THE APPLICATION OF CHANGE MANAGEMENT THEORY TO HR PORTAL IMPLEMENTATION IN SUBSIDIARIES OF MULTINATIONAL CORPORATIONS

Cataldo Dino Ruta

HR portals are complex information technology (IT) applications that can be accessed by all employees of a given organization. By placing more applications and information online, HR portals reduce the reliance employees have on HR personnel. Given this relational change, from human to computer, the HR portal implementation process must take into account the challenges of both change management and technology acceptance. By integrating change management theories with IT user acceptance models, this article adds to HR's collective knowledge of ways to effectively implement HR portals. In addition, this article describes the cross-national challenges that exist when a global firm attempts to implement an HR portal around the world. Thus, this article will present a model that (1) integrates change management theories and IT user acceptance models and (2) illustrates the ways in which change management plans may need to be adapted to be effective in various subsidiaries. A case study of Hewlett-Packard's (HP's) worldwide implementation of their @HP Employee Portal in the Italian subsidiary of HP illustrates the key issues of these theories. © 2005 Wiley Periodicals, Inc.

Introduction

Human Resources Portal Applications

In recent years, the World Wide Web has revolutionized the way individuals in organizations access information. In addition to channels such as *business-to-business* and *business-to-consumer,* the Web has permitted human resources management to implement HR processes where *business-to-employee* (B2E) solutions are possible (Harris, Phifer, & Berg, 2002). Organizations with strategic human resources have implemented an increasing number of electronic HR (e-HR) solutions for redesigning HR processes and reducing the administrative role of the HR department (Crandall & Wallace, 2002; Lepak & Snell, 1998; Walker, 2001). Since more of the administrative tasks are available on HR portals, HR professionals have increasingly more time to engage in strategic HR activities.

Often located on company intranet systems, HR portals are vehicles through which HR information and applications can be channeled effectively and efficiently (Firestone, 2003). There are many tools that HR portals offer, including employee communications (HR policies, who's who, what's new, FAQs, etc.) as well as pension services, open enrollment and benefit inquiries, and the

Correspondence to: Cataldo Dina Ruta, Organization and Human Resources Management Department, SDA Bocconi School of Management, IOSI Bocconi University, Viale Isonzo, 23, 20135 Milan, Italy, (39) 02 58362632, dino.ruta@unibocconi.it

like. Other administrative activities, such as the updating of an employee's personal data (e.g., change of address), are the responsibility of employees themselves. Through HR portals, employees also may have access to customized and personalized news, resources, applications, and e-commerce options (Cascio, 2000; Collins, 2001). HR portals offer different services to employees than to management. Through HR portals, managers are able to generate reports (e.g., headcount, salary listings, time reports), examine employee activities (transfers, promotions, terminations, etc.), and manage their own activities (e.g., travel arrangements, expense management).

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HR Portal Implementation: Integrating Change Management Theories with IT User Acceptance Models

Implementing an HR portal is a complex process because it requires firms to manage both significant changes for the employees as well as the technical challenges for the organization's project installation team. Although the technical installation challenges can be great, it is the human challenges associated with change that cannot be overlooked (although often are) during the implementation phase of an HR portal. Employee users must become accustomed to establishing a new kind of relationship with HR, as well as accepting interaction with a computer rather than with a person, and, for some, to actually using new technology. These challenges—IT acceptance and organizational change management—can be daunting, especially when not managed effectively.

This article discusses and integrates change management theories with IT user acceptance models. Armenakis and Bedeian (1999), in their review of organizational change literature, found four issues that were common to all change efforts: (1) content issues focusing on the substance of the change; (2) context issues focusing on forces internal and external to the organization; (3) process issues focusing on how the change was implemented; and (4) criterion issues focusing on outcomes commonly assessed. In the case of an HR portal, the content is

the introduction of the HR application, the context includes all the internal and external factors affecting the employees and managers who will use the HR portal, the process includes all the change management activities organizations may implement to encourage employee usage, and the criterion is whether employees use the new HR portal, how long it takes for employees to start using the HR portal, how satisfied they are with the HR portal, and so on. The model presented in this article integrates these change management concepts into the overall theoretical framework for HR portal implementation (see the left side of Figure 1). Given that many HR portals are often implemented by larger, global organizations that spread across geographically distributed regions, the national contextual issues (such as culture) are considered in greater detail.

A recent review of IT user acceptance research found eight competing models and integrated them into one unified model, called the Unified Theory of Acceptance and Use of Technology (Venkatesh, Morris, Davis, & Davis, 2003). The eight models that have been integrated into the unified theory of Venkatesh et al. are: the theory of reasoned action (Fishbein & Ajzen, 1975), the technology acceptance model (Davis, 1989), the motivational model (Davis, Bagozzi, & Warshaw, 1992), the theory of planned behavior (Ajzen, 1991; Taylor & Todd, 1995b), a model combining the technology acceptance model and the theory of planned behavior (Taylor & Todd, 1995a), the model of personal computer utilization (Thompson, Higgins, & Howell, 1991), the innovation diffusion theory (Rogers, 1995), and the social cognitive theory (Compeau & Higgins, 1995). Though a discussion of each of the eight models comprising the unified model of Venkatesh et al., is beyond the scope of this article, three basic concepts common to all theories are particularly relevant for HR portal applications: (1) individual reactions to using information technology will affect (2) their intention to use information technology, which will, in turn, (3) affect the actual use of information technology. The model presented in this article integrates these three concepts into the overall theoret-

ical framework for HR portal implementation (see the right side of Figure 1).

Change management theory and the IT user acceptance model focus on overlapping dimensions of this model for implementing an HR portal. The IT user acceptance model focuses on "what" predicts intentions to use the HR portal, while change management theory focuses on "how" intentions to use the HR portal can be influenced and "how" cognitive phenomena are formed. Both theoretical streams view individual acceptance and use of the HR portal as the final outcome. Figure 1 illustrates the integrated theoretical framework for HR portal implementation in a global firm. After presenting the four key elements of the model (context, process, IT user acceptance, and outcome), a case study of the @HP Employee Portal implementation in the Italian subsidiary of Hewlett-Packard will be described.

Context

General Contextual Factors

HR processes reflect corporate culture through the way in which a company manages and treats its employees. As such, the introduction of an HR portal, which replaces more personal face-to-face interactions with computer-based information, may be viewed by some employees with suspicion. Thus, it is important for the success of the implementation to predict how the HR portal might be perceived and to manage this change to the betterment (and not detriment) of the company's organizational culture, employee satisfaction, and so on.

Contextual dimensions may include external variables, such as the firm's industry (banking, airlines, health care, etc.), as well as the industry's main characteristics (competition, customers, level of technology, knowledge needed, etc.; see Armenakis & Bedeian, 1999), or internal variables, such as specialization, professionalism, managerial attitude toward change, managerial tenure, technical knowledge resources, and lack of resources (Damanpour, 1991). An extension of Damanpour's work points out that organizational design variables (mission, technology, size, structural complexity, perception of change, and involvement) are strong predictors of employee reactions to change (Gresov, Haveman, & Oliva, 1993). In other words, by analyzing the context (at both the industry and company levels), change agents can adopt the most appropriate actions to support the process. When introducing an IT application such as an HR portal, it is necessary to take into account
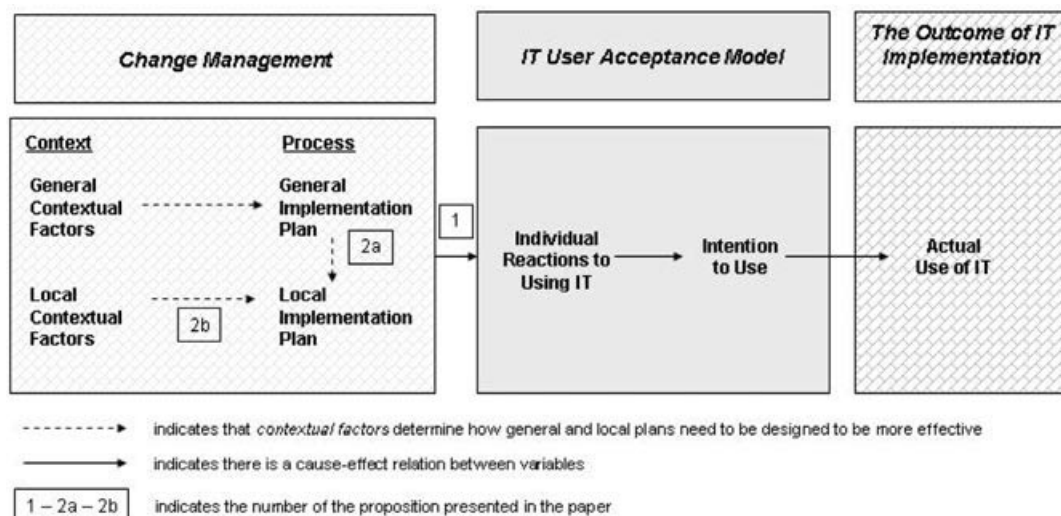

Figure 1. Theoretical Framework for HR Portal Implementation in a Global Firm.

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Local Contextual Factors

The context for change in multinational firms is somewhat more complex. In addition to the general factors common throughout the company, there are specific local or cultural factors unique to specific subsidiaries or divisions. The literature shows that national culture is a well-accepted factor that influences international relations, and its impact is extremely relevant to understanding processes and behaviors (Adler, 1993; Ulijn, Lincke, & Karakaya, 2001). For these reasons, the same innovation can have both general and local issues. Local differences depend on the physical presence of local units in different countries, which requires that companies follow local regulations. Local contexts depend both on local policy and cultural features that can produce a different context. Multinational companies usually possess a corporate culture that fits various contexts and leads to different management styles (Hofstede, 1991, 2001).

Process

General Implementation Plan for the HR Portal

Once the context is defined, the implementation phase progresses through successive steps: (1) *unfreezing*: helping users become aware of the new change and bringing to the surface the values upon which these actions may be based; (2) *moving*: introducing users to new mental frameworks and behavioral patterns and helping users with these new patterns; and (3) *refreezing*: helping users internalize these new behaviors and habits (Lewin, 1947). Based on this contribution, other researchers pointed out different and more detailed phases that all refer to a common framework by which change is introduced, adopted, and finally institutionalized in organizational behaviors.

Managerial actions can help manage change and develop successful IT implementation plans (Leonard-Barton & Deschamps, 1988). Greater involvement causes greater "ownership sentiment" and will result in more positive attitudes toward the change (Barki & Hartwick, 1994). When future users (i.e., employees) participate in the implementation by giving suggestions (which are heeded and adopted), their commitment to the project will increase (Strauss, 1998). People must be sure their contributions will be relevant to the quality of the output (Reichers, Wanous, & Austin, 1997). The implementation team collects feedback on the system, adapts the system accordingly, and shares progress reports and results. This positive attitude, in turn, can generate a high degree of system knowledge that increases perceptions and intention to use (Barki & Harwick, 1994).

Though perception is fundamental for influencing the use of an HR portal, it may be mediated by employees' self-efficacy toward mastering the new system (Venkatesh, 2000). Self-efficacy beliefs can be affected through training or "from-the-start" involvement in the HR portal implementation project. Companies offer training in the early stages of the project to reduce uncertainty of the new technology by providing information about its characteristics and to motivate users to engage in use behaviors (Bostrom, Olfman, & Sein, 1990; Davis & Bostrom, 1993). HR portal implementations should identify influential individuals or technology champions (Orlikowski, Yates, Okamura, & Fujimoto, 1995) to facilitate the flow of information in the new system and the phases of the project.

The behavior of top management is extremely critical to communicating the need for change (Kotter, 1995). The head of the organization has to demonstrate strong sponsorship of the project (Zmud, 1984), because when people see their bosses fail to remain involved in the innovation introduced, they stop making an effort in the process. In successful change management projects, top management keeps employees informed of the process of change. Change agents must work to avoid the dissemination of rumors. Rumors

are a signal that communication is poor and the change process is failing (Reichers et al., 1997). In addition to sponsorship, top management needs credibility to develop mutual trust and a friendly environment with the rest of the organization (Conger, 1998). Trusting the team leader is a critical prerequisite to having employee cooperation in implementing strategic decisions (Korsgaard, Schweiger, & Sapienza, 1995). Armenakis, Harris, and Field (1999) identified seven influence strategies: (a) persuasive communication; (b) active participation by those affected; (c) human resources management practices; (d) symbolic activities; (e) diffusion practices; (f) management of internal and external information; and (g) formal activities that demonstrate support for change initiatives. Collectively, these efforts should produce an effective HR portal implementation plan geared toward increasing employee usage.

Local Implementation Plan for the HR Portal

HR portal acceptance can be positively influenced by developing a comprehensive change management strategy (or implementation plan) to increase employee usage. That said, the best implementation plan may need to be varied when considering a general implementation to account for local variations in cross-national HR environments. This is especially relevant given that HR portals in large multinational organizations are implemented on a worldwide scale and thereby include subsidiaries in many countries. Given the common platform of most HR portals, the technical application tends to be standard around the world. The implementation plan of the HR portal, unlike the portal itself, can be more locally adapted to ensure maximum usage within subsidiaries.

Grover, Segars, and Durand (1994) found that firms in the United States, France, and Korea differ in their perception of IT's competitive role, the level of integration in information systems and strategic planning, and other important issues for the use and acceptance of IT. Every subsidiary in a multinational company has distinctive traits that vary according to the subsidiary's

national culture (Hofstede, 1991). Among the many differences, "power distance" (Hofstede, 1991) and the "focus on relationships" (Schell & Solomon, 1997) can lead to various changes in implementation plans at the local level. For example, in cultures with a high level of power distance (i.e., France, India), leaders communicate what to do with clear direction and specific instruction. In other cultures with lower power distance (i.e., United States, Sweden), leaders are more likely to share all the different aspects of a certain decision with collaborators, involving them in the decision process. In these cultures, people work with great autonomy because that seems to represent the best model for them to be directed and managed. When the managerial style becomes too vertical and authoritative, people react negatively and do not willingly collaborate with others. This would have implications on the extent to which employees become involved in the HR portal implementation.

Another cultural implication for an HR portal implementation involves relationships. Some cultures are more focused on "*doing* business," while others are more focused on "*building* business through relationships." In cultures where relationships carry greater weight, people will spend more time networking and discussing work-related ideas than working hard on specific tasks. Likewise, countries differ in high versus low context. In countries with high-context cultures (i.e., Italy, Japan, China), contextual cues are critical to the interpretation of a message, while in low-context cultures (i.e., Germany, Switzerland, United States), words spoken have a direct meaning and do not have difficult or subtle interpretations (Czinkota & Ronkainen, 1998). People characterized by high-context cultures try to get needed information by accessing their personal information networks. People embedded in low-context cultures are more likely to use nonhuman sources, such as reports, databases, the Internet, and so on (Morden, 1999). These cultural dimensions—power distance, focus on relationships, and high versus low context—should be taken into account as part of an HR portal implementation plan.

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IT User Acceptance of the HR Portal

User acceptance models study factors that predict intention to use IT and its relationship with actual system usage. Venkatesh et al. (2003) defined the Unified Theory of Acceptance and Use of Technology and identified four main constructs as prerequisites of the actual system usage: effort expectancy (i.e., perceived ease of use), performance expectancy (i.e., perceived usefulness), social influence (i.e., subjective norms), and facilitating conditions (i.e., compatibility). Some of the main theoretical contributions related to these constructs are presented below.

To better predict success in the acceptance of HR portals, it is important to understand how employees will develop and experience IT. Perceived ease of use (*effort expectancy*) is the belief that a system's use is simple and requires little effort (Davis, Bagozzi, & Warshaw, 1989). Employee users are more willing to tolerate difficult, if not complex, technological interfaces if they produce great functional benefits, whereas no degree of ease justifies a rather functionally useless system. Perceived usefulness (*performance expectancy*) is an employee's level of conviction (or belief) that a particular system will increase their work performance (Davis et al., 1989). The relationship between perceived ease of use and perceived usefulness also may change over time (Szajina, 1996). The fact that the system has to be easy to use is most important during the initial phases of any project. As one would expect, this effect diminishes over time when familiarity with procedure becomes more conventional (Adams, Nelson, & Todd, 1992; Chau, 1996; Davis, 1989; Davis et al., 1989). Thus, perceived ease of use can definitely influence acceptance, but once a given technology is actually accepted, its importance diminishes (Davis, 1989). Once in use, a feedback mechanism derived by widespread "use" sets off a virtuous cycle: increased use increases perception of ease, which, in turn, increases perception of usefulness (Goodhue & Thompson, 1995). This cycle is determined, for the most part, by a given user's learning curve.

Besides the relationship between perceived ease of use and perceived usefulness, other researchers have addressed the critical role of *performance expectancy* as a prerequisite to increasing intention to use. A system can be considered able to enhance individual performance (Thompson et al., 1991) or to give a relative advantage to new users (Moore & Benbasat, 1991). Furthermore, when a person accepts a new system, it may imply she has outcome expectations of the work itself (Compeau & Higgins, 1995) or of individual development (pay, promotions, etc.; see Davis et al., 1992).

Moving from a performance measurement to a more context-based approach (*social influence*), social pressure is a critical factor that leads people to behave like others (Fulk, 1993), since they cannot do otherwise without being considered "misfits" or individuals who behave inappropriately. The intention to use is an individual attribute, not an organizational one, and it is built and perceived through social interactions. In these situations, people are inclined to accept IT through subjective norms as they see other colleagues doing so (Ajzen, 1991; Taylor & Todd, 1995b; Thompson et al., 1991). As a matter of fact, they wish to be a part of the organization, so they conform to the behavior of others.

Consequently, when the IT application is introduced, the innovation must be perceived as consistent with existing organizational values (*facilitating conditions*), needs, and experiences of potential users (Moore & Benbasat, 1991). Moreover, users observe objective factors that can enhance IT acceptance, such as the provision of computer support, resources needed to access and use IT, and technological compatibility (Ajzen, 1991; Taylor & Todd, 1995b; Thompson et al., 1991).

Outcome of IT Implementation: Actual Use of the HR Portal

Literature on management of information systems describes the success of an IT implementation mostly through IT system usage (Davis et al., 1989; Igbaria, Zinatelli, Cragg, & Cavaye, 1997; Straub, Limayem, & Karahanna-Evaristo, 1995; Thompson et al., 1991) and user satisfaction (Amoroso &

Cheney, 1991; Igbaria, 1990), while other researchers have studied these two dimensions together (Baroudi, Olson, & Ives, 1986; Gelderman, 1998; Kim, Suh, & Lee, 1998; Taylor & Todd, 1995b). Discussing both measures, Al-Gahtani and King (1999) pointed out that system usage is a more precise measure of IT acceptance. Moreover, Igbaria et al. (1997) also defined system usage as the primary indicator for IT acceptance and said, "System usage has a notable practical value for managers interested in evaluating the impact of information technology." For these reasons, in this study, success of HR portal acceptance is measured by the degree of usage. Specifically, the dependent variable of this article is Web site usage, a concept similar to the variable IT usage in information systems research. Portal usage can be measured independently of the user, for instance, by taking the number of hits on the entire site via system logs, documents viewed, visits, and single visitors in order to have a better representation of users and their use.

The model presented in Figure 1 offers two propositions:

Proposition 1: When change management principles are integrated with an IT user acceptance model in developing an implementation plan, the individual acceptance of HR portal use will increase.

Proposition 2a: In cross-national implementation of an HR portal, general implementation plans should be adapted to the local context in order to increase the actual use of the HR portal in the subsidiary.

Proposition 2b: In cross-national implementation of an HR portal, unique implementation plans should be developed that consider the local context in order to increase the actual use of the HR portal in the subsidiary.

In the following section, Hewlett-Packard's worldwide implementation of their @HP Employee Portal will be discussed. This case illustrates the user acceptance model, a number of change management

concepts, and local adaptation of the @HP Portal's implementation plan in European subsidiaries generally and the Italian subsidiary specifically.

The Hewlett-Packard @HP Employee Portal

In January 2000, Hewlett-Packard (HP) CEO Carly Fiorina provided a vision for the @HP Employee Portal, stating, "This worldwide entry point would be rolled out to every subsidiary around the world, connecting employees who can access corporate information, personal data, services, HP resources, and execute internal transactions." The primary purpose of the @HP Employee Portal system was to simplify the relationship between HR functions and those internal clients the function serves—namely, the employees of Hewlett-Packard. Fiorina recognized the @HP Employee Portal would have improved HP's HR effectiveness and would have increased employees' satisfaction with the HR department in general.

The @HP Employee Portal was designed to increase the ease and speed of access to internal communications and corporate information in an attempt to increase management effectiveness and production capacity of HP employees. Information on the @HP Employee Portal is standardized and global, while addressing local concerns by using multilingual formats. By introducing the @HP Employee Portal, HP counts on reducing HR and IT operating costs without sacrificing high-quality and up-to-date services and content. Ultimately, HP's aim was to increase integration among the diverse businesses and to reap the benefits derived in terms of cost reduction, increased efficiency, and overall HR effectiveness. The scope of the project was to go from a vision of HR predominantly oriented toward providing personnel with basic services (i.e., bureaucratic and administrative) to one that sees HR provide added value and consultancy in its typical functions, such as recruiting, compensation and benefits, training, and so on. The declared objective was to create an HR department that would become a strategic partner in managing company change and pro-

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fessional growth for all employees. A description of the contents of the @HP Employee Portal is provided in Appendix 1.

Context at HP: General Contextual Factors for the @HP Employee Portal Implementation

HP's hopes for the success and utility of the @HP Employee Portal were demonstrated by the CEO personally and enthusiastically presenting the implementation plan. The proposed change to the delicate employee-company rapport was entrusted to the HR Executive Director who would manage this vital and large-scale corporate change. In addition to the corporate benefits derived by using the portal as a corporate tool, HP top executives explicitly indicated the HR department also would be the recipient of significant benefits. It was therefore quite evident that from the outset the new portal would have a radical impact on what role and services HR would manage within the new HP. In an effort to create a new, more unified, efficient, and effective HR organization, the following strategies were implemented across the entire organization:

- Create a new business model that eliminates duplicate organizational structures in an aim to empower a single global organization.
- Designate standard processes to a global service delivery model throughout the entire company worldwide.
- Define an e-business strategy as a first step in realizing a business-to-employee portal for use by every HP employee worldwide.
- Identify a foundation technology, which is a framework that integrates all the current systems connected to the employee's "realm."

Context at HP: Local Contextual Factors for @HP Employee Portal Implementation in Italy

Although the @HP Employee Portal would have an impact on employees' daily jobs by making them easier and more productive, few

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employees considered the effect the portal would have on the HR department staff itself. HR Country Leader Riccardo Benini said, "At the outset, I wasn't completely in favor of the portal. I was afraid it would reduce the HR staff. It wasn't the headcount I was worried about, but rather I didn't want anyone to find themselves in a bad situation. In our department, relationships matter a lot and therefore people are not just simply colleagues. With regard to our activities, I didn't know what would have become of our function. I thought a part of our work would have been outsourced to the Web and I didn't want the technology to steal a certain job sense from any of my staff by demotivating them." After his initial resistance, Benini began an analysis of the project because it was difficult for him to predict how HP employees in Italy would accept the new portal and, consequently, how HR's role would have changed.

Although the loss of administrative HR jobs is real, the introduction of portals and B2E logic gives HR the technological solutions that can increase efficiency in its processes. Technology cannot change the way HR works, but it can focus the function's attention on a specific issue or problem. As Benini commented, "Technology can help us redefine our service, but not everything depends on technology. Perhaps without the portal everything we are currently doing would have been more difficult, but what we are accomplishing is much more than the implementation of an e-business application."

Despite Benini's comments, HP planned to launch and "go live" with the @HP Employee Portal around the world by 2002, and thus developed a centralized implementation plan. This plan, though comprehensive, made allowances for regional or national variation as needed. The first countries involved in the project were the United States and the "Big Countries" in Europe (France, Germany, and the United Kingdom), where the first version of the portal was released in April 2000. The second release, in September 2000, saw the involvement of Italy, Spain, the Netherlands, and Ireland, as well as updates for the Big Countries. The portal was expected to go live on March 5, 2001.

Process: General Implementation Plan for the @HP Employee Portal

Headquarters' general implementation plan required dedication and organizational effort to be able to "go live" by the deadline. In order to identify an efficient implementation methodology, HP staff analyzed its HR organizational structure and involved all groups, broken down into Corporate, European, and Local functions both horizontally (staff) and vertically (in the various divisions). The horizontal functions included leaders from Staffing and Recruitment (Talent Acquisition) & Relocation, Compensation & Benefits, Enterprise Workforce Development (Training), Industrial Relations, HR Services, and HR/IT. The vertical functions represented a group from HR business managers (liaisons), who served as internal consultants. With the team in place, the implementation methodology was based on pilot testing and feedback (HP called it the "Evolving Ideas"). This conceptual approach was shared around the world and implemented locally with the creation of an HR Function Task Force. On January 3, 2001, HP announced the @HP B2E Portal Global HR Communication Plan (see Table I) with the following communication objectives:

- to continue to build awareness of and excitement for the @HP Employee Portal among HP managers and employees;
- to create an understanding of the changing role of HR and the new delivery model for HR services;
- to clearly articulate the audience-specific benefits of HR in @HP and to communicate the long-term vision of the portal;
- to drive employee usage and adoption of HR services and applications in @HP;
- to establish @HP as the channel for receiving HR news and information;
- to articulate the importance of the phased approach for portal integration; and

- to improve employee usage of appropriate HELP channels. HELP channels are channels dedicated to support employees during the first usages (adoption).

In order to reach these goals, HP suggested some communication strategies:

- Provide each target audience with the necessary information and tools to create a high level of awareness and acceptance of @HP.
- Work closely with the Enterprise Global Portal team to ensure alignment of communication activities. This implies partnering with internal communicators to leverage both existing communication channels and delivery mechanisms as well as integrating global and regional HR portal communication teams.
- Create a section within @HP dedicated to delivering HR news, policy changes, HR portal issues/workaround, and up-to-date information.

Corporate defined the main channels available at HP and suggested strategies to reach out to audiences. Operatively, the @HP team leveraged a mix of communications channels and vehicles (see Table I).

HP Corporate defined the prerequisites for success in order to ensure global employee acceptance and usage of the @HP Employee Portal. HP stated the communications teams must:

- continue to align communication plans across the Enterprise and HR portal teams;
- establish clear ownership of global HR communication and the portal delivery model;
- establish HR operations and business HR staff as a sales force for the @HP portal;
- ensure that the country implementation and localization plan is clearly defined and understood;
- continue to work with communications contacts in each country to

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TABLE I	@HP B2E Portal Global HR Communication Plan	
Channel	*Vehicle*	*Audience*
@HP Portal	New HR @HP section	All audiences
	HR @HP "Pick of the Week"	HP employees and managers (by region)
	HR @HP vision and road map	All audiences
HR Exchange	E-kit (FAQs, presentations, etc.)	HP employees and managers
	HR's weekly message (HR community)	HR community
E-mail	Newsgrams	HP employees and managers
	Employee and manager messages (HR's distribution lists)	HP employees and managers
Electronic/Other	E-cards	Employees and managers
	PowerPoint presentations	All audiences
	Videotape	HP employees and managers in manufacturing sites
Voice Mail	High-level, strategic messages from Carly and "Four Tops"	All audiences
	Regional and site-specific messages	HR community, employees, managers
Events	Training sessions via NetMeeting or Web-based "classroom"	HR community, HP managers, and employees
	HR @HP Demo Stations	Employees and managers
	HR case study presentation	External
	Virtual visits	All HR
	HR Strategic Council	Senior HR executives
Print	Articles (regional, site-specific publications)	All audiences
	Quick reference guides	Employees and managers
	Posters/signage	All audiences

Adapted from @HP B2E Portal Global HR Communication Plan—Hewlett-Packard

support them in championing the portal; and

- ensure support plans and training are in place prior to announcing an HR program to employees and managers.

In sum, HP Corporate decided to implement the communication plan as an executive directive in order to improve HR portal acceptance among employees. Local subsidiary HR functions received a communication plan in order to promote the utility and relevance of the new HR portal. Consistent with the theoretical framework in Figure 1, HP implementation strategy planned to influence employees' perception, thereby influencing their usage behavior. Although this implementation plan seemed highly standardized, all subsidiaries were responsible for varying HP HQ's implementation plan to fit the cultural context of their local environments.

Process: Local Implementation Plan for the @HP Employee Portal in Italy

As one would expect from HQ-based HR process change, HP's new employee portal received some criticism and suspicion from its subsidiaries throughout the world. Local concerns necessitated continuous dialogue with headquarters, especially in making the system compliant with local laws. In Italy, the @HP Employee Portal implementation team relied heavily on the Industrial Relations department for its invaluable assistance in facilitating the change process. Their joint effort was viewed as key to the implementa-

tion success—attributed to the skill of Riccardo Benini at balancing concepts of innovation versus tradition and technology versus local labor legislation. Mr. Benini praised Industrial Relations Director Rino Furlan, who coordinated the project, by saying, "In multinationals, one knows restructuring is effectively taking place when the smallest local branch is able to unite with the entire global-tree. And speaking of HR, the biggest challenge was not to allow any of the value and contribution put forth by everyone in the entire HR department to go unnoticed." The choice to involve Industrial Relations from the outset in Italy may have lengthened planning time but surely diminished acceptance time in the long run.

In addition to legal and labor relations challenges, certain cultural challenges were also a factor, and HP Italy decided to implement a number of additional communication methods more closely linked to Italian culture. The Italian HR staff launched an important campaign that utilized some unique channels. For instance, the managing director (MD) of HP Italy periodically held early-morning talks in the company cafeteria with the entire staff. These morning meetings usually discussed issues ranging from market conditions to results and economic indicators for a given period. During the introduction phase of the employee portal, the topic was, for the first time, an HR project—the @HP Employee Portal. Given the respect for local hierarchy and the personal credibility of this managing director, employees acknowledged the importance of the employee portal.

Given the (personal) communicative nature within the Italian context, and that e-mail alone is overused as a communication tool, the Italian team believed e-mail communication alone might have failed. The implementation team contacted HP's own marketing department to help create internal interest and enthusiasm. This was the first time they were asked to market something internally. In addition to trinkets, the marketing department developed what they called "stepping stones," which were arrows placed on the floors of the building indicating the @HP Employee Portal "virtual" path in the departments themselves throughout the entire building. The metaphor (if followed long enough) was that the arrows led nowhere but took employees everywhere at the same time. Like the stepping stones, the @HP Employee Portal would lead employees wherever they wanted. In retrospect, these unique stepping stones encouraged informal communication about the portal that was important in encouraging information exchange within the Italian context.

Complementing the nontechnological channels, the portal did make use of an e-mail campaign, only as an informative memo to get people's attention. In Italy, the HR country leader sent out e-mail messages that explicitly described the new tool and asked employees to use it to improve organizational performance. In Italy, as elsewhere, a corporate e-mail is often read as one of many general pieces of information that trickles down the ranks (i.e., new products, institutional events, etc.), whereas a local or in-house e-mail is more often than not from someone a person knows or feels will have a direct impact on her actual job, and is therefore more likely to get the attention it deserves.

After the launch date, specific e-mail boxes were set up to collect feedback on the new portal. The button "feedback/support" at the top of the portal interface was added to collect comments, suggestions, and, most important, proposals for the release of the second version. These initiatives are closely related to the strategy of "high level of employee involvement" adopted by HR. In designing the Italian site, key organizational functions, Industrial Relations, and other HR figures were involved, as well as the managing director and marketing departments, as mentioned earlier. European-level teams also were created to collect and share approaches, problems, and solutions.

Consistent with the implementation model, the "feedback/support" function opened up the opportunity for all employees to participate in the improvement of the portal. In this way, the @HP Employee Portal is seen as something in constant evolution, becoming a tool that satisfies the users' needs in research and transaction execution. Since going live on March 5, 2001, other releases have followed, some not entirely evident to

In addition to legal and labor relations challenges, certain cultural challenges were also a factor, and HP Italy decided to implement a number of additional communication methods more closely linked to Italian culture.

all users, while others are already making a notable difference.

IT User Acceptance of the @HP Employee Portal

Among the risks of this implementation project was the possibility that general and Italian context could negatively influence user perception. Employee perplexity could lead to refusing the new tool and continuing to manage HR function communications using traditional channels (telephone, e-mail, meetings). The acceptance level on behalf of all personnel was a continuous cause for concern for employees. As one employee said, "All HR initiatives increased HR portal perception of usefulness among us. I think the biggest challenge is to orient people toward the HR portal, at least for the first time. In this way, everyone can directly test utility and quality." Undertaking different actions, a great feeling of curiosity arose among the employees. At the same time, there were positive and negative attitudes toward the new technology. Organizational "rumors" created throughout this process allowed the HR project team to win the employees' trust, although it was a challenging phase. Carla Di Martino, IT manager for HR in HP Italy, said, "Before going live, we clearly knew we, as the HR function, had finally obtained most of the future users' trust. They were waiting to have the chance to use @HP to be able to judge, criticize, and eventually praise the system. We knew it would not be easy. During those days, we lived with this feeling and persistent challenge."

For all these reasons, HP designed an implementation plan to get people involved even after going live. They could send tips and suggestions to the implementation team by using the same @HP interface. In this way, the users could have the chance to contribute to improving the product. Under the guidance of Industrial Relations Director Rino Furlan, and after some initial concern, the position of most of the employees changed to a belief that the @HP Employee Portal represented an opportunity.

Outcome of IT Implementation: Actual Use of the @HP Employee Portal

In this case, consistent with the model, success was measured by the number of hits on the @HP Employee Portal site in relation to the number of employees in the subsidiaries. As a corporatewide project, the @HP Employee Portal was a success in all countries. Italy, however, represented one of the most successful launches, with better results in terms of hits, pages viewed, users' sessions, and unique visitors (see Table II). The indicator "hits" refers to the number of times a server is accessed by Web site users. For the purpose of determining Web site usage, hits could be potentially misleading, because they do not reflect the amount of content accessed by a user. Other more appropriate indicators could include "pages viewed," "users' sessions," and "unique visitors." Page views are the number of times a visitor sees a page of information on the portal. Individuals may make several hits within a given page view. Another useful indicator is the "users' sessions," which include all the hits and pages viewed from the time a person enters the site. One user may enter the site and view ten pages, while another user views only five—each person would represent a single user session. Aggregating across user sessions to people, a useful indicator is "unique visitors." Unique visitors are the number of individual users who use a given Web site, regardless of how many sessions any one person has. In this case, unique visitors represent the number of employees who have used the @HP Employee Portal. Collectively, these four indicators give a reliable picture of the use of the @HP Employee Portal.

Looking at the data (see Table II), it seems as though the extra effort put in by the Italian team in its implementation plan truly paid off, whereas most of the other subsidiaries followed @HP's standard corporate implementation plan. In addition to the March 2001 results, Italy had data for the two successive months confirming that the majority of its employees were habitual users of the portal (see Table III).

Nearly two years after its initial launch, Carla Di Martino, IT manager for HR in HP

TABLE II **@HP Employee Portal* Usage in Italy, Germany, Spain, and the Netherlands** in March 2001**

		Italy	*Germany*	*Spain*	*Netherlands*
Employees	Number of employees	1,296	5,959	1,489	1,441
Hits	Entire site (successful)	17,195	8,496	7,336	1,936
	Average per day (about 23 days)	747	369	318	84
Page Viewed	Page viewed (impressions)	4,914	2,970	3,137	783
	Average per day (about 23 days)	213	129	136	34
User Session	Visits	1,520	1,221	576	202
	Average per day (about 23 days)	66	53	25	8
	Average visit length (minutes: seconds)	08:11	07:41	07:35	06:42
	Median visits length (minutes: seconds)	03:08	02:26	02:40	03:36
	International visits (%)	0	0	0	0
Visitors	Unique visitors (A + B)	791	793	336	143
	Visitors who visited once (A)	473	601	232	123
	Visitors who visited more than once (B)	318	192	104	20

* @HP Employee Portal in each country were comparable in terms of number of pages and topics covered.

**All units were comparable in terms of functions, roles, and age.

Italy, defines the experience a concrete success: "At this point, everyone at HP Italy has correctly learned how to use the instrument. In Italy, we have a daily average of some 40 pages visited, 14 visitors with an average user time of 12 minutes and 41 seconds, and 5,403 documents consulted. The accesses are naturally concentrated around those periods when HR processes are being done, say, for example, during performance evalua-tions." In addition to improved services, each investment of this kind ought to bring about increased efficiency in terms of labor and operational costs. When comparing time savings and related costs, the HR department in Italy counts on an average savings of 15%, with some differences for services (approximately 25%), and HR business managers report a 5% result, with peaks of as much as 50% in the salary revision process. The new

TABLE III **@HP Employee Portal Usage in Italy in March, April, and May 2001**

		March	*April*	*May*
Hits	Entire site (successful)	17,195	13,674	16,201
	Average per day	747	455	522
Page Viewed	Page viewed (impressions)	4,914	4,269	4,642
	Average per day	213	142	149
User Session	Visits	1,520	1,438	1,704
	Average per day	66	47	54
	Average visit length (minutes: seconds)	08:11	07:22	08:18
	Median visit length (minutes: seconds)	03:08	02:46	02:58
	International visits (%)	0	0	0
Visitors	Unique visitors (A + B)	791	772	940
	Visitors who visited once (A)	473	531	650
	Visitors who visited more than once (B)	318	241	290

"This is a classic example of how the @HP Employee Portal permits different HR processes to perfectly integrate with one another: performance evaluations, competency mapping, training, and, in part, career management. Today, we entrust everyone with their own internal career-development planning by creating the conditions for self-growth, which represents a stimulus for learning. Knowledge management, driven toward the access to corporate expertise, and HR management are converging toward a model, which almost semi-automatically reduces the filters between knowledge supply and knowledge demand."

HR portal is designed to simplify people's work, helping them plan their business activity. Fabio Gabbiani, training director at HP Italy, said, "This is a classic example of how the @HP Employee Portal permits different HR processes to perfectly integrate with one another: performance evaluations, competency mapping, training, and, in part, career management. Today, we entrust everyone with their own internal career-development planning by creating the conditions for self-growth, which represents a stimulus for learning. Knowledge management, driven toward the access to corporate expertise, and HR management are converging toward a model, which almost semi-automatically reduces the filters between knowledge supply and knowledge demand."

Discussion and Conclusions

After the @HP Employee Portal went live, it was not easy to manage the transition from the old system. Even though the portal was presented as mandatory, the HR function did not stop activities processed by the old systems (i.e., telephone, e-mail, paper) to avoid increasing resistance. In some cases, employees still wanted to see their HR representative and continue to have face-to-face contact with HR. This initially created some concern among project team leaders, for in every change process, resistance can lead to discontentment and can threaten the success of the initiative. These situations were managed "ad hoc," and after collecting rationales for the resistance, users realized that only routine jobs with little added value had, in fact, been taken over entirely by the new technology. Employees knew the face-to-face relationship was still intact in HR and available in critical moments of HR processes, and this helped to create a more favorable climate at HP Italy.

It is true that when technology enters into the organizational design, the fear that a machine will substitute for a person is very real. HR has always had the role of managing people. Given the long-held focus on administrative support and cost containment, the positive influence HR can have on the effective management of human talent is not often measured. The new portal helps HR close the technology gap that exists between departments, and positions the function to become more strategic. In order to sustain competitive advantage, HR has been thought for some time to be a critical factor (Huselid, 1995; Pfeffer, 1995) as the debate on intangible asset value, knowledge management, and intellectual capital grows (Davenport & Prusak, 1997).

It is a common belief among HP employees in Italy that the portal had four positive effects. First, it improved the perception of the HR function as having greater value added and being less administrative. Most processes have been standardized and simplified. The second positive effect was time savings in terms of employee work activity and transaction costs. The HR function is more strategic and less transactional, more focused on problem-solving roles and competencies. Corporate HQ informed staff that the $20 million project cost was recuperated in only six months, and that savings to date total over $50 million. In Italy, the HR headcount remained unchanged, whereas in other countries it was reduced in terms of operative staff, the majority accepting transfers within the company. A third effect, at least in Italy, was the rise of the HR department in terms of strategic relevance within the company. Since successfully managing this important strategic transformation for the entire business, HR now supports the business as a strategic partner. The HR function modified its daily operations so that it now works on producing global solutions and not simply attending to routine administrative paperwork. The HR function is more flexible, so it can adapt quickly to business requirements for new programs and service delivery needs. HR staff is now proactive in offering their consultancy and solutions to enable the company to operate within a marketplace that continually demands greater innovation.

The organizational success of the @HP Employee Portal is due to the system's quality as well as its implementation process. The HP case aided in presenting the research framework proposed in this article. In particular, empirical evidence reported in this

study underlines the need for an integration of user acceptance models and change management theories (Proposition 1). The theoretical contribution seeks to see the same phenomenon (IT individual acceptance) through two conceptual lenses. When the content of the change is an IT application and the context is an HR portal in a multinational that requires rollout for all employees in all subsidiaries, managerial actions must be carefully planned to reach the highest degree of individual acceptance.

Furthermore, with regard to Proposition 2, the HP case study suggests that cultural dimensions are relevant in defining the change management plan and, consequently, in influencing employees' perceptions. Even though a group of people may have a strong common organizational culture, their country culture is still relevant

and can affect IT implementation. For instance, HP could already count on a high-level IT culture since it not only sells IT, but is also a worldwide industry leader. However, as this case demonstrates, this predisposition alone may not be enough to guarantee implementation, since cultural beliefs and attitude can, and do, affect implementation. The HR country leader in HP Italy adopted solutions in the Italian communication plan consistent with local culture by involving all levels and creating widespread discussion and interest among employees. This case clearly illustrated how the user acceptance models, change management concepts, and, in particular, local adaptation will affect ultimate usage with HR employee portals in multinational companies. Future research can be designed in order to test these two propositions.

Cataldo Dino Ruta is an assistant professor at Bocconi University's Institute of Organization and Information Systems and the SDA Bocconi School of Management. He received his PhD in management from the University of Bologna. His research interests include knowledge management, strategic HR, and organizational impacts of IT.

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APPENDIX 1

@HP Description

As compared to the previous application, namely Intranet HR, the logic behind the @HP Employee Portal is notably changed. Users were accustomed to seeing the site as somewhere they could find information on corporate procedures, policy, and forms for the various HR functions: compensation and benefits, staff, labor relations, training, and HR business, without the ability to interact and often without regular updates. The old intranet system was purely informational; the HR presence on the site was simply a way to introduce the company to employees and to tell them HR existed. This form of intranet was quite different from what Carly Fiorina had suggested when she said the new portal would allow employees to transact with HR. The new @HP Employee Portal not only offers staff the chance to gain access to information, but also to interact directly with the company. The logic behind the function went from one of *presentation* to one of *service*. The e-service approach abandons the old functional approach and concentrates on presenting content. The site's information is no longer based on the HR department per se, but is rather a detailed reference for the actual task the employee is performing.

The interface of the @HP Employee Portal is divided into four folders[1]: home, life/work, organizations, and my@HP. In each of these, one finds specific information and the possibility to complete transactions. For example:

Home

- corporate news in general;
- integration with Compaq;
- Popular Links, which access HR, Finance, Legal, etc.;
- @HP Status, which describes the current status of the portal;
- People Finder to find information on HP colleagues (e-mail addresses, telephone numbers, extensions, etc.); and

- Feedback and Support, where employees can express their opinions on technical issues (performance, login difficulties, etc.) and site content (layout, texts, etc.).

Life/Work

This section is password-protected and is a place where personal employee data is contained and where employees can execute transactions (i.e., change banking information, training course registration, job-posting candidacy, etc.). This is HR's main page and is where staff can interact with HR directly.

Organization

This page contains information from the various divisions at HP and the domestic branch intranet. Detailed business-sector news and press releases are part of the content related to the various HP businesses.

My @Portal

This is the most personalized section, also password-protected, where each staff member can create their own portal, adding those functions they use most, as well as other information that is specific to their job.

Within the @HP Employee Portal, a series of legacy corporate applications and services have been integrated. The integration is in constant evolution, being enriched gradually from a functional point of view. To date it contains the following components:

- internal communication: HP Corporate guidelines and procedures;
- personnel database: salary planning, ranking, performance evaluation, and separate reporting for executives and consultants;
- employee self-services: personal data, pay stubs, training and salary history, company stock program, job postings, staffing candidacy;
- e-learning courses and registration and authorization processes, online classes; and

- e-procurement, including: travel reservations, phone and video conference reservations, net meetings, resource allocation reporting to cost centers, electronics reporting, HP product purchases, presentation and press release archive, corporate strategy information, best practices, and knowledge management.

Profiling users has become quite complex and detailed. As a result, employees and management alike have a well-defined identity, and as such can access the following:

- employee services: financial planning, personal travel arrangements, etc.;
- daily services: Web mail access, training course registration, vacation scheduling, legacy system access, etc.; and
- corporate/employee exchange: individuals, groups, or both can transfer specific news, press announcements, make meeting requests, exchange data, etc.

NOTE

1. The description of @HP Employee Portal refers to March 2001.