of the utilization of human resources. This is because old-economy companies, which start up their own new economy companies, normally run them as separate entities. Clearly financial reasons play an important part in this decision, but so do organizational considerations. New economy companies may require a different organizational structure and culture than the parent company, and hence running new economy companies as separate entities minimizes any possible cross-contamination from the new to the old or vice versa. However, when old-economy companies attempt to integrate business-to-business e-commerce into their existing organization, solving the problems that arise can provide new challenges and opportunities in HRM. It is on this third way of organizing that this chapter concentrates.

Because this B2B growth area is concentrated in old-economy companies that are the majority employers, it is likely to have a significant impact on HRM. Most HR professionals are still concentrated in these medium-sized and large, old-economy companies, and this is where the HR function is subject to radical and dramatic change because of the implications of Web-based organizing. The new economy start-ups, those still around, hardly use the HR function in spite of the proclaimed importance of their people to their success. This chapter therefore focuses on the consequences of Web-based B2B transactions in medium-sized and large, old-economy companies, and discusses the implications for HRM and HR professionals.

However, before we begin our exploration, we will give an overview of the striking characteristics that distinguish Web-based transactions from more traditional transactions. We will then continue with a discussion of the different ways in which old-economy companies are attempting to integrate elements of Web-based organizing into their current business and the resultant implications for HRM. We must remark though that there is a lack of reliable information about this whole area. Most publications at the time of writing have been based more on personal experience than research and tend to focus on the same few companies that are often not only reorganizing to accommodate the new Internet economy, but are also intimately involved in selling equipment or services related to it. This chapter is therefore based on personal experience of working in the field, interviews with others more experienced than us, and a review of the available literature sources.

The Effect of the Internet on Business Transactions

The Internet is having a major impact on business transactions because of the different opportunities it offers. A number of significant differences distinguish transactions using electronic markets from what has gone before. These include the opportunities for global sourcing and selling, mass-customization, and networking (Timmers, 1999). By lowering the costs of transactions and information, technology has reduced market frictions and provided a significant impetus to the process of broadening world markets (Greenspan, 2000). This means that considerations about where to locate become secondary, whereas price competition increases. Internet technologies also allow specification design and pricing online, which again increases price competition. This facilitates meeting customer needs, often through a network of multiple business partners able to deliver value more quickly and cheaply direct to the customer. Experts have argued that transactions using e-commerce come far closer to the economists' ideal of perfect competition than transactions using traditional media, as barriers to entry are lowered, transaction costs are reduced, and buyers have improved access to information (see Shapiro & Varian, 1999; Wyckoff, 1997).

There are three main responses to the developments in business-to-business transactions via the Internet being observed (Wright & Dyer, 2000):

- **E-commerce:** buying and selling via the Internet;
- **Supply chain integration:** collaboration throughout the total value chain; and
- **Fully integrated e-business:** internal and external integration sharing real-time information (resulting in 'bricks-and-clicks' or 'clicks-and-mortar' hybrid organizations).

Wright and Dyer also identify a fourth derivative, enterprise resource planning (ERP), however this focuses on developing an intranet for internal integration within a firm, and less on relationships between businesses. Here we shall focus on the three B2B outcomes identified.

Firstly, the Internet is seen as an extension of normal market channels for buying and selling. In this approach, companies primarily use the Internet in order to

improve the quality and speed of customer service, and as a medium to buy and sell more products or services cheaper. Thus for every business, the Internet—at the very least—offers opportunities for reducing operating cost levels and enhancing service levels (Venkatraman, 2000).

The second way in which old-economy companies attempt to integrate the new economy is by using the Internet to expand and improve their current collaborative relationships among their key suppliers; the Internet can encourage close integration between the partners through total value chain integration (Timmers, 1999), establishing virtual marketplaces within the supply chain primarily to reduce transaction costs.

Finally, the third approach, which is much more fundamental, requires that old-economy organizations totally rethink their business models before deciding on their e-commerce and supply chain strategies. This approach requires management to re-examine why customers buy from them, look at all stages in the processes involved, and consider how the Internet could impact each stage of the processes. Then, if necessary, new business models can be developed to fully integrate the new economy principles. This implies organizational revolution.

Alongside this rise in e-business, there is a lack of reliable data on the people issues arising from a move from a traditional brick-and-mortar business model to an e-business model. The changes however imply a need to learn to use these new technologies and to embrace a climate of constant change. Some specific outcomes might be a need to adopt more aggressive recruitment campaigns to attract the necessary technical staff when competing against the dynamic dot.coms. There may also be a resultant culture clash when the new 'techies' join the company on high salaries, compared with existing non-technical staff, which might lead to resentment and perceived unfair treatment.

In a review of the potential implications, Wright and Dyer (2000) have suggested six broad HRM principles in response to the issues e-business is raising:

1. The company should promote individual autonomy and personal accountability at all levels of the organization through the process of work design, to make the company more flexible to change.
2. Shared organizational vision and values should be reinforced through HRM policies and practices, particularly recruitment and training, to maintain a sense of community in times of change.

3. The company needs to ensure employees understand the business strategy and context so that they can see where they fit into the whole. This can be achieved through communication, participation, training, and performance-linked reward in particular.
4. There is a need to develop a learning organization, sharing the responsibility jointly between employees and the company to keep competency levels at the leading edge.
5. It is also important to develop a sense of belonging, trust, support, and commitment throughout the organization. This entails arranging appropriate induction, providing access to information, investing in employee development, being a responsible employer with regard to work-life balance, and being honest regarding job security.
6. And ultimately, rewards must be provided which are perceived to be commensurate with the effort applied.

These implications could be argued to apply across multiple types of organization; however, we explore these implications in detail in the context of the e-business model throughout this chapter. Each of the three responses to the Internet economy is now explored in turn, shedding further light on the major changes taking place in both HRM practices and within the HR department.

Companies Buying and Selling on the Internet

The first major developments in this area started in the mid-1990s and saw major U.S. firms such as Wal-Mart and General Electric moving to buying and selling online to cut costs and speed supplies. The aims of cutting paperwork and time may have been simple, but the results were impressive (see Box 1).

The initial rapid spread of business exchanges was followed by a realization by many large customers that if they combined their individual buying power with that of their large competitors into a separate buying and selling exchange, then this might have a major effect on their procurement costs. For example, General Motors, Ford, Daimler Chrysler, and Renault-Nissan merged their individual exchanges in 2000 to create Covisint, a virtual marketplace for the automotive

industry. Later they were also joined by PSA Peugeot Citroen. In 2001, Covisint handled procurement transactions worth more than \$45 billion (*Financial Times*, November 13, 2001), and in 2003, the Covisint user base expanded by 178% (www.covisint.com). Covisint provides the global motor industry with a common connection to its suppliers and customers based on common business processes, reducing costs, increasing efficiency, enhancing quality, and improving time-to-market.

Large companies can use the Internet for buying and selling to put themselves at the center of new e-business eco-systems that transform their way of doing business and their way of organizing. The interconnectivity demanded externally influences how the company is organized. For example, order-taking systems have to be made very customer-friendly and closely linked with planning and production systems in order to ensure just-in-time delivery and zero stocks. Hence we might expect the marketing function to increase in status and power at the expense of the sales function, as customer relationships become more important and more and more direct sales are taken over by the Internet.

Procurement will also have to be online to ensure adequate supplies. Closer links within the whole administrative system will also be required to ensure that, as far as possible, the whole paper chain from order to invoice to payment should proceed automatically. Finally, logistics and distribution must also be linked to the system, as delivery windows agreed with customers have to be met. These functions are thus also likely to gain in status and importance. But what of the impact on the HR function?

Box 1. GE saves time and costs by using the Internet

GE has built up a trading process network, which is a Web-based link to suppliers so that they can bid for GE components' contracts. This global supplier network links 1,500 corporate buyers and around 16,000 suppliers. According to information issued by GE in 2000, the system cut procurement cycles in half, processing costs by one-third and the cost of goods purchased by between five and 50% (*The Economist*, March 4, 2000). Every GE company now has targets for e-auctioning of around 60-70% of total spending, and this e-procurement model is applied not only to indirect spending, but to many services as well (*Financial Times*, December 5, 2001). Indeed GE's CEO, Jeff Imelt, has been reported as going even further in suggesting that his managers should either digitalize or outsource all parts of their business that do not touch the customer directly (Useem & Watson, 2001).

Implications for HRM

The implications for the HR function of large companies doing business through e-hubs have not been as immediate as those observed for the marketing and distribution functions discussed earlier, but they are becoming clearer. Many Western-economy companies need to lower their costs as global competition increases from developing countries with lower operating costs. In order to avoid being classified as just another commodity supplier, they also have to endeavor to add unique value by being able to offer exceptional levels of customer service and customized products and services.

Companies aiming to reduce costs, while at the same time increasing flexibility and speed of response to customer wishes, are forced to adopt innovative practices. These new practices fall under three broad headings:

- the introduction of flexible working practices to meet flexible production requirements;
- an agile production approach, focusing on minimizing buffers and concentrating on a just-in-time supply approach; and
- globalization of the marketplace and workforce.

An overview of each approach is presented next.

Flexible Working Practices

Introducing flexibility to the working practices of a company can have multiple meanings in different contexts (Brewster et al., 2001). Cost savings can be achieved by matching working hours as closely as possible to fluctuations in supply and demand. This can also improve productivity by enabling people to work the hours that suit them, often leading to lower levels of absence among employees. Long-term uncertainty for the company can be reduced by focusing on non-permanent employment contracts and external resourcing arrangements. Companies are also offering new patterns of working to tap into areas of the labor market previously ignored where essential skills and manpower are available. Further flexibility can be achieved by renegotiating the range of tasks existing employees are expected to undertake. Finally, in order to reduce uncertainty for the company, flexible forms of financial reward linking individual

and company performance enable salary costs to represent financial performance more closely.

The extent to which each of these practices is adopted relates largely to the organizational context: the company's strategic choices, the norms within the sector, and the national level regulations and standards in force. For example, decisions regarding the introduction of such schemes as profit sharing or share options are most commonly closely related to the tax laws within a country. There may also be regulations through employment law or standards across a sector regarding the type of contracts a company is able to issue.

A final warning regarding the introduction of more flexible working practices involves the notion of a company creating a core and periphery workforce (Atkinson & Meager, 1986). The core consists of those employees on traditional permanent contracts, while all those on non-standard contracts make up the periphery. Extra attention needs to be paid on how the company manages this form of organization: how it communicates with employees who are not present throughout the week, how it motivates periphery employees so that they do not feel like second-class employees, and how people working non-standard hours are actually supervised. All these challenges raise new issues for the HR department to master.

Agile Production Techniques

Cost and quality issues have dominated production manufacturing environments throughout the last decade, resulting in the idea of lean manufacturing emanating from practices in place in the Japanese motor industry in particular (McCurry & McIvor, 2002). Characteristics of lean manufacturing include integrated production flow, low inventory, quality enhancement, flexible working practices, a problem-solving focus, and flat organization structures. These have led to linked HRM practices in the form of high performance work systems (HPWSs). These high performance or high involvement HRM systems focus on four core practices: employee development, flexible job design in terms of employee participation and teamwork, incentive-based payment systems, and investment in recruitment and selection (Boselie & Dietz, 2003). Team-based organizational change programs (such as 6 Sigma, Quality Circles, and TQM) have also been associated with this approach to HRM. These programs emphasize process management, customer focus, organizational learning, and self-managed teams (Wood, 1999). However, the literature is not

unequivocal to the benefits of lean production, and criticism of the original Japanese approach has been voiced (Cusumano, 1994).

More recently, attention has switched to developing an agile production system. Lean production systems were seen as limiting innovation (McCurry & McIvor, 2002), which is undesirable in the fast-moving B2B transaction world. More attention is paid under the agile model of production to readiness for change and forming virtual partnerships. Agility is described as focusing on customer rather than market needs, mass customization rather than mass or lean production (Sharp, Irani, & Desai, 1999). This means that agility entails more than just the production system — it is a holistic approach incorporating technical, information, and human resource considerations. In essence, an agile production system implies a very fast and efficient adaptive learning organization, encouraging multi-skilling, empowerment, and reconfigurable teams. Under such a system, HRM practices focus particularly on employee development, the encouragement of learning, and knowledge management. These issues are discussed further in the following section, exploring in more depth the virtual partnerships being formed within the e-business community.

Globalization

Finally, as a further outcome of the globalization of the marketplace, we might also expect to see a globalization of the potential workforce for companies involved in e-commerce. The apparent boundaries between countries appear to be lowering, and as opportunities for buying and selling products and services across these boundaries increase, new opportunities for international expansion or the hiring-in of non-home country nationals who have a better understanding of international markets might be expected to occur. This means the introduction of international HRM practices, a new area of expertise for HR professionals used to operating in a single country. The national culture and institutions — including laws, standards, and common practice for the different countries — need to be considered alongside any international business strategy to ensure effective HRM (Harris, Brewster, & Sparrow, 2003).

Implications for the HR Department

To meet the need for cost savings and improved speed of service, there is an obvious need for better, faster, and smarter HR solutions. Alongside a

requirement for a broadening of the expertise portfolio of HR professionals to cover flexible working practices, high performance work systems, and globalization issues, there is also a demand for increased flexibility of systems, providing more services online, streamlining administration, and supporting the process-driven work systems environment.

HR has for a long time been locked into transactional activities (administration) and traditional activities (such as recruitment, selection, and training) which take up the majority of time (Wright & Dyer, 2000). Many HR departments are so bogged down in such activities that they have no time for higher value-added services such as knowledge management, culture management, and strategic redirection and renewal. However, information technology is changing things. Transactional tasks are now largely carried out using IT systems either in-house or outsourced. Traditional and transformational activities are also gradually moving this way with the increasing introduction of e-enabled delivery of HR (e-HRM), saving more cost and time with online recruitment and training systems in particular. This e-HRM trend appears to be set to continue in the context of the Internet/intranet business model (Ruël, Bondarouk, & Looise, 2003). This point of view is, needless to say, shared by those who supply such e-HRM systems and who predict that Employee Relations Management (ERM) packages market will be a best seller (Siebel, 2001).

The resultant impact of e-HRM on the roles of HR professionals has been explored by Van den Bos and Methorst (2004) in relation to the roles of Ulrich's (1997) well-known model that divides out people and process-oriented activities, and operational and strategic activities. The use of IT to support operational processes can increase the amount of information available to people by providing online access to HRM policy and practice handbooks. Strategic processes can be streamlined through online notification of events such as holiday or sickness, and online selection of options such as training course registration and cafeteria-style benefit systems. Internet- or intranet-based operational activities focusing on people can facilitate collaboration between individuals through discussion groups, video-conferencing, and communities of practice, as well as giving people the opportunity to carry out their work at remote locations through tele-working facilities. Finally, at the strategic level, e-HRM can be applied to help people be constantly ready for change, encouraging online training and learning activities, as well as 360° feedback systems and internal vacancy application systems.

Hansen and Deimler (2001) describe such an e-HRM system as a fully integrated B2E (business-to-employee) enterprise portal. This form of realizing

major cost reductions has already been undertaken by a number of large organizations such as Cisco Systems, Coca-Cola Co., and Delta Air. These B2E systems combine traditional e-HRM with online business processes (employee interaction, information searches, work scheduling) and community services (balancing work and home life by allowing people to deal with certain personal tasks at work, for example, discount deals and services through different companies).

Implementing e-HRM does however require difficult decisions to be made regarding the extent to which the new systems should be outsourced to gain the relevant expertise and cost-savings, and the required balance between technological and personal service delivery (Van den Bos & Methorst, 2004). In order to realize potential savings, the company also needs to ensure its managers and employees understand the benefits of the new system and are actually prepared to use it; this is an important task for HR to adopt to ensure successful implementation.

Virtual Supply Chain Communities

Another way in which old-economy companies are reacting to the new challenges and opportunities posed by the growth of business-to-business transactions using the Internet is either to set up or join supply chain communities. Such communities are most commonly a vertical chain of all the key suppliers involved in servicing one major customer.

The supply chain is a major cost to companies, accounting for 60-80% of many companies' total costs (Bovet & Martha, 2000). It is therefore logical for companies to focus on extracting greater value from these operations. The ultimate aim of any manufacturer is to build-to-order and not to carry stock, since the financial savings are potentially massive. This goal has probably only been attained by a few companies such as Dell Computers and Cisco Systems (see Box 2) (Hartman & Sifonis, 2000). However, it has been reported that although it takes on average between 60 and 100 days to make a car and deliver it to the customer, manufacturers such as General Motors and Toyota are planning systems to bring this down to five days (*The Economist*, January 8, 2000). Cutting cycle time to this extent will result in taking around 50% out of overall inventory for car manufacturers. With at least \$20 billion in parts on hand at any one time to support assembly systems, the savings on carrying costs

Box 2. Cisco Systems' total value chain integration

Cisco Systems is a classic example of a manufacturer using a total value supply chain network. Cisco develops and manufactures high performance networking products that link geographically dispersed local and wide area networks. The company has created an elaborate web of partners on the Internet, including manufacturers, assemblers, distributors, original equipment manufacturer strategic partners, and sales channels. Products are conceived, designed, developed, manufactured, sold, serviced, and enhanced from multiple locations all on the Web. Cisco transfers its strategic knowledge (customer requirements and company strategy) and product knowledge assets to its strategic partners. In return Cisco receives system design input and planning knowledge from these partners. With Cisco's active encouragement, participants lubricate the system by freely exchanging knowledge and opinions. This community enables dramatically lower product cycle times, reduced costs, and fast innovation. Cisco's value network is drenched in intangible value exchanges that create its strategic advantage in the market (Tapscott, 1999).

alone could add up to several hundred million dollars per year (*The Economist*, August 26, 2000).

If an organization is to be successful in becoming a member of a virtual supply chain community, it will have to maintain the high performance work systems we mentioned in the last section, while continuing to develop in other areas as well. There needs to be a balance between the rationality and order resulting from the HPWS techniques, and a willingness to constantly consider change and implement innovation quickly as in the agile production model discussed earlier. This balance is difficult for any organization to achieve, yet it is not impossible. For example, the definitive study of why Toyota was able to achieve such a dominant position in the world automotive market concluded that this balance was the major reason for its success (Fujimoto, 1999).

It is obvious that such fundamental change requires innovation not just in a firm's own systems, but also in its whole supply chain. Web-based links need to be formed between both internal departments and suppliers and customers right through the chain. It also means integrating the whole value chain into virtual business communities (Timmers, 1999), virtual value chains (Rayport & Sviolka, 1995), or value nets (Bovet & Martha, 2000) depending on the preferred terminology.

Close and trusting collaboration between partners is essential in such a chain. No business involved can afford to have even one weak link in the chain

because, increasingly, a firm's competitiveness does not depend on its own resources and capabilities alone, but is decided through its ability to mobilize its whole value chain. Hence, it is value chains rather than businesses that are competing against each other (Cool, 1997). In a virtual supply chain community, the relationship between partners will be one of collaboration, based on long-term relationships and joint involvement in new product development. Such value chain collaboration is critically dependent on affiliation, loyalty, and trust (Van Alstyne, 1997).

The ability to consider change and innovation in the context of a virtual supply chain is thus complex. It requires the development and maintenance of a *climate of trust* between network partners, both internally and externally. *Learning* both at individual and at organizational levels will also have to be of a high order in order to facilitate the necessary continuous improvement and innovation. Developing and supporting both trust relationships and a learning climate simultaneously thus appears to be the crucial competence required by companies.

The academic literature on trust among individuals has a distinguished history and, recently, the high incidence of mergers, alliances, joint ventures, and outsourcing interesting work has also been carried out at the organizational level (e.g., Blois, 1999; Child & Faulkner, 1998).

A major reason why trust is important in the context of a virtual supply chain is as a possible governing device. Traditionally the most popular governing device in relations between customer and supplier has been the legal contract. Unfortunately, legal contracts rely on being able to prescribe what should happen in all possible eventualities for their effectiveness. Thus, the more unpredictable the situation, the less effective any legal contract will be (Nooteboom, 2000). Virtual supply chains, in particular, operate within unpredictable dynamic situations. If a partner relies on methods of governance other than legal formality, this sends a clear message to the other partner; therefore, to trust someone or something is to accept risk, vulnerability, and uncertainty. It is not a state to be entered into lightly. Nevertheless, a relationship of trust can be economically sensible because the opposite — mistrust — may, in fact, add to the transaction costs involved in a relationship.

There are important distinctions in organizational trust between technical or competence trust, and intentional or motivational trust (Nooteboom, 1996). These distinctions are somewhat similar to those made by McAllister (1995) who, at the individual level, has split trust into cognition-based and affect-based

trust. Cognition-based trust is related to confidence in the partners' technical work-related abilities, whereas affect-based trust is primarily dependent upon a personal emotional relationship. Partners will seek to heighten both kinds of trust so that the relative value of the partnership is raised, thus increasing the switching costs that would be incurred by moving to a different partner.

Cognition-based trust affects individuals at a transactional level. If a partner proves incapable of doing the job, delivering as promised on time, quality, and price, then a mistake has been made in assessing their technical capacity; however, there has been no personal betrayal. Affect-based trust on the other hand involves individuals personally. They feel a sense of personal loss if they can no longer work together. If this affect-based trust is broken, then the deep emotion of betrayal is felt. Affect-based trust thus takes a long time to develop but is more resilient. As Braunschvig (1998) has pointed out, alliances between individuals and groups develop more intensely in an unstructured situation, such as a virtual supply network, than in a clear command and control environment.

Implications for HRM

This new emphasis on trust relationships between organizations needs similar trust relations to be encouraged among managers within organizations. As the organization becomes less hierarchical and structured, so the manager's role changes. As a consequence of having to trust people to perform to the best of their abilities, managers have to become facilitators, creating the conditions under which employees can and want to give optimum performance. This clearly poses a major challenge for HR to support managers in these new roles.

Given our earlier discussion of creating a more flexible workforce to meet production and service requirements, the issue of trust is particularly pertinent, as this is becoming the key mechanism (rather than control) required for managing a workforce that is more dispersed in both location and time (Handy, 1995).

In attempting to develop a climate of trust, certain bundles of HRM practices can be adopted to support such an endeavor. For example, Whitener (1997) emphasizes the issues around the psychological contract between the employee and employer: alongside explicit contractual obligations such as appropriate pay and benefits in return for work carried out, there are other developmental and emotional obligations relating to job security, training and development, loyalty, commitment, and meeting promises such as overtime or support.

The level of trust and respect individuals have for their immediate supervisor also influences perceptions of justice and fairness, for example, in performance management systems. It is important to create systems that support both procedural and interactional justice, providing sufficient feedback and appeal opportunities, as well as treating people fairly and consistently. These are all skills that supervisors at different levels within the company need to be able to master, alongside the creation of appropriate HRM policies. The wording of such policies also reveals a company's attitude towards its employees and the levels of trust it is displaying; for example, an overemphasis on control and monitoring systems in policy documents can undermine any attempt to build trust relationships by individuals (Shockley-Zalabak, Ellis, & Winograd, 2000).

Other ways of facilitating trust in the work environment include focusing people's attention on small groups of workers with whom they work on a regular basis, such as through teamwork, to foster trusting relationships and encourage membership of a community (Handy, 1995). Particularly during times of extensive change, as we will discuss in the following section, a company needs to monitor trust levels among employees to anticipate how people are likely to react to the changes being introduced (Shockley-Zalabak et al., 2000).

Finally, considering briefly the other key aspect of supply chain integration, namely *innovation*, a company needs to focus on developing HRM practices that encourage organizational learning. However, learning both within and between organizations has proven difficult to manage. Many organizations are still struggling to realize any value from knowledge exploitation (Grimshaw, Breu, & Myers, 2002). And as Seely Brown and Duguid (2000) point out, experience has shown that knowledge and best practice is hard to disseminate even within the same organization, let alone along a supply chain, unless very closely guided and encouraged.

Although creating learning experiences from explicit knowledge sources is relatively straightforward, to acquire learning from the tacit knowledge held by individuals is more challenging. To learn most effectively, individuals must have sufficient prior knowledge to be able to understand the complexities of a new situation. Otherwise they will be slow to process and retain new facts and concepts because they will lack an ability to interpret and classify information based on pre-existing schemas and frameworks (Cohen & Levinthal, 1990). In other words, one must belong to a world in order to know it (Baumard, 1999). Immersion in the appropriate practice is thus the best way to gain access to this tacit knowledge.

In addition to creating a learning organization, other HRM practices can also be useful to encourage a culture of innovation. For example, reward and performance evaluation systems can be devised to encourage rather than punish risk-taking. Suggestion schemes can also be introduced for individuals to put forward their ideas on how processes might be improved, regardless of their position in the company. These activities — in combination with an environment that encourages knowledge sharing, learning, and development — can significantly improve a company's creative talent.

Implications for the HR Department

In practical terms for the HR department, guiding and encouraging knowledge exchange both within and between organizations can be considered a three-stage process (Seely Brown & Duguid, 2000). The first stage is to find out where interesting experience might be available. HR departments have a role to play in identifying organizations to which their own company can relate, which have useful experience in facing and overcoming the issues in which they are interested. So if the corporate aim is to develop and maintain more trusting relationships with suppliers and customers, HR needs to be aware of other relevant organizations from whose experience they could learn. The second stage is then gaining access to this experience through collaborative discussions, and the third stage is deciding if and how the experience can be exploited to fit the company's situation. The latter can best be done through setting up communities of practice, that is, bringing together similar people with similar interests facing similar problems.

A typical example of how the HR function might operate in this context would be as follows. The company aim is to switch a portion of its current investment in R&D to more venture capital type activities; it aims to take stakes in or take over young start-up companies with innovative ideas and technologies relevant to the basic business, instead of trying to grow them in house. However, the success rate of mergers and acquisitions is known to be low, and especially troublesome are takeovers where the objective is obtaining technological expertise (*The Economist*, August 5, 2000). So the company wants to learn how to improve its success rate in this important field.

Knowing, for example, that Cisco Systems has been practicing for some time a highly successful strategy based on growing primarily through acquisitions, many of which have been small innovative start-ups, and that much of this

information about the Cisco approach is in the public domain, this would be a good starting point for HR to explore. For example, Bunnell (2000, pp. 64-76) outlines the Cisco acquisition process in some detail, showing the importance of the many different systems used. But no story, however well told, can cover the whole situation. In order to fill out the total picture, contact needs to be made between relevant individuals in both companies: the learner and the example company. Relevant individuals need to be able to talk with their equivalents, thus forming a community of practice. And it is of course the development of precisely such communities that has been facilitated by the growth of the Internet (Seely Brown & Duguid, 2000). The HR department thus has a powerful role to play in the development of organizational learning. The moves we have outlined above towards a new balance between innovation, trust, and learning on the one hand and new forms of discipline and control on the other will not be easy. They will require a refocusing of role for HR professionals. HR roles have been widely discussed (see for a current overview: Paauwe, 2004), but one of the most well known is Ulrich's (1997) model of four roles, namely strategic partner, change agent, administrative expert, and employee champion. However, these roles are not independent of each other. For example, both change agency and high-level strategic advice are required in converting a company from traditional supply chain processes to those immersed in the virtual supply chain economy. This becomes clear if we think, for example, about people in positions of power who have achieved their status through competence and expertise relevant to different aspects of the value chain. Moving to a virtual chain means that the power structure will have to be dismantled and rearranged. Therefore, institutionalized systems and extant political power structures are likely to resist change. We discuss in further detail the implications of managing this significant change situation for the HR department in the following section.

Organizational Revolution

The third and final possible reaction of old-economy companies to the growth of the Internet economy which we will discuss here is for the company to step back and reassess how the Internet might affect its business. Schwartz (1997) indeed argues that the major opportunities posed by the Internet economy lie first in de-constructing the value chain in order subsequently to reassemble it,

if necessary with new roles and new business actors. Companies are thus being counseled to rethink the strategic fundamentals of their business.

For example, it is argued that information defines existing supplier relationships (Evans & Wurster, 1997); having a relationship means that two or more companies in a supply chain have established certain channels of communication and information. However, the economics of information are changing. The Internet enables this information to be unbundled from its physical carrier, hence reaching a wider community very cheaply. This has the potential to undermine established value chains. Many companies thus need to rethink their information strategies fundamentally—a process that often results in unraveling vertically integrated value chains.

What a company needs to examine is how transacting its business using the Internet might help add new forms of value to the company. Rethinking thus starts with the customer. It involves going right back to the fundamental value proposition and understanding what motivates end-customers to buy from the company and not from the competition. Once this is established, all aspects of the organization must be analyzed, such as the goods or services offered, the key business processes, the financial and human resources required, the organizational structures, and the major systems and procedures. These are the building blocks that can be redesigned, added to, and reconfigured to transform the value proposition using the new opportunities offered by the Internet.

The need for this radical rethinking of strategy and unraveling of vertically integrated value chains is particularly high in distributive networks (Tapscott, Ticoll, & Lowy, 2000). Distributive networks use mediating technologies to facilitate exchanges across time and space (Stabell & Fjeldstad, 1998). Hence they are the key organizations supporting business transactions via the Internet; they allocate and deliver goods—be it information, objects, money, or other resources—from providers to users (see Box 3).

In Europe, distributive networks such as power companies, postal and telecommunications services, and railways used to be government-regulated monopolies. They reflected a physical capital asset-based mindset—a view that to deliver value to a customer, the company should own its entire value chain. In the case of electricity supply, this would incorporate generating facilities, transmission lines, local distribution networks, and access to end-customers. Rethinking the strategy by concentrating on the opportunities and threats posed by transactions using the Internet raises opportunities for redefining the generation, transmission, and marketing businesses. This process

Box 3. The transformation of a distributive network: Federal Express

Federal Express started life in 1971 as a transportation company using trucks and roads to deliver goods. As early as 1979 it was using a centralized computer system to manage people, packages, vehicles, and weather scenarios in real time. Following a name change to FedEx in 1994, it has since moved further ahead into the Internet age. In late 1998, FedEx decided that its physical distribution system of trucks and airplanes was less valuable than its Internet-worked information resources: its digital capital was gaining value over its physical capital. FedEx decided to focus on value-added context services like online package tracking and logistics outsourcing and leave the actual driving jobs to outsourcers, hence, the company began selling its transport network, marshalling a web of truck and air transporters to handle the physical delivery. In the process, it created a \$16 billion transportation powerhouse (www.fedex.com).

is currently underway in a number of countries, with one resultant international initiative being the setting up of an electronic marketplace for the utilities industry, Eutilia, similar in nature to that of Covisint in the automotive industry discussed earlier.

It is clear that business model redefinition can be a radical revolution. Thus, despite the enthusiasm with which some consultants propagate it, it is a high-risk strategy, as Enron found out to its cost. However, for some businesses, doing nothing may mean a higher long-term risk. The key to success for high-risk strategy such as value proposition redefinition lies in the way the whole process of redefinition and subsequent repositioning of the business is managed. This is likely to be a highly threatening organizational change process, leaving many managers and employees facing an unpredictable future in comparison to the relative security to which they were accustomed.

Such redefinition can be a highly threatening exercise for employees, and particularly senior management. These people may need strong encouragement before they are willing to undertake such an exercise. For example, in 1999, GE recruited an estimated 100 external top e-commerce experts to be used as 'black belts' or team leaders of a program entitled, "Destroy Your Own Business" (Floyd, 2002). These teams were set up in every GE business unit with the objective of redefining how the Internet could be used to annihilate the unit's mainstream business. The task proved very difficult. Many units were run by senior managers who, for years, had successfully run businesses under pre-Internet conditions. Such individuals often had little understanding of e-commerce, and had difficulty envisioning any positive impact of the Internet on their thriving businesses.

Implications for HRM

Employee-employer relationships are constantly changing as companies are forced to cut costs and hence often headcount in achieving revolutionary change. Organizational commitment and loyalty is being undermined, yet we have already seen the importance of developing trust-based relationships within the workplace if a company is to survive in the new economy. This is proving a major challenge for HR departments, resulting in a need for change management activities to be very carefully planned, implemented, and monitored to ensure as smooth as possible transition from a traditional brick-and-mortar culture to a new e-business environment.

Balogun and Hope Hailey (2004) in their book exploring strategic change emphasize the importance of having an understanding of the organization climate and culture, and the current attitude of employees and management in order to assess the best way to tackle revolutionary change. Employee surveys are an appropriate means of looking at issues such as the clarity of corporate strategy and sharing of common values, communication and feedback processes, levels of trust and perceived organizational justice, employee commitment, and organizational readiness and flexibility for change. Appropriate HRM practices can then be implemented to encourage desired behavior and performance in the new e-business environment, based on the enablers and constraints to change identified in the current culture.

In this revolutionary situation, maximizing human resources will, however, not only depend on the effectiveness of organizational change programs. It will also depend on individuals being able to capitalize upon the major opportunities that such a revolutionary situation can bring for management and individual development, and hence the company's HR assets.

Managers learn most, not from any classroom-based course, but rather from their own practical experience, particularly in new situations. Learning experiences can include such activities as cross-boundary movement, being involved in task forces or special projects, managing a downsizing operation, or switching from a series of staff jobs to being a line manager. As long as the situation is important and is new, then learning will be optimal (McCall, 1988). The process and outcomes of the business model redefinition process described above will be a totally novel situation for most of the managers involved. It is clear that this process can have major potential for individual development. Therefore, the choice of who is to take part in such an exercise is extremely

Box 4. Four roles of HR in the knowledge economy (Lengnick-Hall & Lengnick-Hall, 2002)

Human Capital Steward

HR can act as a facilitator in partnership with employees with the aim of achieving the highest return possible on the company's human capital investments. Human capital goes beyond task-related knowledge, skills, and abilities to include general life experiences, social skills, values, beliefs, and attitudes. As such, individuals need to be guided and facilitated rather than controlled and dominated. The HR department needs to lose the policing or paternalistic role to encourage individual voluntary contribution. Given human capital's value to the organization, and that it is both unique and perishable, appropriate strategies for hiring, training, retaining, and removing need to be adopted, including the encouragement of innovation and flexibility.

Knowledge Facilitator

The HR department has a role to play in facilitating both knowledge capital (held in explicit and implicit sources) and knowledge flows. This can be achieved by promoting an understanding and value of knowledge management, creating knowledge sharing and usage expectations. Other strategies include schemes for continuous learning and brokering knowledge exchange. An overhaul of existing appraisal and compensation practices may be required to support the desired knowledge management behaviors. Furthermore, the HR department needs to encourage the organization to change its behavior in light of what it learns.

Relationship Builder

The focus here lies on managing relationships between individuals and groups both internal and external to the organization to enhance social capital across the total value chain. However, relationships are complex, requiring multiple dimensions to be considered, including: rapport (trust, respect, empathy), bonding (collaboration), breadth (scope, range of transactions), and affinity (interest, attraction). Appropriate HRM strategies for building such relationships include cross-functional teamwork, intra- and inter-organizational communication, inter-unit resource exchange, and inter-firm learning.

Rapid Deployment Specialist

As firm competitiveness is increasingly dependent on speed, the HR department needs to take responsibility for the development of flexible human capital resources with an emphasis on adaptability, tolerance, and capacity to learn. This means creating human capital configurations that can rapidly be assembled, deployed, and disassembled to meet the needs of fluid work assignments. This entails the encouragement of appropriate employee attitudes, team behavior, and values that support flexibility, adaptability, and creativity. Employees must be encouraged to self-organize, and be capable of working in situations of crisis, stress, and uncertainty. A culture of widespread sharing of organizational information and team-working is essential to achieve these aims.

important, not just from a business point of view, but also from a human resource development perspective. So what are the implications for HR professionals of this revolutionary change process?

Implications for the HR Department

A major implication for the HR function in a business model redefinition situation is probably the sea of change of the department's own function. Traditionally, the HR function has focused on delivering almost perfect quality HR systems and services to the organization (Wright & Dyer, 2000). To do so has required that they spend considerable amounts of time gathering and analyzing information, garnering political support, and soliciting input from multiple sources at each stage in the development process.

To reach such perfection takes a long time and a great deal of labor. It is hardly surprising therefore that Wright and colleagues (1999) found that the design and implementation of HR systems takes on average between 18 and 20 months. Given the rapid pace of the almost permanent change involved in any organization revolution situation, firms can no longer afford to wait this long, nor to pay the cost of such an elaborate development and implementation process. HR has to deliver solutions as close to real time as possible, otherwise the firm risks losing its advantage to competitors that are more agile. The outcome is a focus on simpler but satisfactory rather than comprehensive and optimal HR solutions (Wright & Dyer, 2000)—a significant change in culture.

Perhaps it is in this revolutionary situation that we can thus best start to see how Web organizing is impacting on the function of HR as a whole. Lengnick-Hall and Lengnick-Hall (2002) introduce four new roles for HR based on what they describe as the knowledge economy in which many organizations are now working: (a) human capital steward, (b) knowledge facilitator, (c) relationship builder, and (d) rapid deployment specialist (see Box 4).

Parallels can easily be drawn between the new economy that Lengnick-Hall and Lengnick-Hall (2002) describe and the Web-organized structures of brick-and-mortar companies that this chapter has explored. Lengnick-Hall and Lengnick-Hall's roles are all elements of the HR role and HRM practices discussed so far in this chapter as part of company responses to the Internet economy. These responses and implications are now summarized in the following section, drawing out the broader implications of Web organizing in brick-and-mortar companies.

Conclusions

In this brief overview, we have suggested that there are three main ways in which old-economy companies are attempting to integrate the new economy as extensions of their current businesses. These business models are summarized in turn below, considering the implications for HRM practices and the HR department. It is emphasized here that this is a new and interesting field in the HRM literature that has not yet been fully explored empirically. We encourage others to take up the challenge in this dynamic world to explore further the tentative conclusions we are reaching here.

The first e-business model treats the Internet as an extension of the normal marketplace. Companies use it primarily to sell more products or services and to buy cheaper. This will involve many organizations operating primarily through business-to-business exchanges. The transparency and global reach of these exchanges will put major pressure on suppliers' costs and speed and flexibility of response.

We have suggested that the major accepted way for Western companies to achieve necessary cost savings and performance increases is to adopt an agile management approach combined with a flexible, high performance organization to gain the maximum advantage from the globalization of the economy. This implies a clear *human capital steward* role for the HR function to be highly cost-efficient in the way in which it operates. In addition to broadening their portfolio of expertise to cover the implementation of flexible working practices, high performance work systems, and international HRM practices, HR professionals need to rethink how they deliver their service to their clients. E-HRM has been discussed here as a tool for streamlining and improving the scope and depth of service delivery, hence delivering the required cost savings and quality improvements demanded of the department.

The second way in which old-economy companies are attempting to integrate the new economy is by using the Internet to expand and improve collaborative relationships among their key suppliers. We envisage many business-to-business suppliers becoming members of fully integrated virtual supply chains, with a need to develop trusting relationships between all partners in the network, combined with the necessity of constant improvement in performance and innovation.

In such a situation, what is needed is a combination of the rationality and order of high performance work systems along with a willingness to constantly

consider change and, where necessary, to implement innovation quickly. This balance between strong routines on the one hand, and the freedom to experiment and innovate on the other, is difficult for any organization to achieve. It requires the development and maintenance of a climate of trust both internally in the firm and externally between network partners. In addition, learning both at individual and at organizational levels will have to be of a high order in order to facilitate the necessary continuous improvement and innovation.

So again the role of the HR department is clear. Not only must they ensure development and maintenance of a high performing, flexible organization, but they must also assist in the development of trusting relationships and learning and innovation. This involves a re-evaluation of the employer-employee relationship that the company advocates, monitoring employee attitudes and encouraging and rewarding participation, knowledge sharing, and risk taking to the benefit of the company. The focus is on the *relationship builder* and *knowledge facilitator* roles of HR professionals in developing a climate of trust, innovation, and learning.

Finally, as we have suggested, there is also a third way that may be a temporary state, but is much more fundamental. This approach requires old-economy organizations to rethink totally their business models before deciding on their e-commerce strategy. They must re-examine why customers buy from them, look at all stages in the processes involved, and consider how the Internet could impact each stage in the processes, and then, if necessary, develop new business models for the required reorganization.

Here, the *rapid deployment specialist* role for HR is clear, alongside the *knowledge facilitator* role. HR professionals must assist in managing the multiple change processes involved and also help those involved in the process to gather whatever learning is available as effectively as possible. And satisfying rather than striving for perfection in daily operations will be the order of the day.

As our overview has pointed out, the uncertainties, problems, and complexities for many organizations of moving business-to-business transactions onto the Internet will mean that the pace for many will be slow even if it is steady. To start with, both Internet-based and non-Internet-based systems are likely to be kept running in parallel. For example, business-to-business selling in many companies will exist side-by-side with a more traditional approach. Selling through the Internet may have major cost advantages, but it does not give much opportunity for developing personal contacts, nor for the flexibility sometimes needed to clinch the sale. For example, it is hard to enquire about a customer's family

during an ordering process on the Internet. Moreover, the Internet is often inflexible in quoting a delivery date, whereas a good salesman knows how to twist the system so that the customer gets the goods within his desired timeframe. And so the HR function will also have to move in the directions we have suggested, while at the same time continuing to fulfill its more traditional roles.

Final Remarks

Web-based organizing is a complex issue. Few companies can easily be slotted into the three models we have just described. Sub-units of many companies may well be spread across different models, and some may be moving from one model to another. The speed of change will also vary across business sectors. In addition, there are many and varied problems alongside HRM issues involved in the transfer of business-to-business transactions onto the Internet that we have not discussed here. The move does however appear to be inevitable. There is, therefore, a need to act quickly in order to be ready.

HRM is arguably becoming more important in this changing economy: the relative unique value of fixed assets such as property and factories is declining, while the unique value ascribed to intangible assets is increasing. Intangible assets involve people: people's ideas, people's contacts, people's ability to manage in the midst of chaos, people's vision and experience, people's intuition or understanding of markets, and so on. However, people are free agents; they can, and do, change employers frequently. Therefore, HRM should concentrate on the systems that underpin people's successful behavior, that is to say the systems that stimulate and support the new desired behaviors we have been discussing. These systems are what HR managers need to identify as appropriate for their own company, so that they can then guide management in adapting and improving these systems to realize organizational potential. These internal improvements, necessary for successful transference of business to the Internet, may at last enable the HR function to justify its existence in financial terms.

A fitting end to this chapter is perhaps provided by Braunschvig's (1998, p. 178) conclusion that both American and especially European old-economy firms must leverage their human and technological resources simultaneously to achieve higher productivity growth:

"This could well be the opportunity of last resort for mature economies challenged by companies from younger, hungrier cultures and countries."

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