

Applying Corporate Knowledge Management Practices in Higher Education

Colleges and universities have significant opportunities to apply knowledge management practices to support every part of their mission

by Jillinda J. Kidwell, Karen M. Vander Linde, and Sandra L. Johnson

Are the concepts of knowledge management (KM) applicable to colleges and universities? Some would argue that sharing knowledge is their *raison d'être*. If that is the case, then the higher education sector should be replete with examples of institutions that leverage knowledge to spur innovation, improve customer service, or achieve operational excellence. However, although some examples exist, they are the exception rather than the rule. Knowledge management is a new field, and experiments are just beginning in higher education.

We believe there is tremendous value to higher education institutions that develop initiatives to share knowledge to achieve business objectives. This article outlines the basic concepts of knowledge management as it is applied in the corporate sector, considers trends, and explores how it might be applied in higher education and whether higher education is ready to embrace it.

Knowledge Basics

Knowledge management is the process of transforming information and intellec-

tual assets into enduring value. It connects people with the knowledge that they need to take action, when they need it. In the corporate sector, managing knowledge is considered key to achieving breakthrough competitive advantage.

But what is knowledge? Knowledge starts as *data*—raw facts and numbers—for example, the market value of an institution's endowment. *Information* is data put into context—in the same example, the endowment per student at a particular institution. Information is readily cap-

tured in documents or in databases; even large amounts are fairly easy to retrieve with modern information technology systems.

Before acting on information, however, we need to take one more step. Only when information is combined with experience and judgment does it become *knowledge*. Knowledge can be highly subjective and hard to codify. It includes the insight and wisdom of employees. It may be shared through e-mailed “best practices” memos or even sticky notes on a cubicle wall. And once we have knowledge, we can put it to work and apply it to decision making.

A popular framework for thinking about knowledge proposes two main types of knowledge: *explicit* and *tacit* (see Figure 1).¹ Explicit knowledge is documented information that can facilitate action. It can be expressed in formal, shared language. Examples include formulas, equations, rules, and best practices. Explicit knowledge is:

- Packaged
- Easily codified
- Communicable
- Transferable

Tacit knowledge is know-how and learning embedded within the minds of

the people in an organization. It involves perceptions, insights, experiences, and craftsmanship. Tacit knowledge is:

- Personal
- Context-specific
- Difficult to formalize
- Difficult to communicate
- More difficult to transfer

Most business actions require the guidance of both explicit and tacit knowledge.

How does knowledge work in organizations? Knowledge originates in individuals, but it is embodied in teams and organizations, as shown in Figure 1. In an organization, examples of explicit knowledge are strategies, methodologies, processes, patents, products, and services. Examples of tacit knowledge in an organizational context are skills and competencies, experiences, relationships within and outside the organization, individual beliefs and values, and ideas.

Knowledge also is embedded in work processes, and it exists in all core functions of an organization as well as in its systems and infrastructure. Effective knowledge management programs identify and leverage the know-how embedded in work, with a focus on how it will be applied. The challenge in knowledge

management is to make the *right* knowledge available to the *right* people at the *right* time.

New Trends in Knowledge Management

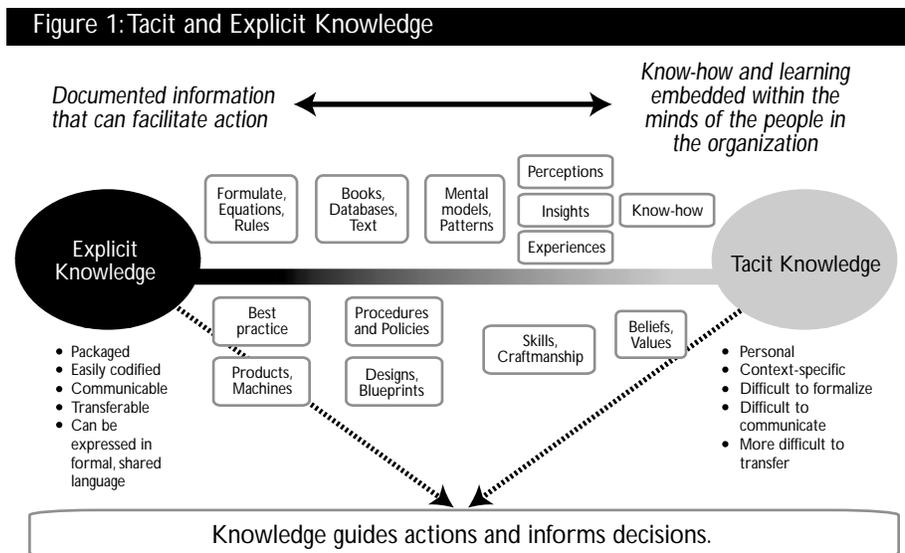
Several trends will shape the field of knowledge management in the not-too-distant future:

- Emerging technology solutions
- The convergence of knowledge management with e-business
- The movement from limited knowledge management projects to more enterprisewide projects
- Increasing use of knowledge management to enhance innovation
- Increasing use of tacit knowledge (rather than explicit knowledge)

EMERGING TECHNOLOGY SOLUTIONS

Lotus Notes, the software that packaged e-mail with data repositories and basic collaborative tools, was the first catalyst for knowledge management. Since Notes, most KM applications (including later versions of Notes) have migrated to intranet-friendly, Web-based platforms. Currently available solutions for search and retrieval, e-mail, collaboration, and so forth are much better today than they were even a year ago. However, no single application does all of these things well.

It is likely that the next “killer application” for knowledge management will be the corporate portal—a gateway to applications that integrate collaborative tools, business intelligence, and unstructured text search capabilities. Portals started as a way to organize a variety of Web-based information sources on one desktop interface: a search tool, news feeds, links to favorite Web sites, content organized by topic, and so forth. Corporate portals do the same thing, allowing users to customize their desktops to show information from a variety of



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sources within the organization (and usually from outside the firewall as well).

Some universities are already making use of the corporate portal concept. For example, one major state university system is developing Web-based portals to deliver integrated services previously addressed in a very disaggregated fashion. The business objectives of the first portal—for the university's central administration—include institutional marketing, creating brand identity, building community with prospective students and parents, becoming the gateway for finding information about university resources and programs, and providing a rich information environment for decision making. The portal serves multiple functions for multiple customers with one tool.

Development of a second, similar portal supports the vision of a new inter-campus collaborative for teaching and learning with technology. That vision calls for uniting the collective interests and goals of the campuses in the system in nurturing excellence in the use of technology for teaching and learning. The portal will improve the efficiency of knowledge exchange and deliver a set of shared business objectives that include communications around best practices, a gateway to research on the use of teaching and learning through technology, professional development, policy development and review, and resource development. The portal provides the faculty members at the individual campuses with efficient, direct links to current knowledge about teaching and learning through technology among the campuses of the university system, nationally, and internationally.

CONVERGENCE WITH E-BUSINESS

The trend toward portals as the technology tool of choice for knowledge leads to another trend: the convergence of knowledge management and e-business.

One reason for this trend is that the Web-based technologies that support e-business are now being applied to support KM (and vice versa). A more powerful reason is that both disciplines are about creating conversations, sharing knowledge, and building communities. Knowledge management has been about breaking down barriers within the organization, and e-business has been about breaking down barriers between the organization and its customers.

A major application of the convergence of e-business and knowledge management will be in managing business-to-business customer relationships.

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Extending the organization's communities to include the customer in the generation and exchange of knowledge promises to be an effective competitive advantage.

FROM LIMITED PROJECTS TO HOLISTIC PROGRAMS

As knowledge management matures as a corporate discipline, more companies will gravitate toward a more holistic approach to KM. Research shows that although many companies have begun to develop some sort of knowledge management capability, very few (6 percent) have implemented knowledge management programs on an enterprisewide scale. Over the past two or three years, a com-

pany could be recognized as a best-practice exemplar of knowledge management by having a single successful initiative—for having developed a robust intranet, for instance, or initiating communities of practice or redesigning a core business process around knowledge sharing.

This early tendency to focus on one type of initiative has fueled the debate between experts advocating a technocentric approach to knowledge management and those advocating a learning-centric approach. Organizations are already realizing that it does no good to have robust technology solutions if the existing culture prevents knowledge sharing, and conversely that it does little good to have pockets of robust knowledge sharing without some technological means of making knowledge widely accessible.

As organizations share their lessons learned about implementing knowledge management programs, some are discovering the interdependent nature of KM capabilities. They are finding that a balanced portfolio of knowledge management initiatives yields the best results and that excelling at technology-related capabilities does not preclude excelling at people- or process-related capabilities. (In fact, excelling in one area may well *depend on* excelling in another.)

MOVING FROM BEST PRACTICES TO INNOVATION

A March 2000 Conference Board survey report indicated that most knowledge management programs are still focused on creating repositories for storing and diffusing best practices, focusing on operational excellence and cost reduction.² While many companies have earned a significant payback from these efforts, the real payoff may lie in applying knowledge management to spur innovation.

Nokia is a good example of a company that has applied knowledge management to encourage innovation in its R&D and product development functions. The

company uses knowledge management practices to make sense of market trends and customer requirements and quickly puts that knowledge into action in the product development pipeline. Industry analysts report that Nokia delivers a new mobile communication product about every 25 days.

ADVANCES IN WORKING WITH TACIT KNOWLEDGE

Explicit knowledge, which consists of formulas, equations, rules, and best practices, is easier to work with than tacit knowledge, which involves perceptions, experiences, and insights because it can be recorded, stored in databases, and transported easily. The problem is that it is a little too portable—if you have it today, your competitors will likely have it tomorrow. And in any case, the mechanics of managing explicit knowledge are sufficiently well known that it will not provide a lasting competitive advantage.

The ability to manage tacit knowledge, on the other hand, promises to deliver huge returns for organizations that learn to use it effectively. The reason is that in the most valuable knowledge-intensive businesses—software development, say, or product design—the difference between a good performer and the best performer is huge. And the difference that matters most lies in tacit knowledge: a deep understanding of how to act on knowledge effectively.

Applying KM in Higher Education

Using knowledge management techniques and technologies in higher education is as vital as it is in the corporate sector. If done effectively, it can lead to better decision-making capabilities, reduced “product” development cycle time (for example, curriculum development and research), improved academic and administrative services, and reduced costs.

Consider the number of faculty and

staff who possess institutional knowledge. For example, what institution does not have a faculty member who has led successful curriculum revision task forces? Or a departmental secretary who knows how to navigate the complex proposal development or procurement processes? Or a researcher who has informal connections to the National Science Foundation? Or a special assistant to the president who has uncovered (or generated) useful reports that individual deans or department chairs could use to develop their own strategic plans?

Relying on the institutional knowledge of unique individuals can hamper the

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flexibility and responsiveness of any organization. The challenge is to convert the information that currently resides in those individuals and make it widely and easily available to any faculty member, staff person, or other constituent.

An institutionwide approach to knowledge management can lead to exponential improvements in sharing knowledge—both explicit and tacit—and the subsequent surge benefits. Tables 1 through 5 illustrate how knowledge management applications could benefit a number of university processes and services: the research process, curriculum development process, student and alumni services, administrative services, and strategic planning.

Is higher education ready to embrace knowledge management? A key ingredi-

ent in an institution’s readiness to embrace knowledge management is its culture—the beliefs, values, norms, and behaviors that are unique to an organization. Informally, it is the unwritten rules or “how things really get done.”³ Higher education is moving from the old culture that considers, “What’s in it for me?” to a new culture that says, “What’s in it for our customer?” And it is developing a culture that is ready to embrace knowledge management.

As institutions launch knowledge management initiatives, they can learn lessons from their counterparts in the corporate sector. Some key points to remember are:

- *Start with strategy.* Before doing anything else, determine what you want to accomplish with knowledge management.
- Organizational infrastructure—human resources, financial measurements of success, and information technology—should support knowledge management. *Think of technology as an enabler, and measure the impact of KM* in financial terms, such as cost reductions, customer satisfaction, and speed to market.
- *Seek a high-level champion for the initiative*—someone who believes in its benefits and who can advocate as needed.
- *Select a pilot project for knowledge management*—ideally one with high impact on the organization but of low risk to build credibility for knowledge management. If possible, make the pilot one that participants will enjoy and find rewarding.
- *Develop a detailed action plan for the pilot* that defines the process, the IT infrastructure, and the roles and incentives of the pilot project team.
- After the pilot, *assess the results and refine the action plan.*

Summary

Colleges and universities have significant opportunities to apply knowledge management practices to support every part of their mission—from education to public

Table 1: **Application and Benefits of KM for the Research Process**

Knowledge Management Application	Benefits
<p>A repository of:</p> <ul style="list-style-type: none"> • Research interests within an institution or at affiliated institutions (potential subcontractors). • Research results (where possible) and funding organizations (federal agencies, foundations, and corporations) with easy search capabilities to facilitate interdisciplinary opportunities. • Commercial opportunities for research results. <p>A portal for research administration procedures and best practices related to:</p> <ul style="list-style-type: none"> • Funding opportunities. • Pre-populated proposals, budgets, and protocols. • Proposal-routing policies and procedures. • Award notification, account setup, and negotiation policies and procedures. • Contract and grant management policies and procedures. • Technical and financial report templates and policies and procedures. • Overview of internal services, resources, and staff. 	<ul style="list-style-type: none"> • Increased competitiveness and responsiveness for research grants, contracts, and commercial opportunities. • Reduced turnaround time for research. • Minimized devotion of research resources to administrative tasks. • Facilitation of interdisciplinary research. • Leveraging of previous research and proposal efforts. • Improved internal and external services and effectiveness. • Reduced administrative costs.

Table 2: **Application and Benefits of KM for the Curriculum Development Process**

Knowledge Management Application	Benefits
<ul style="list-style-type: none"> • Repository of curriculum revision efforts that includes research conducted, effectiveness measures, best practices, lessons learned, and so forth. • Repository of content modularized and arranged to facilitate interdisciplinary curriculum design and development. • Portal of information related to teaching and learning with technology, including faculty development opportunities, outcomes tracking, lessons learned, best practices, technology overviews, and so forth. • "Hubs" of information in each disciplinary area, including updated materials, recent publications, applicable research, and so forth. • Repository of pedagogy and assessment techniques, including best practices, outcomes tracking, faculty development opportunities, and research. • Repository of analyzed student evaluations updated each semester for lessons learned and best practices for all faculty. • Portal for new faculty with guides for developing curriculum, working with senior faculty, establishing effective teaching styles, advising do's and don'ts, supervising PhD students, and so forth. • Repository of corporate relationships to identify curriculum design advisory task forces, guest speakers, adjuncts, case study sites, and so forth. 	<ul style="list-style-type: none"> • Enhanced quality of curriculum and programs by identifying and leveraging best practices and monitoring outcomes. • Improved speed of curriculum revision and updating. • Enhanced faculty development efforts, especially for new faculty. • Improved administrative services related to teaching and learning with technology. • Improved responsiveness by monitoring and incorporating lessons learned from the experiences of colleagues, student evaluations, and corporate or other constituent input. • Interdisciplinary curriculum design and development facilitated by navigating across departmental boundaries.

Table 3: **Application and Benefits of KM for Student and Alumni Services**

Knowledge Management Application	Benefits
<ul style="list-style-type: none"> • Portal for student services for both students and for faculty and staff at the institution so that they are well informed to advise students. Information could include policies and procedures related to admissions, financial aid, registration, degree audit, billing, payment process, advising and tutoring, housing, dining, and other services. This portal could be personalized for individual schools or student groups to customize service offerings. • Portal for career placement services (potentially part of a large portal for all corporate connections) to provide a one-stop service center for students, but also for faculty and staff to ensure they are informed. • Repository of student affairs services for faculty and staff to ensure all constituents understand existing services and can provide proper advising. • Portal for alumni and development services to minimize redundant efforts; capture contact reports; and link to research, curriculum, and career development efforts. • Portal for information on outreach constituents to integrate efforts and minimize redundant efforts. 	<ul style="list-style-type: none"> • Improved services for students. • Improved service capability of faculty and staff. • Improved services for alumni and other external constituents. • Improved effectiveness and efficiency of advising efforts (to integrate fragmented efforts currently undertaken by faculty, academic support staff, student services staff, and student affairs staff).

Table 4: **Application and Benefits of KM for Administrative Services**

Knowledge Management Application	Benefits
<ul style="list-style-type: none"> • Portal for financial services (that is, budgeting and accounting) that includes FAQs, best practices, procedures, templates, and communities of interest to share information and serve as impetus for improvement efforts. • Portal for procurement (that is, purchasing, accounts payable, receiving, warehousing) that includes FAQs, best practices, procedures, templates, and communities of interest (for example, by commodity, purchasing vehicle, vendor, and so forth) to share information and serve as impetus for improvement efforts (for example, leverage lessons learned from others in the institution, design on-line vendor sites such as Web-based catalogs). • Portal for human resources (that is, vacancy-to-hire, payroll, affirmative action, and so forth) that includes FAQs, best practices, procedures, templates, and communities of interest to share information and serve as impetus for improvement efforts. 	<ul style="list-style-type: none"> • Improved effectiveness and efficiency of administrative services. • Enhanced ability to identify improvement efforts. • Improved ability to support the trend toward decentralization (for example, local business centers) by providing guidelines for consistency. • Improved compliance with administrative policies such as procurement, preferred vendors, procurement card policies, budgeting procedures, affirmative action guidelines, and so forth. • Improved responsiveness and communication capabilities.

Table 5: **Application and Benefits of KM for Strategic Planning**

Knowledge Management Application	Benefits
<ul style="list-style-type: none"> • Office of Knowledge Management, emerging from the previous Office of Institutional Research. • Portal for internal information that catalogs the strategic plans, reports developed for external audiences (for example, IPEDS, accreditation reports), clear data definitions, presentations by executives, and so forth. • Portal for external information, including benchmark studies, environmental scans, competitor data, links to research groups, higher education research groups and publications, presentations by executives, and so forth. • Monthly "market watch" developed in tandem with Admissions, Continuing Education, Alumni and Development, and others that document key trends and potential implications. • Repository of data related to accountability and outcomes tracking by monitoring assessments, performance indicators, benchmarking, and so forth. 	<ul style="list-style-type: none"> • Improved ability to support the trend toward decentralized strategic planning and decision making (for example, block budgeting, responsibility center management). Better information leads to better decisions! • Improved sharing of internal and external information to minimize redundant efforts and lessen the reporting burden plaguing many institutions today. • Enhanced ability to develop up-to-date and market-focused strategic plans. • Shared knowledge from a variety of constituents to begin to create a "learning organization" which is responsive to market trends.

service to research. Knowledge management should not strike higher education institutions as a radically new idea; rather, it is a new spin on their *raison d'être*. But implementing knowledge management practices wisely is a lesson that the smartest organizations in the corporate and not-for-profit sectors are learning all over again. *e*

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Endnotes:

1. T. M. Koulopoulos and C. Frappaolo, *Smart Things to Know about Knowledge Management* (Dover, NH: Capstone US, 1999); M. Polanyi, *The Tacit Dimension* (London: Routledge & K. Paul, 1967).
2. B. Hackett, *Beyond Knowledge Management: New Ways to Work* (New York: The Conference Board, March 2000).
3. Ibid.

Jillinda J. Kidwell (jill.j.kidwell@us.pwcglobal.com) is a partner of PricewaterhouseCoopers LLP (PwC); Karen M. Vander Linde (karen.m.vanderlinde@us.pwcglobal.com) is a partner of PwC and a senior partner in PwC's Center for Performance Improvement; Sandra L. Johnson (sandra.l.johnson@us.pwcglobal.com) is a director in the education practice of PwC.

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