

E-Knowledge Comes to Campus

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Web-enabled infrastructures and practices are creating turbulent disruptions for virtually every institution and enterprise. Strategic responses to these disruptions are progressively leading to new best practices, business models, and strategies in a variety of domains. The acquisition, assimilation, and sharing of knowledge is one such domain that is truly experiencing a revolution. Using technologies that are already developed or will be deployed over the next five years, best practices in knowledge sharing are not only diffusing rapidly but will be substantially reinvented in all settings: education, corporations, government, associations, and nonprofits. Individuals and organizations will achieve quantum leaps in their ability to exchange knowledge. Even the manner in which they experience knowledge will be transformed.

From this revolution, e-knowledge will emerge as a defining concept. E-knowledge is created by the fusion of e-learning and knowledge management. Learners will come to accept this as a right once e-knowledge comes to campus and to every other venue where learning happens.

We have discovered examples of leading-edge enterprises that are currently using e-knowledge to achieve significant savings in the time, cost, and effectiveness of deploying and sharing e-knowledge. These are featured in our book, *Transforming e-Knowledge: A Revolution in the Sharing of Knowledge*, which can be reviewed in full at www.transformingeknowledge.info.

E-knowledge is about sharing digital content and context through new mechanisms and marketplaces. This will lead to new practices in e-knowledge commerce. But e-knowledge will touch every aspect of every organization: mission, vision, infrastructures, processes, and culture. The knowledge ecologies of academic organizations will change. Every aspect of campus planning will be affected as well: the design of academic facilities plans for wireless communication, campus master plans, and providing for different zones of pervasive, ambient technology. So e-knowledge must be understood by everyone.

A Vision Quest for Our e-Knowledge Future

Almost a year and a half ago, a team of writers assembled to focus on an important issue: the need for individuals and organizations to dramatically enhance their capacity to acquire, assimilate, and share knowledge in contexts under constant pressure of change.

We were drawn to this issue by our work with international bodies creating interoperability standards that would enable the automated sharing of digital

knowledge objects and service transactions, unheard of until recently. This work suggested dramatic changes in the patterns and cadences of academic life, and the emergence of knowledge marketplaces that would facilitate the exchange of digital content and the decoupling of context from content. Resourceful individuals could use these new tools to achieve an order-of-magnitude increase in their capacity to process knowledge. We foresaw dramatic changes in academic and commercial publishing and in many aspects of academic practice.

To support our efforts, we convened an international advisory group drawn from leading authorities in standards, knowledge management, and e-learning movements in Australia, China, India, Japan, North and Central America, and Europe. We sought insights and examples of best practice from all over the world, because many of the boundary-busting ideas are coming from outside North America.

Exploring the Impact of Pervasive and Ambient Technologies

Our investigations quickly revealed that the issues were even more complex and the ramifications more pervasive than we had initially thought. The development of wireless communications is creating technology-rich environments where individuals can carry networked digital devices like notebook computers, PDAs, cellular phones, pagers, and a myriad of converging tools that open new opportunities for communication and knowledge sharing. Moreover, *pervasive computing* is creating environments where ubiquitous computing devices are being embedded in everything from automobiles to offices to clothing to appliances to whiteboards and other displays. Coupled with emerging voice recognition and display technologies, these developments are turning every kind of public and private space into a potential knowledge-sharing and learning area. Projections suggest that by 2010, this sort of *ambient technology* will change the patterns of interactivity and the very manner in which we *experience* knowledge. At an accelerated, turbulent pace, everything will change, including the places in which we can experience knowledge, the intensity of our engagement with knowledge sources, the time sequence for accessing knowledge, our reliance on intelligent agents, our ability to multitask knowledge streams, and the *amenity* of the knowledge experience. When pervasive knowledge sharing and perpetual learning achieve amenity, they will become a fully integrated element of daily life. This will create pressures to become increasingly agile and responsive. Without strategic leadership, many will be unable to cope.

Organizational Infrastructures, Processes, Competencies, and Cultures

Our experience suggested that many colleges and universities were integrating institutional infrastructures – portals, ERP systems, learning management systems, library information services, and content management systems – to create an enterprise platform of powerful promise. However, institutional teams were struggling with how to achieve a reasonable return to justify this substantial investment. Return on investment (ROI) measured the hard, easily quantifiable returns resulting from greater productivity, cost reduction, and increased revenues. But ROI failed to capture many of the transformative

outcomes institutions could reap if they used the new infrastructures to reinvent their processes and practices, creating new experiences for learners, faculty, administrative staff, alumni, donors, and other stakeholders.

A new concept, *value on investment* (VOI), was needed to describe the returns that were possible if institutions used technology to change the dynamics of their processes. Indeed, we concluded that institutions should not make these infrastructure investments unless they are willing to reinvent processes, change their capacity to leverage and share knowledge, pursue new kinds of leadership, enhance collaboration and the ability to develop communities of practice, and enhance individual and organizational competencies in all these areas. At the same time our team was reaching these conclusions, financial conditions in American colleges and universities and in other institutions across the globe were leading institutional leaders to conclude that new solutions and strategies would be imperative.

Changing the Knowledge Ecology

To take advantage of e-knowledge as a tool in reinventing colleges and universities, institutional leadership must reinvent technology infrastructures, processes, and organizational structures, and facilitate acquisition of new competencies for individuals and organizations and the transformation of institutional culture. Indeed, the entire *knowledge ecology* of colleges and universities must change to create environments that dramatically accelerate the sharing and leveraging of knowledge. This new ecology will ground itself in collaboration and *communities of practice*, destined to become the signature and defining organizational form of the Knowledge Economy. Our team collected examples of institutions and other enterprises that are building tomorrow's knowledge cultures based on "enter once, use (and trust) anywhere" principles for knowledge reuse, and on dramatically reducing the costs of digital knowledge. A few examples of emerging or prospective e-knowledge cultures can be found at the University of Southern Queensland in Australia, eUniversity in the United Kingdom, and the American Society for Training and Development (ASTD) and ADL co-labs in the United States.

We came to understand that the developments in standards, e-knowledge processes, and knowledge marketplaces are interacting with the emergence of organizational infrastructures and knowledge ecologies. These interactions are enabling particular enterprises to develop new best practices in e-learning and knowledge management. But what the new leaders were achieving did not fit into our existing definitions of either e-learning or knowledge management. It was a concept that to be understood needed to move beyond the baggage of existing definitions and timeworn understandings. This is how we came to recognize (or rethink) the significance of having perpetual, fused processes of learning supported by vast, accessible, continuously changing resources of explicit and tacit knowledge. E-learning and knowledge management become fused in this new concept of e-knowledge. And they are essential to everyone in the organization, not just specialists or technologists.

A New Concept for a New Era

The new concept is *e-knowledge*, and it leads to another new concept: transactable e-knowledge. Transactions based on the sharing of knowledge that supports e-knowledge processes can be called *e-knowledge commerce*. Together, these forces are enabling not only new best practices but reinvention of the fundamental business models and strategies that exist for e-learning and knowledge management.

As our team dug into this third domain, we discovered four ways that best practices were being reinvented. We predict these developments will likely accelerate over the next five years:

- *New e-knowledge forms and capabilities will achieve wider acceptance. Digitized context will join content as a core element in knowledge construction. Content embedded in experiences will command a premium; just-in-time and just-in-case knowledge will become important elements of knowledge resources; enterprises will want to track the knowledge to which learners have been exposed and their level of mastery of it; and tradecraft-based knowledge will become a more important element of learning experiences in all enterprises.*
- *Knowledge repositories, services, and marketplaces will be established as foundations for e-knowledge. The dynamics and power relationships of publishing will change dramatically. Colleges and universities will leverage their roles as aggregators of supply and demand and play a greater part in academic e-knowledge commerce. Individual faculty will be empowered as providers and users. Important secondary markets will emerge for e-knowledge, repurposing content and context from colleges and universities for use with associations, corporations, and government agencies.*
- *Communities of practice will become the epicenters of knowledge stewardship and autonomic learning. The development of diverse and complex communities of practice with academic and administrative purposes will be one of the major developments in the first decade of the 21st century. They will be essential in achieving greater amenity in e-knowledge commerce, providing syntheses of insight to both participants and observers. The networked society will nourish them and encourage their replication.*
- *Impacts of new infrastructure and e-knowledge commerce environments will reshape knowledge ecologies. It is both fitting and somewhat ironic that the greatest impact of e-knowledge infrastructures and ecologies will be on the most human things: our patterns of interactivity and relationships. Individuals, communities of practice, and organizations will engage in new, rich patterns of interactivity, sharing experiences and forging powerful relationships, all supported by new technologies, infrastructures, and practices.*

It's All About Relationships

At the end of the day, e-knowledge is all about leveraging relationships between people and knowledge in a networked world. That's the emerging best practice. Relationships are the foundation for e-knowledge experiences and the fulcrum for leveraging e-knowledge commerce.

Achieving this understanding led our team to comprehend how e-knowledge is being used to develop new business models for learning and commerce:

- E-Knowledge enables a number of disruptive developments, discontinuities, and interventions, facilitating the reinvention of business models.
 - *Unbundling knowledge, learning resources, and experiences.* This deconstruction will enable innovators to reinvent learning experiences and the way they are supported by knowledge.
 - *Changing patterns of interactivity in developing, creating, and experiencing learning.* The roles and interactions of faculty, instructional developers, knowledge management specialists, expert practitioners, and learners are being rediscovered and reshaped.
 - *Dramatically changing the economics of e-knowledge commerce.* The sources and types of e-knowledge are being changed dramatically, and their unit costs are being driven down. The embedding of knowledge in a variety of value-added experiences is providing opportunities for premium pricing.
 - *Enabling disruptive offerings to develop in new settings and be imported when fully proven.* Lower-cost learning and knowledge practices are developing in emerging markets in Australasia and in Central and South America. The open-source movement is represented by developments like the Open Knowledge Initiative (OKI) and the uPortal Initiative, which will create a substantially reduced cost structure for some elements of e-knowledge infrastructures. Low-cost or free models will be selectively applied in North America, Europe, and other developed markets. But also watch events in the developing world as open source becomes an enabler for late entry into these markets.
- The emerging new generation of relationships with learners, customers, members, and other stakeholders can be leveraged to create new personalized products, services, and experiences.

Our team discovered new disruptive business models emerging at a host of providers including the University of Southern Queensland, learning centers in mainland China and India, eUniversity in the United Kingdom, and corporate and governmental settings. Many of these are not even on the radar screen for

institutions of American higher education. Any day now, they will spring into our marketplace.

Ten Actions to Accelerate Your Readiness for E-Knowledge

We also found examples of new strategies for using e-knowledge, but most institutions are still in the development phase of infrastructures and processes for e-knowledge commerce. But we were able to identify 10 actions that every institution should consider to accelerate its readiness for e-knowledge.

1. Engage faculty, staff, and other members of the campus community on the subject of e-knowledge; use storytelling to explore how learners, faculty, support staff, alumni, donors, and other stakeholders will experience knowledge in the future.
2. Develop a clear knowledge strategy for the institution, one that leverages knowledge assets in order to achieve the institution's mission and goals.
3. Support a variety of knowledge management and a community of practice pilots throughout the institution to determine what works.
4. Scan the environment for examples of changing best practices, business models, and strategies regarding e-knowledge. Understand current and emerging best practices.
5. Establish the reduction of the cost of knowledge sharing as an important enterprise goal, and develop the infrastructures and practices to do so.
6. Take a VOI approach to developing your institution's information and communications technology (ICT) infrastructure, focusing on applications and processes that reinvent the capacity to leverage e-knowledge assets.
7. Focus on the development of enterprise information systems including an enterprise portal and the capacity to personalize knowledge assets and experiences for prospective and current students, faculty members, support staff, alumni, donors, and other stakeholders.
8. Understand the knowledge ecology of your college or university, and make the development of e-knowledge capabilities a priority for the organization;
9. Monitor the latest developments in standards and processes for sharing knowledge, and translate into clear expressions of the implications of e-knowledge standards for your institution.
10. Develop protocols policies, and infrastructures for knowledge asset management (KAM) and external knowledge sharing. Participate in external knowledge sharing to develop and hone these capabilities.

In addition to these 10 actions, our team developed a variety of perspectives and approaches to be used by colleges and universities and other enterprises in developing knowledge strategies that can be linked to institutional missions, goals, and initiatives.

Getting Ready for Continuous Reinvention of E-Knowledge

What began as a plan for a five-month project focusing on standards and e-knowledge marketplaces concluded as a 14-month initiative that captured the richness and complexity of the transformation of e-knowledge. It became clear that each of the three major families of drivers of e-knowledge will be engaged in intersecting spirals of change and innovation. As a result, best practices, business models, and strategies will be continuously evolving between now and 2010 and beyond. These cycles of reinvention will cascade and sustain one another continuously. Fasten your seat belts; it's likely to be a bumpy ride.

Mobilizing Colleges and Universities for E-Knowledge

Between now and 2010, the elements of e-knowledge will mature: the technologies, standards, organizational infrastructures, e-knowledge marketplaces, changes in enterprise culture, and cascading cycles of reinvention of best practices, business models, and strategies. Enterprises and individuals anticipating these developments and mobilizing their energies will enhance their capacity to acquire and share knowledge. They will gain in competitive advantage.

Taken separately, e-learning, knowledge management, technology infrastructures and applications, and other specialized approaches to parts of the e-knowledge puzzle have failed to mobilize the energies of enterprises to undertake a transformational approach. They focus on small parts of the puzzle and develop special initiatives that get lost in the competition among strategic priorities. To succeed, enterprises must develop powerful, explicit knowledge strategies that link e-knowledge to competitive advantage. Then, these knowledge strategies can be reflected explicitly in enterprise statements of mission, vision, and goals and in the enterprise's specific business plans.

Our team has crafted *Transforming e-Knowledge* to provide easy-to-follow guidance on how to accomplish these things. We strived to make e-knowledge understandable to intelligent practitioners without technical portfolios. Our target is the holistic topic of e-knowledge. We invite readers to focus on how e-knowledge will enable denizens of Knowledge Age enterprises to experience knowledge in new and different ways. And we invite them to focus as well on how this will change the dynamics of our enterprises – the way we work, learn, and are.

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