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KNOWLEDGE MANAGEMENT AND E-LEARNING : FACE OF GLOBALIZATION

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ABSTRACT

The objective of all organizations in era of globalization is not simply to have knowledgeable employees, but to have competent ones. In other words people need to have the correct combination of both skills and underpinning knowledge needed to carry out the tasks listed in their job description. Where individuals face a significant personal development challenge they require carefully devised learning resources designed on pedagogical principles by experts in instructional design. These must incorporate integrated exploratory and practice activities as well as tests and assessments designed to build and measure both knowledge and skill. E-Learning and other structured forms of training and development are vital to ensure that employees have both the knowledge and skill needed to fulfill their roles As a result individuals successfully develop a general framework of competence within which they can place the information they access from knowledge management systems. Knowledge management specialists need to recognize that e-learning courses and knowledge management systems are both here to stay. In fact the boundary between the two is actually becoming increasingly blurred. This paper is concerned with three key ideas: the growing importance of e-learning as knowledge scaffolding; the emerging significance of knowledge management practice in informing strategic directions for the development of e-learning systems; and a conceptual framework that brings together these first two ideas, while also accommodating the proliferation and diversification of computational and communications environments.

Introduction

E-Learning is the use of electronic methods to impart technical or non-technical training. To this extent eLearning is not an IT industry term but it does involve the use of IT. The difference between training and eLearning, is that one is “just-in-case” whereas the other is “just-in-time.” eLearning has become a buzzword in recent times due to the number of companies that offer training from their Web sites (called Web Based Training). Another context where eLearning is often used today is in relation to Knowledge Management (KM). The merger of eLearning and Knowledge Management is inevitable.

E-Learning is in one of the following forms

- Computer Based Training (CBT)·
- Web Based Training (WBT)

Stories that describe the evolution of e-learning could commence at any number of times and places, and they do. The story that is told here is one that ties together technical innovation,

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transformational practice, and the emergence of an "interoperability standards agenda." It is a story that can be told with a background context consisting of only a decade or so and a story of the emergence of a new industry. The central argument that follows is that much of the infrastructure development that supports e-learning can be seen to be convergent with systems developed to support knowledge management. The more obvious examples include content management and workflow management. However, observing convergent trends is only the beginning. From a service perspective, there are compelling grounds for facilitating this convergence. But first, it is important to reveal some underlying assumptions. The first is that e-learning is no passing fad. Instead, it is positioned to thrive in a multiplicity of settings (from formal to informal). Second, e-learning will continue to drive the transformation of traditional institutions of learning and help shape a number of futures, not just for the education and training sectors but across most industry sectors. Third, it is argued that standards will play a pivotal role in shaping the Internet-enabled future of teaching and learning. This last key assumption is based upon the observation that the emergence of standards typically coincides with the early phases of new marketplaces, generally signaling consensus concerning key aspects of a new industry and maturity in innovation. In this sense, standardization of technical components enabling e-learning is no different from standardization of technical components that make aircraft fly. In addressing these issues, this paper profiles some key standardization groups and discusses the standards life cycle.

So why is knowledge management important in this context? Put in its most basic form, the answer is simple: learning and knowledge have a symbiotic relationship; they depend upon each other. From a slightly more complex perspective, the creation, acquisition, transfer, and exchange of knowledge are all activities that are helping define the character of information—and knowledge-based economies—in which the primary assets of data, information, and knowledge all manifest digitally. The technological tools facilitating much of these interactions are information and communication technologies (ICT). It is through engaging with ICT that learning defines itself as e-learning. However, while knowledge is inextricably linked to data and information, there is no simple, linear hierarchy and progression from data to information to knowledge. There is a complex intermeshing and continuous transformation of digital bits in combination with a churning of insight, where meaning changes according to context and through conversations with different participants. In this sense, knowledge is organic and cannot be completely rendered in digital form. This has warranted the use of a new term with broader reach: e-knowledge.

Benefits and of e-Learning over Conventional Training Measures

The following key benefits when comparing e-learning with conventional training methods:

- Improved accessibility-at the time, place and pace that suit the learner best
- Enhanced assessment of learning effectiveness through integrated tests assessments, assignments and the provision of automated record-keeping
- Improved management facilities thanks to the provision of real-time reporting on learner progress and activities
- Simplified logistics through the elimination of physical resources such as CD-ROMs, cassettes, books or conventional classrooms
- Complete consistency and no problems with version control, since all content is updated centrally
- Improved performance because learners ascend the learning curve and become productive

more quickly.

Where businesses train customers in the use of their products and are growing rapidly, e learning allows the organization to decouple the ratio between the size of their training function and the size of their ever expanding customer base. More specifically customers have experienced a wide range of quantifiable business benefits including:

- Time spent in training - reduced 70%
- Travel costs - reduced 50%
- Overall training costs - reduced 75%
- Number of sales meetings - cut in half
- Sales team productivity - increased 40%
- Added revenue stream - $150 million
- Training completion rates - tripled
- Number of employees trained - 25% higher

Internet Technologies

Internet technologies—and protocols—are the enablers of e-learning. Self-paced e-learning courses are hosted on Web servers and always delivered in a Web browser though some browsers are so customized, they look like something else. Peer-to-peer collaboration through Instant Messaging is an example of eLearning delivered outside a Web browser but still using Internet technologies. To leverage the power of the network, e-learning support and administration should also be browser-based. Telephone support is usually delivered using conventional telephone systems but using Voice over IP technology, it could be browser-based. By contrast, most mainstream content authoring tools are desktop applications. Others define eLearning more loosely. I have seen definitions that include any learning delivered through any electronic media including CD-ROM, videotape, audio cassette, SMS text message, broadcast telephone message, and so on. These might all be effective channels for the delivery of learning but they are not elearning any more than a fax—no matter how effective—is e-mail.

Convergence

Convergence of work and learning has been a hot topic for at least a decade. As a major trend and driver of change, this convergence is taking place in the context of the ongoing digital revolution, a revolution that has enabled innovation and transformation in most settings associated with learning, education, training, and research, as well as their administrative and support services. However, convergence has also been a buzzword of the digital revolution itself, where telecommunications and computing capabilities have been integrated into the daily devices through which we engage with the world. Over the last three to five years, convergence can be seen to be taking place in the delivery of services. One of the clearest examples of this is in the development of e-government, where integrated service delivery has become paramount. Billions of dollars have already been spent worldwide on this effort. In a similar way and more recently, services within the education and training sectors have been heavily influenced by the trends toward integrated service delivery as well as by portalization and personalization of information and services enabled through the Web. Moreover, the profoundly networked character of these new environments suggests that frameworks for service delivery will need to become increasingly flexible in their design. There are, of course, many other stories of convergence, most notably in the publishing industry, where the creator and

the consumer are becoming increasingly Dis-intermediated, and in the standardization world, where an increasing number of efforts are focused on similar challenges.

Growth

The growth of e-learning now underway gains further significance when considering the role and outputs of the various standardization groups. There are, in fact, a large number of these groups engaged in standardization, all of which are helping forge a vibrant and sustainable e-learning infrastructure. These groups are not just associated directly with the mainstream e-learning industry; they are also associated with e-business, knowledge management, and organizational development. It is not the intention here to elaborate in any detail about these groups, as there are numerous accounts that already deal with this theme. However, there are three key points that are worth making that provide further context in the emergence of e-knowledge. First, while the early years (1997–2000) of the "learning technology" standardization effort seem to have been met with only lukewarm or spasmodic responses by many "natural" stakeholders (such as e-learning practitioners within traditional institutions of education and training), the fact remains that standards (that apply to any industry) generally develop in the early growth phases of those industries. This lukewarm response was often motivated by a distrust of the big information technology (IT) corporations and by a perception that standards lead to regulation and thwart innovation. Over the past few years, such views have been giving way to enthusiastic engagement, much of which is being supported by government-funded "interoperability standards" initiatives (prominent examples include Curriculum Online in the United Kingdom and The Learning Federation in Australia). The growing internationalization of the e-learning standardization movement is also indicative of the industry maturing, facilitated largely through the efforts of groups such as the IMS Global Learning Consortium, the IEEE Learning Technology Standards Committee, and CEN/ISSS WS-LT (the committee leading learning technology standardization in Europe). Second, innovation is being stimulated by the development of these standards.

Once the basic specifications are in place and can be referenced as stable documents, then innovations typically flourish. In the case of e-learning, the first area of development has been focused on modular content development (through "learning objects") and content description, packaging, and exchange formats. Such developments have facilitated the seamless communication between digital content repositories and managed e-learning environments, providing end-users with the experience of working within an integrated environment. Third, the Internet revolution would have been impossible without standards such as TCP/IP, HTTP, HTML, and, more recently, XML. Where the ongoing evolution of Internet infrastructure is concerned, three key areas of standards development can be identified as providing the foundations for the emerging e-knowledge industry:

- Web Services and service-oriented architectures to facilitate development of common services that support a broad range of industry sectors
- Next generation Internet technologies such as high-bandwidth Internet2 applications, the Semantic Web, and Grid computing
- Standards facilitating e-learning and knowledge management

Finally, standardization efforts in fields of e-business, HR development, and knowledge management have also been underway for a number of years. Groups such as the Workflow Management Coalition, the HRXML Consortium, OASIS (Organization for the Advancement of Structured Information Standards), and GKEC (the Global Knowledge Economics Council) are all contributing to developing robust infrastructures and processes. These developments all

describe yet another story of convergence. They also underscore the widening scope of knowledge and processes that can be meshed with the aid of ICT-enabled infrastructures. Whether it is "ubiquitous computing," "pervasive computing," "intelligent environments," "ambient technology," or some other descriptor, there is a range of terminology that now describes the ever-increasing presence of ICT-enabled environments and innovations in mobile communications. "Any time," "any where," and "any how" become the everyday descriptors for einteractions whether they are wired or wireless. The proliferation of mobile computing and communications devices and the development of networks connecting new objects such as home appliances and security systems, transport, workplace, entertainment venues, and even the nursing home all point to the stimulation of all our modalities in making sense of the world and in developing effective skill sets in dealing with it. Learning, then, is not only a lifelong requirement; its scope and character are also changing. "Digital literacy" is changing the basics of the so-called "three R's" and is itself a term that will demand ongoing reassessment, particularly in learning contexts. The ubiquitous nature of digital technology is also shaping game-based learning and defining the primary learning mode for "digital natives". The saturation of our environment with digital technology and networked connections therefore also extends the tools through which we create, acquire, share, and manage our knowledge.

Dimensions of Knowledge

Reflecting on the nature of knowledge is not just a philosophical pursuit. It can be integral to the way we make sense of the world. It will increasingly become a routine competency of professionals sustained by knowledge-based economies. For anyone whose career is associated with professional education or training, it becomes a first principle in organizing information. "Knowledge" is a word that has rich semantics despite its linguistic status as a noun. It is common sense that knowledge is much more than a "thing" and subject to continual change, in the same way as consciousness changes from moment to moment. In the highly networked digital domain this is no different. "Content" is both a static resource and something that can flow through networks manifesting itself in endless ways—as documents, audio, video, animations, communications, financial data, and transactional data. Just like knowledge and beauty, content is in the eye of the beholder; or, in other words, one person's knowledge is another person's data. Most certainly, though, digital content finds expression as data, information, and knowledge.

Aspects of Knowledge Description

Know what- is the object of knowledge, e.g., knowledge management, the Internet, information systems, marine science, economics. Know who -Relationships, networks, connections, authorities, institutions, individuals, collaboration, associations, clubs. Know how-Skill, networking, consulting, collaborating, sharing, researching, reflecting, developing, testing, maintaining, doing, innovating, managing. Know why- Rationale, context, business planning, strategy, reasons, and explanations. Know where- Location, where to, where from, strategic positioning, planning, reflecting, navigating. Know when- Just in time, timing, pacing, planning, scheduling, context, the past, and the future. Know if -Just in case, scenarios, scenario development, foresight, futures, contingency. Thus, know who, for example, has a very different quality from know what or know how. Unless one knows why, in some circumstances, the effectiveness of accomplishing an act dependent upon rationale for doing so is likely to be questionable. Likewise, without a sense of know where (from and to) or know when, there is not much strategy in any planning. Also, the practice of developing contingency plans through foresight planning rests largely upon a capacity to know if. Most importantly, as we develop better models to support future e-learning core to the way we learn and develop knowledge: our own experience. For, as one

educationist argues, A crucial but often unrecognized dimension of learning is the capacity to make use of prior experience as well as emerging experience in new situations. With traditional methods of evaluating learning, we cannot discover just how a learner's prior experience might be brought to bear to help scaffold new understandings, or how ongoing experience shapes the content knowledge or skills and strategies the learner is developing (Syrverson, 2003). Such perspective is only present in very rudimentary ways in the e-learning and performance support systems that are currently available. This will no doubt change, for as Norris has recently argued the very nature of our "experience of knowledge" is changing in much the same way as the scope and character of learning are being extended (Norris, 2002). "E-knowledge" is one attempt to describe this richer experience.

Practical Implications

With a view to the practical implications of the foregoing discussion, the following prompts may be useful in determining appropriate action:

1. Know what—It is important to know not just your field of expertise, but also how it relates to the world of "e," where "e-anything" now signifies engagement with technologies that are transforming most industry sectors, from business process to learning, training, and knowledge management. What skills are needed?
2. Know who—we live within a profoundly networked world. Questions such as "who do you know who?" are important keys to unlocking connections and building networks.
3. Know how—-As knowledge-based economies grow, key skill sets associated with knowledge sharing will shape business process and help identify the sources of value. Do you know how to harness the "etools" effectively? Know how is also about translating and applying knowledge into effective action. Do you participate in organizational storytelling as a means of knowledge transfer and organizational learning?
4. Know when—this perennial concern is both a strategic and an operational consideration, but not just for management.
5. Know why—Understanding why provides clarity and direction. Without such clarity company mission statements and strategic goals become meaningless.
6. Know where— do you know where to find the information, tools, or expertise you need? Where within your organization and where beyond it? Questions of where are also to do with trajectory (where from and where to). Strategic planning is shaky without clarity on this.
7. Know if—Once upon a time. . . . Through storytelling and scenario development new dimensions to environmental scanning can be discovered, and the impact of the unexpected can be diminished.

Conclusion

The preceding discussion has focused on the development of e-learning as knowledge scaffolding, while also indicating a convergence of knowledge-based systems with e-learning systems. These trends are only just beginning. They are based on observations and practice and are not offered as fixed predictions. The world we live in and the worlds we share are always conditioned by uncertainties. Knowledge is conditional as is learning—both can be said to be complex adaptive systems. On this last point, John Seely Brown asks a key question: "What do we know that we didn't know ten years ago? That learning and knowledge are the result of multiple, intertwining forces: content, context, and community"

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