DEVELOPPING AN E-COMMERCE MODEL (B2E) WITHIN A MULTI-SITE UNIVERSITY HEALTH CARE CENTER

A Solution to Promote Knowledge and Information Exchange

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Abstract: Information management in hospitals is one of the biggest challenges to employee development and organizational performance. In our current health care context, information and communication technologies (ICT) are essential to information distribution, sharing and management. In an environment such as the McGill University Health Centre (MUHC), a B2E e-commerce network represents the passage from traditional to virtual modes of exchange with the establishment's 12,000 employees. This paper argues that an e-commerce model can create significant opportunities for creating, sharing and applying interprofessional knowledge and information in an easy and accessible manner.

1 INTRODUCTION

According to Pavia (2001), health care has entered the Knowledge Era, and health professionals need to stay abreast of the latest developments if they are to provide the best possible care to the populations they serve. Increased knowledge production and the advent of new communication technologies provide health care professionals with opportunities to improve their practice by seeking out and utilizing new knowledge. But are they indeed doing so? Given the speed at which new knowledge is produced and disseminated, there is a pressing need for an electronic platform to manage and centralize pertinent, up-to-date and personalized information.

2 CONTEXT

Hospitals are broadly recognized as among the most complex organizations in Western society (Glouberman & Mintzberg, 2001, Glouberman & Zimmerman, 2002). The orientations and operations of the health care system which is considered a professional bureaucracy in Mintzberg's (1986) typology of organizational structures are strongly influenced by the activities and interests of the many groups of professionals involved, all of whom draw on the same resources and support services. Given the professional 'silos' that evolve within boundaries in urgent need of transformation (Denis et al, 1999), the integrated delivery of health care services represents a substantial challenge for the entire system.

3 MODEL BACKGROUND

Introducing an employee portal is one way of promoting a network that allows health care professionals to acquire new knowledge as they share and exchange information. This employee-centric strategy is designed to include not only the type of content an employee might hope to find on an organization's intranet site (e.g. corporate directories, supporting data), but relevant personal information and resources as well. Known as a B2E or "business-to-employee" strategy, such portals

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facilitate access to corporate information, personal data, transactions and services.

In organizations used to more traditional modes of exchange, the introduction of a B2E e-commerce model represents the passage to a virtual mode of exchange. According to Rahim (2007), despite the considerable business value of the B2E portal, acceptance remains a challenge, and numerous issues need to be addressed before such a system can be implemented. These include personal factors (such as perceptions of the portal as having limited usefulness), organizational factors (the availability of dedicated resources, support from management, etc.) and employee awareness. It is our belief that securing corporate commitment and dedicated resources for the system and centralizing its management will help ensure its sustainability.

In this context, the development of a B2E model is supported by the TAM (Technology Acceptance Model). The TAM is an information systems theory that models how users accept and use technology (Davis et al., 1989). Originating in socio-psychological behaviourist models—i.e. the theories of reasoned action and planned behaviour—the TAM posits that the actual use of an information system is contingent upon the user's intent to use it. This intent hinges on two factors: the technology's perceived usefulness (PU), and its perceived ease-of-use (PEOU). These two constructs are in turn influenced by external variables such as the product characteristics or the training provided.

Davis (1989) defines perceived usefulness as the degree to which a person believes that using a particular system will enhance his or her job performance. PU is a major factor in determining system use, and in some studies is directly linked to the adoption of information technology systems.

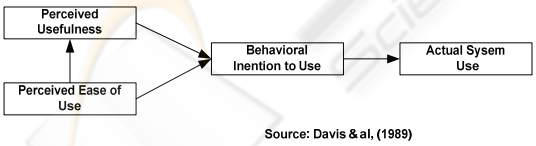

Figure 1: The Technology Acceptance Model (TAM).

As regards e-commerce, Davis (1989) defines PU as the degree to which an individual believes that carrying out the transaction online will increase the effectiveness of his or her action. Davis also defines PEOU as the degree to which a person believes that using a particular system will be relatively effort-free. This is a secondary factor that directly affects the adoption of a given technology, although conclusions are still pending as to its impact on the use of information technology systems (Shih, 2004).

4 THE B2E MODEL

We developed the following B2E model as an electronic platform solution inspired by the specific needs of our health care context: being in a university health care network; the need to address health care system performance; being in a competitive environment for health care human resources; and having to respond to ongoing health care transformation in terms of knowledge management and information sharing. The system's functions meet the following objectives, namely, fostering collaborative exchanges, competence management, time management, learning management and communication.

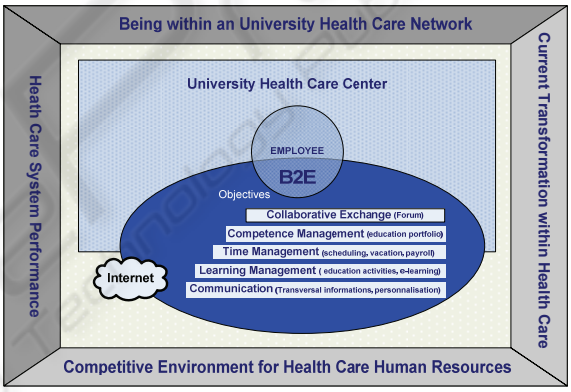

Figure 2: *My Portal* – model and objectives.

5 CREATING A B2E TOOL: *MY PORTAL*

The *My Portal* initiative originated in the Nursing Informatics department. The need to share information and transfer knowledge among professionals and between departments was perceived as a key factor in attempting to create interprofessional networks and break down the silos within the organization. *My Portal* was also designed as a B2E tool that would provide all health care workers with an easy and accessible means of creating, sharing and applying knowledge and information.

When using *My Portal*, employees can navigate between the following sections: 1) corporate (MUHC) affairs, 2) a toolbox, 3) a forum, 4)

personal information, and 5) education and e-learning opportunities.

Below is a brief description of each section together with illustrations of the related windows.

1) *MUHC affairs*: This section keeps health care workers informed on departmental affairs (Figure 3) and provides access to personalized data from Payroll or Human Resources. This will eventually replace most paper communication.

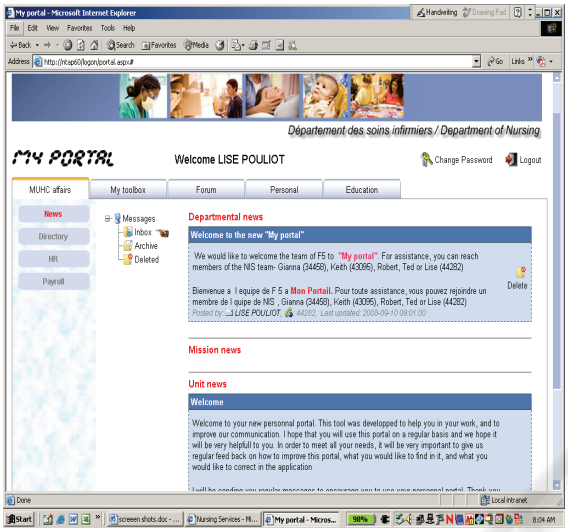

Figure 3: MUHC affairs.

2) *My Toolbox*: This section presents an array of clinical and administrative components. For instance, managers can access information on budgets, employee status, hours worked, and so on (Figure 4). This data, automatically updated by the Human Resource Information system, gives managers a timely and accurate representation of their manpower capacity, thus allowing them to make informed decisions.

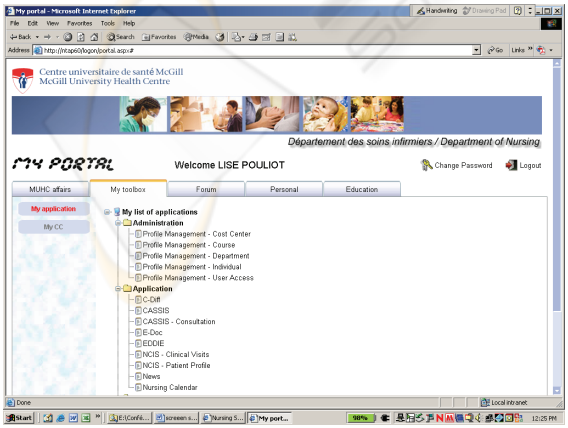

Figure 4: My Toolbox.

3) *Forum*: This section provides health care workers with a space to share information and discuss topics of interest. Figure 5 shows some of the topics discussed among peers within a department. Creating this "social hub function" supports the employees' need to discuss work-related issues with peers and colleagues in complete security.

4) *Personal*: This section contains an employee's personal information. Employees can consult their work schedules, update their professional profiles, and so on.

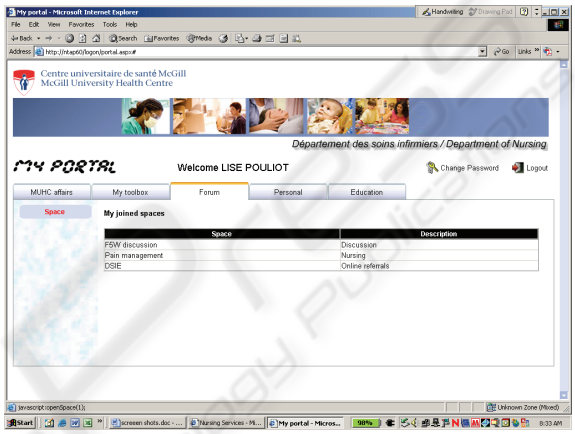

Figure 5: Forum.

After entering such data as contact information, professional profile or interests (Figure 6), employees can agree to have the information posted in a controlled-access resource directory, where it can be viewed by other employees in the organization.

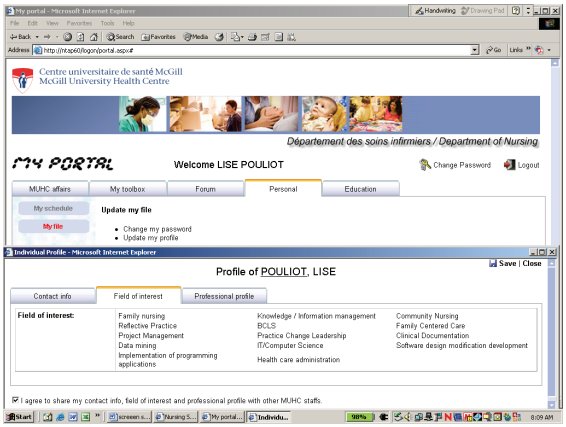

Figure 6: Personal.

5) *Education:* As shown in Figure 7, employees can view their education portfolios and the professional development e-learning modules available to them.

Once each e-learning module is completed, the employee's profile is systematically updated.

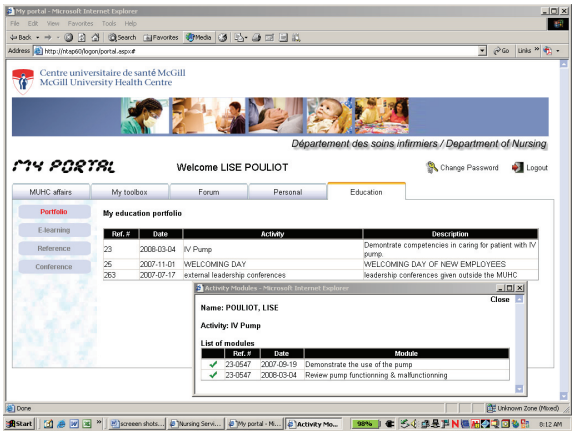

Figure 7: Education.

6 CONCLUSIONS

Allowing employees and managers to access the most up-to-date and pertinent information for their communication and educational needs—and by the same token, giving them ownership of the information—*My Portal* is an innovative, accessible tool for developing, sharing and using knowledge and information. The next step is to measure the system's accessibility, perceived usefulness and ease-of-use among a small group of health care workers. Once this has been accomplished, *My Portal* can be implemented throughout the organization.

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