

**Collaborative**

**KNOWLEDGE NETWORKS**

Driving workforce performance through Web-enabled communities

## Introduction

In the face of ever-growing pressures for improved performance and enhanced shareholder value, many executives instinctively try to exert more and more control over the organizations they lead. This reaction may not only be ineffective, it may also be counterproductive. Indeed, many successful companies are finding that *relinquishing* some control – specifically by creating the conditions that enable employees to self-organize in virtual communities – is an effective strategy for responding to market pressures.

These informal communities – commonly referred to as “communities of practice” or “communities of interest” – are steadily proliferating in the workplace today. Organizations that create an environment that supports their formation are gaining significant benefits in the areas of knowledge transfer, response times, and innovation – not a bad return for executives who know when and how to loosen the reins. Companies such as Chevron, Royal Dutch/Shell, Oracle, and National Semiconductor have witnessed impressive results – from collapsed cycle times to drastically reduced operation costs.

In simple terms, communities of practice are groups of people working together outside conventional organizational structures, but “informally bound together by shared expertise and passion for a joint enterprise.”<sup>1</sup> When linked electronically into collaborative knowledge networks (CKNs), these communities enable rapid knowledge sharing that accelerates many important business processes: They can help companies rapidly respond to new and changing customer needs, improve supply chain efficiency, streamline product development processes, and facilitate a wide range of special projects. Taking advantage of connectivity throughout the extended enterprise, CKNs make it possible for people and communities to collaborate freely across geographic and organizational boundaries. What’s more, CKNs have the potential to drive key processes faster and more effectively than traditional structures.

*Communities of practice are self-organized and self-directed groups of people, informally bound together by a common mission and passion for a joint enterprise.<sup>2</sup>*

*Collaborative knowledge networks link communities of practice together, providing a technical and social infrastructure for collaboration and knowledge management.*

*Communities of practice flourish throughout global organizations, forming structures that promote the creation of knowledge and its use*

NUMBER OF COMMUNITIES OF PRACTICE

Daimler Chrysler	140
Siemens	345
World Bank	120
Chevron	100

SOURCE: APOC, SEPTEMBER 2001

Unlike many initiatives, however, virtual communities cannot be mandated into action if they are to be effective. Nor can they be easily controlled. In fact, traditional approaches to implementation and deployment do not work with virtual communities. In their most powerful form, these communities are self-organized and organic in their nature. They evolve as needs and opportunities arise. They are also non-hierarchical; members earn their right to participate by bringing relevant expertise and knowledge to bear.

*When linked electronically into CKNs, communities of practice help organizations to drive innovation and accelerate key business practices.*

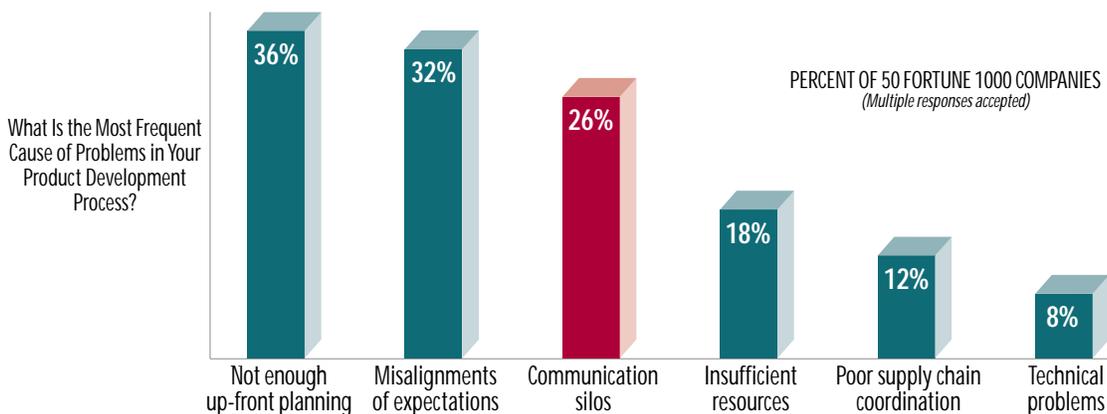
*CKNs help organizations to bring together the right people, with the right skills and knowledge, at the right time.*

Spanning the boundaries of organizations, virtual communities defy many hierarchical practices. Consider the fact that increasing numbers of workers perform their jobs via Web-enabled technology – on a desktop, Blackberry, mobile Internet device, or whatever facilitates their ability to do their jobs more effectively. With synchronous or near real-time information and communication, employees, customers, suppliers, and strategic partners have the potential to make better decisions more quickly. As a result, firms can maneuver with greater speed and agility. Traditional organizational structures and bureaucracies, in contrast, often hinder responsive decision making.

Leaders today should understand that one of their jobs is to monitor and facilitate the linkage of communities of practice to form collaborative knowledge networks. They should know how to respond to the communities already emerging within their companies – and how to get new ones aligned around critical business objectives. They must anticipate the cultural, organizational, and technological preconditions necessary for collaborative practices to flourish. And, they must also understand that effective communities are about trust – trust by employees that their participation will be valued, and trust by companies that workers will make responsible decisions.

*A 1997 research study found that technology-cycle times in the biotech industry were shorter in highly innovative units that focus on a sense of community rather than bureaucratic structure. It also found that communication, learning, and knowledge flow most easily in R&D units where management develops strategic objectives and context, but allows great freedom and autonomy to its employees.<sup>3</sup>*

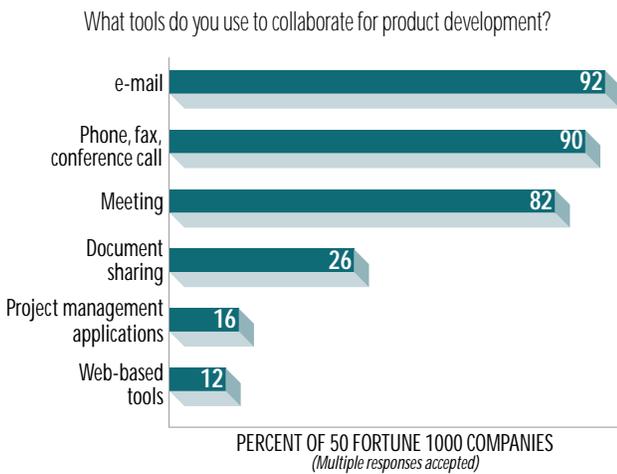
FIGURE 1. COLLABORATIVE PRODUCT DEVELOPMENT IS MOST HINDERED BY GAPS IN PLANNING, EXPECTATIONS, AND COMMUNICATION. CKNs HELP TO BRIDGE THOSE GAPS.



SOURCE: FORRESTER RESEARCH

We believe the effective use of community-driven collaborative knowledge networks is fast becoming a hallmark of high-performing organizations. Companies that learn to manage and leverage these networks effectively will be more agile, more efficient, and more innovative than those that do not. This Deloitte Research Viewpoint explores strategies for companies that seek to leverage their intellectual assets to compete more effectively. It presents a framework and guidelines for nurturing virtual communities, and for linking them into networks both within the enterprise and across the entire value chain.

FIGURE 2. WEB-BASED TOOLS ARE UNDERLEVERAGED



SOURCE: FORRESTER RESEARCH

*Without an effective Web-based network approach, in-house best practices may take an average of 27 months to make their way from one part of an organization to another – even in the best of firms.<sup>4</sup>*

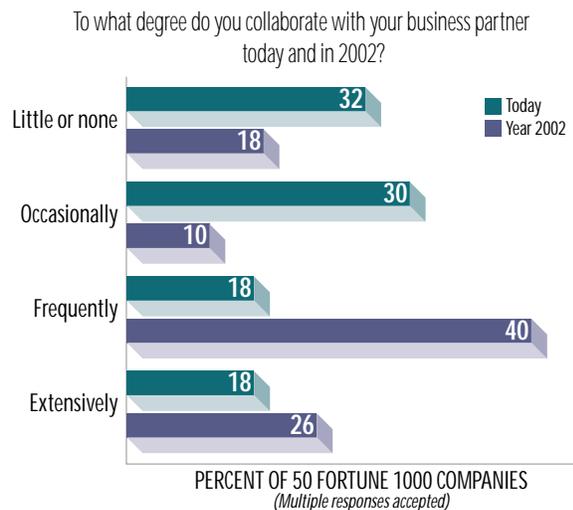
## Why Collaborative Knowledge Networks Are Gaining Momentum

Collaborative knowledge networks are gaining momentum because of two converging factors. First, new technologies have made collaboration relatively easy and inexpensive. And second, creative employees are finding ways to apply those technologies to the daily challenges they confront in the workplace. Those challenges reflect the impacts of six significant business trends:

**1. SHAREHOLDER PRESSURE.** Corporate scope and scale no longer confer absolute advantage; success requires agility. Companies need employees to be creative, to work more effectively, to innovate, and to adapt quickly to change. Traditional organizational structures and procedures can hinder responsiveness.

**2. KNOWLEDGE AS A CRITICAL ASSET.** Managing the glut of information requires that people can prioritize, synthesize, and transform it into meaningful, useful knowledge. Social networks facilitate the access to expertise that employees need to evaluate, contextualize, and understand the meaning of information so that they can successfully apply it to their jobs.

FIGURE 3. LARGE FIRMS ANTICIPATE INCREASED COLLABORATION WITH THEIR BUSINESS PARTNERS IN 2002



SOURCE: FORRESTER RESEARCH



## *Creating competitive advantage at* **ROYAL DUTCH/SHELL**

The energy industry is collaborative by nature. Oil exploration, for example, requires talent across many disciplines involving petrophysicists, geophysicists, geologists, and engineers, among others. Many energy firms were veterans at collaborative learning and knowledge sharing long before the arrival of the Internet. In fact, Arie de Geus, who led strategic planning during his 38-year tenure with Royal Dutch/Shell, is widely credited with initiating the concept of the learning organization, asserting that “the ability to learn faster than your competitors may be the only sustainable competitive advantage.”

Shell believes their ability to surface knowledge and disseminate it throughout the organization gives them a competitive advantage. It has also helped them to better leverage their investments. In the mid-1980s, for example, Shell bought exploration leases in the Gulf of Mexico, even though it did not yet have the knowledge and technology to explore and drill wells in water that deep. By encouraging regular, informal agenda-less meetings, Shell’s Deepwater Division sparked the interchange that helped engineers quickly learn how to explore and dig deepwater wells before the Gulf of Mexico leases expired. Such “water-cooler” discussions are often the best way to surface the tacit knowledge required to solve complex problems.

The understanding that knowledge is socially embedded helps Shell to reap significant rewards – especially with the advent of the Internet. By linking 13 communities of practice, encompassing more than 10,000 users, Shell’s Exploration and Production business estimates that it sees benefits of at least \$200 million per year from community-driven knowledge sharing initiatives.<sup>6</sup>

**3. BLURRING CORPORATE BOUNDARIES.** Technology today allows firms to achieve scale advantages without having to engage in mega-mergers. But as most firms can attest, successful partnering and outsourcing arrangements require much more than electronic linkages to share information. When the value of partnering is predicated on factors other than price, firms need to create the infrastructure and conditions that support long-term relationship building.

**4. CUSTOMER IMPERATIVE.** After spending billions of dollars on Customer Relationship Management projects, companies are now looking to leverage those investments. Leading organizations understand that key customers must be treated as partners in anticipating, designing and delivering on their current and future needs. Successfully executing customer-centric strategies often means creating an environment that allows for ongoing, consistent dialogue.

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**5. TRANSFORMATION OF TRADITIONAL ORGANIZATIONAL STRUCTURES.** Many companies are moving toward decentralized and team-based work environments to improve their responsiveness. And fewer layers of management may be needed in areas where technologies can be deployed to provide consistent real-time information and decision-making capabilities.<sup>8</sup> As employees’ jobs draw them into networks of alliances, they often find it difficult to know who knows what. CKNs provide the transparency they need to first determine who knows what, and then to draw experts into their communities until knowledge can be transferred and applied.

**6. GLOBAL TALENT SHORTAGE.** The exodus of institutional knowledge exposes organizations to significant risks. Downsizing is but one factor firms must consider. Despite the slowing economy, a skills shortage looms in two key areas throughout Europe, Japan, and the United States: management and information technology. A retiring baby boom generation will drive part of this pending deficit in talent. One automotive executive recently stated that his company expects to lose 40 percent of its management team to retirement in the next five years. The American Nurses Association anticipates a nursing shortage as high as 20 percent by 2020. Meanwhile, the demand for information technology workers is expected to grow by more than 100 percent over the next six years - despite the current slowdown.<sup>9</sup>

By allowing CKNs to evolve in their organizations, executives help alleviate turnover and tight pools of talent in several ways. First, organizational knowledge can be captured by technology as a resource for new and seasoned employees. Second, the networks of contacts that emerge from community participation allow professionals to engage with people who can help them quickly make sense of the information available to them. Third, collaborative networks help firms to integrate and align the efforts of outsourced personnel – software engineers in New Delhi or customer service reps in Kansas City, for example – to mirror the culture and strategic objectives of the organization. Fourth, company alumni can be drawn into collaborative networks to tap their experience and knowledge. Finally, firms lure and retain talent when people are given the chance to perform. Allowing employees to participate in collaborative networks enhances job satisfaction by helping them to locate the resources they need to create value for the organization.



## ***Building a community of developers to*** **FILL RESOURCE GAPS**

The Oracle Technology Network (OTN) was originally launched as a site where Oracle developers – both inside and outside the company – could download the latest tools, take skill-building tutorials, post messages on bulletin boards, and discuss concepts and problems. Within two years, hundreds of thousands of members worldwide signed on to receive free software and technical information.

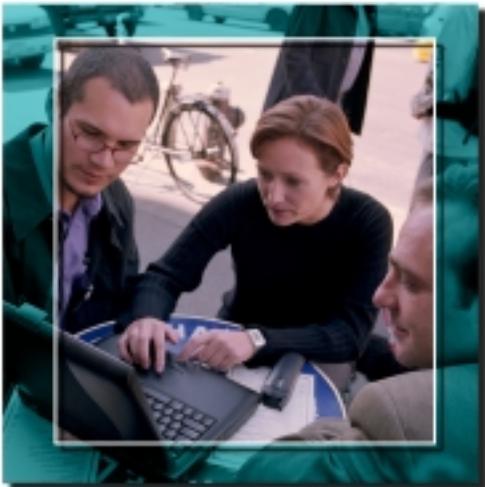
The draw of the site served as a great basis for firms and Oracle-skilled freelancers to find one another. Recognizing an opportunity, Oracle launched the OTN Xchange in Fall 2000. Positioned as a service to the developer community, OTN Xchange serves as an online marketplace where developers can buy, sell, and auction technical services. It helps Oracle to combat its own shortage of skilled IT professionals, as well. No longer restricted to finding programmers in their immediate area, companies now contact and hire talent from Silicon Valley to China to India and beyond. The site adds further value by allowing users to collaboratively manage individual, corporate, or open source development projects online.

Oracle collects no commission for enabling employment transactions, which makes the service appealing to both buyers and sellers. For firms, access to a pool of talent has become exponentially wider and, in many cases, cheaper. For hundreds of thousands of independent developers, access to high-paying work has become simpler and more direct. For Oracle, the network effect ensures not only license fees and the increased use of its products, but the rapid development of new Oracle-run software as it is tested and applied to thousands of independent projects at a time.<sup>10</sup>

These trends are harbingers of a new kind of organizational stress – and the mass of raw information dumped into organizations every day exacerbates their impacts. Yet underlying each trend is a common theme: organizations must learn to capture and transfer knowledge more effectively and more efficiently – no matter where it exists within their value chain.

Collaborative knowledge networks require and foster a different mentality within organizations – one based on the continuous sharing of knowledge. They know no boundaries. They span the needs of all organizational stakeholders – employees, customers, suppliers, strategic partners, and investors – and include subject matter experts, such as academics and independent consultants, who are outside the extended enterprise.

*The key to successful collaboration and knowledge transfer lies not in technology, but in allowing people to build social networks connected by technology. "Network building is relationship building... you really cannot build relationships through a Web site alone."<sup>11</sup>*



## How Communities Enable Collaborative Knowledge

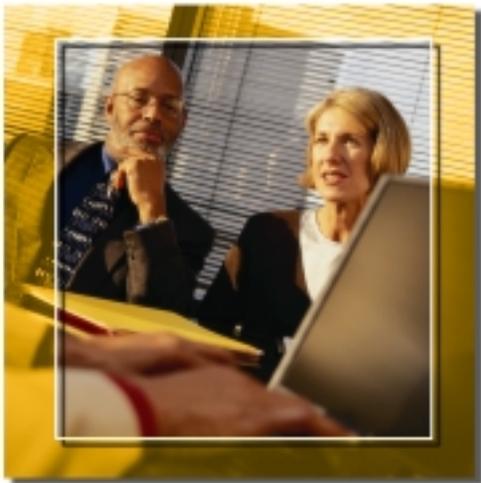
Virtual communities can reside anywhere, linking individuals within business units across the enterprise and throughout the extended value chain. In some cases, they may operate independently from the organizations that spawn or contribute to them, as occurs with antivirus response teams. Or they may form the basis for new organizations, as occurred when Linus Torvald's open-source software community matured into Linux. They can include employees, customers, vendors, and partners – evolving as necessary to accomplish their objectives. In many large companies, virtual communities are already alive and thriving, whether managers know about them or not. Indeed, these communities often simply happen in organizations where creative employees are tasked with solving business problems and operating more productively.

But just what *are* their objectives? Why do virtual communities happen in the first place? And what do they actually *do*?

Communities evolve as employees seek to find effective ways to find and share important knowledge. They generally happen naturally and spontaneously. Working through informal channels, interested individuals network to find, educate, and support one another. Cutting efficiently through regional and organizational boundaries, they help each other to understand and manage the deluge of information swirling through most organizations. When supported by appropriate technologies, management sponsorship and vision, and the necessary organizational and cultural foundation, communities of practice elegantly mesh expertise and access so participants get the knowledge they need – faster.

But before you start thinking of communities as things you can manage, understand that they often operate best when spared managerial intrusion. Web-enabled communities of practice can come together, operate for a few days or months, and then disappear or replace themselves as new needs, new agendas, and new communities take shape. They are fungible: participation changes depending on the nature of the objectives. Newcomers replace old-timers – and communities evolve organically as participants learn and exchange knowledge.

“Unlike more formal types of organizational structures, it is not so clear where they begin and end,” writes Etienne Wenger. “They do not have launching and dismissal dates. They are different from, say, a task force or a team. Based on joint learning rather than reified tasks that begin and end, a community of practice takes a while to come into being, and it can linger long after an official group is disbanded.”<sup>12</sup>



## How Do Virtual Communities Differ From Teams?

In many companies, cross-functional teams have evolved as a key organizational feature, linking functions and departments that may otherwise never interact with one another. What happens, though, when teams are cast into cyberspace? How do the rules change? What is different when people collaborate virtually, instead of on a face-to-face basis?

Virtual communities form and operate differently than teams do. For example, teams are likely to be task-oriented – formed to achieve a specific goal. Team membership tends to remain static and inwardly focused. When teams disintegrate after achieving their goals, their learning tends to evaporate as well – even if the fruits of their efforts live on. As a result, new teams often repeat the mistakes of past teams. The organization, in a sense, doesn't become any smarter.

Communities, on the other hand, tend to live longer than teams – creating knowledge among participants in a continuous and iterative fashion. In this sense, the knowledge is “sticky.” It is more easily retained and evolves through members' consistent participation.

The advantage that technology brings to communities – by linking members together on a continuous basis – does not mean that firms should launch all their teams into the virtual world. To begin, teams may be more effective in achieving clearly-defined tasks within a limited period of time. And teams carry some benefits over communities, especially when physical co-location and face-to-face interactions are important for collaboration. Companies must create the right balance of the two, while recognizing their inherent advantages and disadvantages.

## HOW TEAMS ARE SIMILAR TO COMMUNITIES

TEAMS AND COMMUNITIES	
<b>Shared Purpose</b>	A group of people sharing joint accountability organized around interdependent work with common and clear goals linked to a strategic mission and vision.
<b>Shared Identity</b>	Require shared language, rapport, identity, and trust. Strength depends on successful relationship building.
<b>Create Synergies</b>	Create synergies by allowing members to build on each other's ideas to deepen their thinking and understanding.
<b>Opportunity for Learning</b>	Offer members a safe environment in which they are often encouraged to step outside their daily tasks to reflect on the bigger picture and learn.

## HOW TEAMS DIFFER FROM COMMUNITIES

	TEAMS	COMMUNITIES
<b>Interaction</b>	Relatively static in nature; tend to be driven by meetings or events.	Ongoing, fluid, dynamic interaction facilitated by technology.
<b>Location</b>	Tend to be co-located within the same physical space.	Only limited by technological capability, and sometimes language and culture barriers.
<b>Organizational Function</b>	Fill the gaps between functional and departmental silos.	Fill the gaps between functional, departmental, organizational, and value chain silos.
<b>Membership</b>	Membership often constrained by geography and functional limitations.	Membership is broad, diverse, and fluid. Critical roles might include subject matter experts; networkers who mine social capital and facilitate knowledge flow; and applied innovators who transform ideas into action.
<b>Transparency</b>	Teams may not be transparent to one another.	Communities, when linked together into collaborative networks, offer transparency to one another, allowing them to work toward common enterprise goals.
<b>Ease of Communication</b>	Face-to-face interaction facilitates communication.	Compensates for lack of face-to-face and real-time contact by utilizing mix of collaborative technologies, including bulletin boards, threaded discussions, electronic rooms, video-conferencing, and short messaging.
<b>Learning</b>	Team members learn from one another through shared goals and tasks.	Participants within and across communities learn from each other based on joint, continuous discovery. People seek membership as a means of learning and building their own knowledge base.
<b>Knowledge Capture</b>	Knowledge increases during life of team, but is often limited to members and stagnates when team disbands. Despite codification, results are often hard for others to understand and assimilate.	Knowledge is captured in repositories on an ongoing basis. Transparency between communities mitigates differences in language and norms. Survival of communities means participants are available to clarify information.
<b>Innovation and Creativity</b>	Shared norms, languages, and culture may facilitate interaction, but may also limit creativity, resulting in group-think.	Bringing together people of different disciplines, perspectives, and ways of thinking tends to enhance creativity and innovation, but may be harder to manage.
<b>Resource Requirements</b>	Tends to be limited to investment of time and training; some technological support required.	Heterogeneity may require greater effort and resource investment to manage; supporting technologies require greater capital investment.

SOURCE: DELOITTE RESEARCH

## Community-Driven Powerhouses

It's hard at first to get a handle on communities of practice: They just don't fit with traditional organizational paradigms. That's because they take shape informally around common missions shared by people who want to get things done. They are self-initiated and self-directed – and although they cannot be mandated or controlled, they must be supported from the top. Communities of practice generally share the following characteristics:

*For communities to be effective, participants' efforts must clearly link back to the strategic goals and value proposition of the organization.*

**FOCUSED.** For communities to be effective, participants' efforts must clearly link back to the strategic goals and value proposition of the organization. This requires strong leadership and communication strategies so that members clearly understand the core values and imperatives of the organizations they represent. They must also understand their role in fulfilling organizational objectives. When this understanding exists, members gain focus by first setting clear, compelling, and easy-to-grasp objectives, and then by prioritizing and aligning their collaborative efforts toward those goals.

**VOLUNTARY.** People who voluntarily engage in communities are generally more motivated to contribute than those whose participation is mandated – especially when their effort is recognized and rewarded by the organization. Highly motivated and enthusiastic individuals tend to share deeper and more meaningful learning experiences and achieve higher performance.



### *Community-driven innovation at* NATIONAL SEMICONDUCTOR

California-based National Semiconductor creates semiconductor products to move and shape information. A critical technology in many of National's leading-edge computer chips involves Phase Lock Loops (PLLs). Initially, the engineers who specialize in PLLs worked independently of product groups – and often of one another. In the mid 1990s, however, a community of engineers came together on an informal basis to assist and review the PLL designs of product groups. Over time, the self-organized and self-directed engineers convened again and again to help product teams resolve issues and explore new options. The more they met, the more they pushed each other's thinking and the more successful they became at delivering value.

The community was not mandated by the organization. They operate strictly on an off-the-org-chart basis. The value the engineers deliver to the organization is embedded in the community and continues to grow as their collaborative experience grows. Attempting to simply codify their practice and launch it onto an intranet would have been ineffective. Similarly, posting their best practices in a knowledge repository would become meaningless without the support of the community to lend context. Instead, National Semiconductor has trumpeted the work of the PLL community, as well as others, by launching a browser-based community of practice page highlighting their work. Advanced security features, built into the company's servers, help to keep technology competence confidential as it is shared throughout the organization. And the community is recognized and rewarded for their support of colleagues who need to understand PLL technology to create value for the company.<sup>15</sup>

**NON-HIERARCHICAL.** Rigid hierarchies, in which individuals exercise authority and position, can stifle innovation, risk-taking, and the free flow of ideas. In fact, organizational growth tends to be higher in those corporate cultures that support breaking the rules, according to Lynne Weldera, CEO of InMomentum.<sup>16</sup> Contributions of unencumbered thinking and substance – not organizational charts – are the currency of value in innovative and goal-achieving communities.

**HETEROGENEOUS.** Diverse perspectives spur out-of-the-box thinking and creativity, and mitigate the risk of group-think. The downside of diversity is that heterogeneous communities may carry a natural tension that can be challenging at times. But benefits outweigh the risks when natural leaders emerge and understand how to manage this tension. The broader the community participation, the more widely knowledge will be spread. Decision-making performance is enhanced when the right people with the right backgrounds, knowledge, and experience come together at the right time.

**COHESIVE.** Despite the inherent challenges of assembling groups of people with divergent perspectives and expectations, communities must ultimately attain a shared sense of identity if they are to drive results. “Only then will members keep coming together and investing themselves in pushing the community and its practice forward.”<sup>17</sup> Identity and belonging are often linked to a shared sense of purpose. Communities, like teams, that put time and effort into creating profiles and selecting members also find they have an easier time forming a unified, cohesive culture.

Some may be tempted to view community as one of those squishy words that rarely shows up at the top of a CEO’s agenda. But research and experience suggest that collaborative efforts without a strong basis in social cohesion and a sense of community fall short in creating value.

## The Key Benefits of Effective Knowledge Networks

The benefits that firms realize from collaborative investments depend largely on the organizational foundation currently in place. Those firms whose cultures are already strategically aligned and steeped in trusting relationships are likely to realize significant returns. Their investments may also be less intensive, as they are able to focus on less critical issues, such as the collaborative technologies they need to employ. Companies that do not possess these organizational attributes may find that their investments are better directed by creating the strategic and cultural foundation necessary for success. Either way, many firms find they are better off starting with small steps. Focusing on key business processes that are closely linked to strategic imperatives may offer better returns – at least at the outset – than attempting all-encompassing, enterprise-wide initiatives.

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Following are key benefits of collaborative networks:

**ACCELERATED KNOWLEDGE TRANSFER.** CKNs are effective tools for creating, sharing, and applying organizational knowledge. They help companies leverage knowledge assets more effectively and enable participants to locate and communicate with experts more quickly.

**AGILITY AND PRODUCTIVITY.** Workers with easier access to relevant knowledge perform more productively. They spend less time looking for information – and more time focused on applying it. They make better decisions more quickly.

**CREATIVITY.** Innovative outcomes are enhanced when enthusiastic, self-motivated, diverse sets of people are brought together to achieve a common goal.

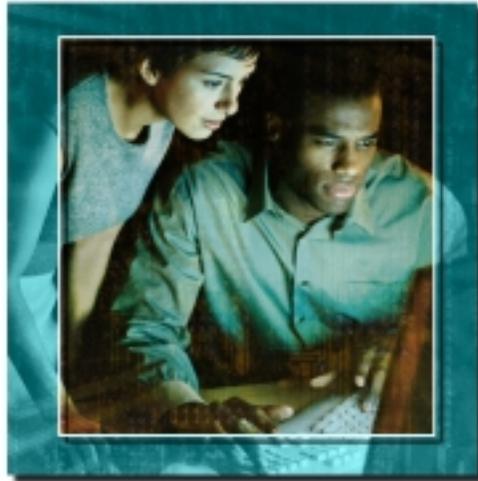
**ASSET OPTIMIZATION.** Many firms encourage virtual collaboration to cut costs. Collaborative networks clearly help firms to minimize the costs associated with finding, organizing, and leveraging knowledge. And they help employees to do their jobs more responsively and effectively. But to reap significant rewards, firms must be prepared to invest first in their people – and second in the technology they employ to perform.

To achieve these benefits, companies cannot simply push new technologies to their employees' desktops and expect them to collaborate with wild creativity and innovation. It's not that easy. To begin, employees must want to share their knowledge. Explicit permission to participate may be necessary. Job descriptions may need to be redefined. And performance metrics and reward systems often need to be redesigned. Because of this complexity, some companies find that wholesale, enterprise-wide collaboration initiatives are not practical. Taking smaller steps and focusing on those key business functions most closely linked to the firm's core value proposition may be a more productive way to proceed.

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Finally, the benefits of effective collaboration spill throughout organizations and are often hard to attribute to specific functions, processes, and initiatives. As a result, new metrics for evaluating performance in this virtual workplace are required.

While many companies are achieving positive returns on their investments in collaborative technologies and community sponsorship, it would be a mistake to pursue CKN initiatives with only a cost-cutting goal in mind. Investments that enable collaborative practices to prosper are those that help employees to work more effectively – and they are long-term in nature.



## What Can Leaders Do to Create a Collaborative, High-Performance Organization?

Traditional organizational models are not conducive to collaborative networks as defined here. As Jack Welch has predicted, “People within the company are going to have so much data on their hands that they will be able to challenge [a CEO’s] decisions all the time. The pace of events is going to be so fast that people aren’t going to wait for the next layer of approvals. There’s going to have to be far more delegation. There’s going to have to be far more participation. The leader must become an ever more engaging coach, an ever more engaging person.”<sup>19</sup>

The characteristics of organizations in which collaborative networks thrive include the following:

**A STRONG VISION**, backed by a leadership orientation toward guiding, selling, and encouraging, rather than commanding and controlling... and the patience to wait for communities to evolve within and between the company and its key customers, suppliers and partners.

*Strong leadership vision and communication strategies are critical to the formation of effective communities. A recent study revealed that 84 percent of employees in high-growth organizations understood the mandate and direction of the company. Seventy-two percent felt that their work and rewards were directly tied to that mission. But only 52 percent of employees in slow-growth companies understood their firm’s strategic direction and felt that their efforts were directly tied to its mission.<sup>21</sup>*

**ENTREPRENEURIAL DRIVE AND EMPOWERED EMPLOYEES** with an intrinsic desire to create, solve, learn, and grow. Hiring profiles can be used to screen intellectually curious, goal-driven employees. Creating loose job descriptions that focus on results, rather than tasks or processes, will encourage existing employees to take strategic risks and assume greater responsibility. Finally, creating the conditions in which employees can participate in community-driven networks allows them opportunities to excel within and beyond the confines of their normal roles.

**A STRONG CULTURAL IDENTITY**, where the organization reflects its values in all aspects of its brand, recruiting practices, goals, and corporate identity. Employees who possess a strong sense of organizational identity tend to operate with a clearer sense of mission than those who do not.

**CONSTRUCTIVE CONFLICT**, as long as individuals are well armed with strong communication skills and employees are aligned toward common goals.

**RESULTS ORIENTATION**, where individuals are rewarded on the results they achieve rather than on tasks, or on the manner in which they accomplish their work.

**VISIBLE TRUST**. The condition of trust must operate in three ways. First, leaders must trust that employees’ efforts are directed in the best interests of the firm. This is most likely to happen when people share a strong sense of organizational identity and are steeped in the strategic objectives of the firm. Second, employees must trust that their efforts will be reciprocated by peers, and supported and rewarded from above. And third, trust must be nurtured between organizations, not just within them. “It’s not about trusting a person, but the whole operation, the integrity of the process.”<sup>22</sup>

**CONTINUOUS LEARNING ENVIRONMENTS**. Firms that invest in the development of their people – in their communication and technological skills – are likely to achieve greater results through their investments in collaborative technologies than those that do not.

Communities of practice cannot be implemented, mandated or controlled. But there are a number of specific and important actions leaders can pursue to increase the likelihood of constructive, profitable collaboration.

## 1. PROVIDE THE NECESSARY INFRASTRUCTURE

High-performing CKNs depend on high-performing technologies – and companies must consider how their technology decisions and investments enhance collaborative practices. For knowledge networks to function effectively, companies must build electronic spaces and empower people with collaboration tools. It is often necessary to achieve integration across multiple platforms, multiple systems, and multiple applications. They must ensure that interactions occur with minimal or no cost – in terms of additional effort – to the user. Technologies that hinder rather than enhance a user's productivity will not be adopted.

Factors to consider as firms implement collaborative technologies are the following:

**HARMONIZATION.** In many firms today, individual business units and departments can easily deploy basic web-based technologies. Without top-down coordination, this may result in decentralized, fragmented, and hard-to-navigate pools of information. Harmonization is about integrating systems and standardizing online services to improve the user experience and optimize Web-based technology investments. By standardizing online services, we mean that firms employ common technology, taxonomy and interface design to allow participants to easily collaborate throughout remote parts of the organization. Employees and strategic partners – regardless of their language, location, role, or relationship to the enterprise – should encounter a unified experience. This consistency is important, even if the specific information to which individuals are allowed access differs based on their user profiles.

Companies must determine how much content control to retain and how much freedom to allow – especially when communities expand to include workers in other companies, customers, suppliers and other stakeholders. But, harmonizing web servers helps firms to adhere to common standards while driving a consistent user

experience and unified corporate brand. Perhaps even more significant in today's economic climate, harmonization saves money by helping firms to minimize redundant investments in hardware, software and content development; better leverage support services; permit unified security approaches; and mitigate connectivity problems.

*By creating single operating environment for all users, Chevron has saved roughly \$50 million in system management costs alone.*

**PERSONALIZATION.** CKN participants should be able to set preferences and personalize content. Providing employees the tools to continually refine their preferences frees them from having to wade through waves of irrelevant information. Seeking their input in the design and functionality of tools and content will help to optimize their productivity.

**GLOBAL TRANSPARENCY.** Encouraging people to network throughout the organization requires that they become aware of one another. The profiles of existing and potential community members should be transparent throughout the enterprise – across functions, processes, and initiatives. Making profiles easily accessible requires that people employ a common vocabulary across the organization, and that this vocabulary is reflected in people's biographies. It is only in this way that search terms, or key words, will help to locate relevant skill sets and talent.

**INTERACTIVE PARTICIPATION.** Networking technologies must provide users with interaction and communication channels, such as chat, forums, and versioning of communications. This may require different kinds of technologies for different kinds of communities. Collaborative product development, for example, may call for specialized software that allows users to simultaneously communicate while viewing and modifying virtual prototypes.

Managers must strike a balance among these potentially conflicting dimensions so that the flow of knowledge is accelerated rather than diminished. Mandating a common platform may be cost effective, for example, but can also hinder collaboration if user needs and buy-in are not anticipated during planning and design.



## *Harmonizing systems at* CHEVRON

Chevron CEO Dave O'Reilly has picked up where former CEO Kenneth Derr left off as an avid proponent of organizational learning and knowledge through the transfer of best practices. According to Derr, "Of all the initiatives we [undertook] at Chevron during the 1990s, few have been as important or as rewarding as our efforts to build a learning organization by sharing and managing knowledge throughout our company." Communities of practice have long been provided funding at Chevron for formal, as well as casual, meetings to promote knowledge exchange. In 1998, Chevron's collaborative network moved to a single, harmonized system, allowing for more responsive interactivity than previously achieved through an amalgam of Lotus Notes, e-mail, and groupware. Under the Global Information Link (GIL) initiative, every PC in the company was replaced with a common machine, software, and connective system. Over 30,000 computers worldwide share full networking capabilities, advanced e-mail, scheduling, and presentation tools, creating a single operating environment for all users. Jeff Stemke, who leads Knowledge Management efforts at Chevron, estimates that the company has saved \$50 million per year in system management costs alone. But the economic benefits don't stop there. He estimates that Chevron has also reduced operating expenses by over \$2.5 billion per year, due in part to energy savings and a 10-15 percent increase in capital efficiency, and has reduced drilling time by between 10 and 40 percent – at a savings of \$250 million per day.<sup>23</sup>

## Different Tools for Different Users

Another useful way to evaluate collaborative technology needs is to consider the target user groups. The level of technology required by an individual or group should be determined by the degree to which it impacts the strategic objectives or value proposition of the organization. Questions for firms to consider as they evaluate the potential impact of each include the following: What form and degree of technology is required to compress cycle times? What systems must be integrated before meaningful collaboration can occur? What level of technological investment is necessary to create a more efficient and effective workflow among customers, suppliers, and key alliances? Does the nature of these relationships tend to be complex or relatively simple? How complex are the products and services of the company or business unit in question?

*The level of collaborative technology required by an individual or group should be determined by the degree to which they impact the strategic objectives and value proposition of the organization.*

- **Individual** technologies such as instant messaging, Web-based video, and data conferencing help optimize the performance of employees whose roles directly impact the business imperatives or value proposition of the firm.
- **Group** technologies connect project participants internal and external to the organization. Digital workplaces, for example, can be employed for project collaboration, task management, polling, and online discussions. As a virtual storage and meeting device, digital workplaces serve as a single point of entry for participants to access and manage documents, share calendars and project plans, and track tasks and issues.

■ **Enterprise technologies** help firms to share information and build relationships with key stakeholders - employees, customers, suppliers, strategic partners, and investors - or even the public at large, depending on the level at which they operate. Because enterprise technologies may invite participants to surf through reams of information, they must offer users the opportunity to effectively manage documents, as well as to search and filter information. Also, because enterprise technologies have wide reach, it is important that they operate with a distinctive voice that is reflective of the overall culture and strategic mission of the organization.

*Company intranets* help align employees and key partners with strategic objectives by communicating things such as firmwide initiatives, recent alliances, and significant wins and sales. Add-ons such as eMail, project Web sites, Web conferencing, online chat and instantaneous messaging link participants and facilitate synchronous as well as asynchronous collaboration.

*Enterprise information portals*, of which intranets are a component, extend capabilities across the entire enterprise and may be expanded to provide company information, marketing materials, and customer tools such as product configurators. They offer harmonized, and personalized Web access to designated participants inside and outside of the enterprise.

*Private exchanges* further fuel productivity by facilitating collaboration and knowledge exchange with suppliers, customers and strategic alliances – making possible the co-design of products, for example, in addition to commercial services such as online auctions.

Technology and information sources alone, however, will not enable the collaborative practices necessary for high-performing knowledge networks. Cultivating successful collaborative knowledge networks is not a matter of “build it and they will come.” Companies that simply load the desktops of employees with millions of dollars worth of equipment and databases will almost certainly not make them more productive.

“One of the great myths of the Information Age is the idea that technology will create collaboration. For years, the IT people have rolled out technology thinking that communities will cluster around it,” says Brook Manville, chief learning officer at Saba. “Unfortunately, it’s not that easy.”

*Technology and information sources alone will not enable the collaborative practices necessary for high-performing knowledge networks.*

## 2. SPONSOR, SUPPORT, AND NURTURE

You can be sure that virtual communities are already operating within your company. Some may be well known to company leaders; others may be flying below the radar – coming and going based on employees’ needs and their ability to participate. In either case, the benefits your company gets from its virtual communities can be significantly enhanced by your attention and interest. In particular, management must focus on supporting those critical processes that are most likely to add value.

One of the most important, yet easiest, things companies can do to support the evolution of collaborative networks is to ask participants if they need help or support. This may simply involve letting employees know their participation is valued – and asking if there are barriers that the company can help eliminate.

But when it comes to actually getting management involved in communities of practice, take care. Be sure to encourage rather than mandate. An overly intrusive manager can squelch participation in a heartbeat. "Virtually everyone who has studied them agrees that [communities of practice] cannot be created out of the blue by management fiat; they form of their own accord whether management tries to encourage them or hinder them."<sup>25</sup> It is very easy to destroy communities of practice by meddling.

### 3. LEARN HOW TO CAPTURE TACIT KNOWLEDGE

Most organizational knowledge does not reside in a firm's databases or in the manuals and papers adorning the desks and shelves of employees. Instead, the vast majority of what makes every company tick resides in the heads of its workforce.

It is often estimated that 70 percent of organizational knowledge is tacit. Tacit knowledge is subjective, highly personal, and "deeply rooted in action and an individual's commitment to a specific context. It is hard to express in words, sentences, and numbers."<sup>27</sup> "Tacit knowledge includes the intuition, perspectives, beliefs, and values that people form as a result of their experiences."<sup>28</sup> In a nutshell, tacit knowledge forms the why and how an organization does what it does in a certain way. It shapes the experience of customers and their perceptions of the value of a firm's goods and services.

Explicit knowledge, on the other hand, is objective. It is easily expressed in words, sentences, and numbers. Explicit knowledge is buried away within an organization's networks and its manuals. And is communicated to the external world through its Web sites.

Many firms have long understood the need to capture and synthesize explicit and tacit knowledge. Whereas search-and-find mechanisms can help to surface the former from digital sources, the latter often seems impossible to capture. How do firms successfully capture tacit knowledge and transform it in meaningful, actionable ways?



### *The shortfalls of* INFORMATION CAPTURE

A large consumer products company recognized the need to improve the caliber of its professionals' work. "Professionals were instructed to document their key work processes in an electronic database. It was a hated task. Most felt their work was too varied to capture in a set of procedures. After much berating by their senior managers... they completed the task. Within a year, the database was populated, but little used. Most people found it too general and generic. The help they needed to improve their work processes and share learning was not contained in it. The result was an expensive and useless information junkyard."<sup>26</sup>



### *The power behind stories at XEROX PARC*

In the late 1980s, anthropologist Julian Orr initiated work on a seminal study revealing the critical role that tacit knowledge plays within organizations – as well as the many shortfalls in documenting, educating, and managing around such knowledge.

At the Xerox Palo Alto Research Center (PARC), Orr studied the work of Xerox technical representatives as they went about repairing and servicing copiers at customers' sites. To prepare its reps, Xerox provided training courses as well as documentation to help them learn and do their jobs. What Orr learned, however, was surprising. "Tasks were [rarely] straightforward, and machines, despite their elegant circuit diagrams and diagnostic procedures, exhibited quite incoherent behaviors. Consequently, the information and training provided to the reps was inadequate for all but the most routine of the tasks they faced."<sup>29</sup> Documentation provided plenty of information about *what* to do – but not *why*. Without such explanation, or context, reps were often left to trial-and-error their way through repairs – at great cost to the company. In general, the way that work actually occurs is vastly different than the way it tends to be thinly described in corporate manuals, training courses, and job descriptions.<sup>30</sup>

Reps tended to be remarkably social, often gathering for breakfast, lunch, coffee breaks, or at the end of the day. Many managers might be tempted to write off such frequent chat as a waste of time. But, rather than exchanging idle gossip, the reps talked shop – asking questions, raising challenges, and offering solutions – and in the process, transferring critical knowledge about what they had learned.

A critical form of collaboration – storytelling – was revealed in the informal gathering of the technical reps. In relating the experience of one rep challenged with a particularly problematic machine, Orr explains the way that he and a specialist resolved the problem by swapping stories over the course of a long afternoon. By exchanging their knowledge in the form of stories, the reps helped each other to repair the machine – like "a series of alternating, improvisational jazz solos, as each took over the lead, ran with it for a little while, then handed it off to its partner, all against the baseline continuo of the rumbling machine until finally all came together."

Many organizations such as Xerox, Nippon Roche, and the World Bank, find that stories are the most powerful way of communicating tacit knowledge. Efforts to communicate complex ideas and systems through charts and reports, on the other hand, often create great confusion and misunderstanding. Stephen Denning, program director of knowledge management at the World Bank, finds that "stories work because they are efficient 'carriers' of high-impact tacit knowledge. They contain huge amounts of knowledge in tiny carriers. They are able to show the interconnections and the ultimate results."<sup>31</sup>

#### 4. REWARD AND ENCOURAGE PARTICIPATION

In general, people come together because they share interests, issues, and a desire to learn. But they may not naturally share their knowledge. Sometimes coaching, encouragement, and incentives may be required to get participants to share what they know and to absorb what others may have to offer. This may be especially true in organizations with strong histories of command-and-control cultures.

Yet even in companies with traditions of collaboration and innovation, explicit tolerance around participation in knowledge networks is important. Clear provisions that allow slack time for brainstorming and networking may be in order. Job descriptions should be revisited to ensure that collaborating is explicitly included as an important work requirement.

Since 1956, for example, scientists at 3M have been encouraged to dedicate 15 percent of their time to experimenting and inventing in an area of their choice. "No one is told what products to work on, just how much to work. This loosening of controls has led to a stream of profitable innovations. 3M's sales and earnings have increased more than 40-fold since instituting the 15 percent rule. The mechanism has helped generate cumulative stock returns 36 percent in excess of the market and has earned the company a frequent ranking in the top 10 of Fortune's most-admired list... By giving up control and decreasing predictability, you increase the probability of attaining extraordinary results."<sup>32</sup>

In sum, employees must truly believe that company leaders have the interests of the rank and file at heart – and that risk-takers will be rewarded, not penalized. Companies cannot ask people to start operating in a different way if their incentive system does not reward those efforts.

#### 5. HELP EMPLOYEES BECOME EFFECTIVE COLLABORATORS

Some people are natural collaborators; others need more coaching. Training and coaching around virtual communities should focus on those skills that drive effective collaboration. It should also underscore and reinforce the importance of interpersonal communications: Successful collaboration is fundamentally dependent on successful relationships, as well as a common mission and language.

Without a common understanding – and a shared vocabulary – it can be difficult for employees to construct the connections necessary to create and foster collaboration.

At Xerox, employees must participate in the company's Leadership Through Quality training program. "A primary objective of the program is to develop sensitivity to the group dynamics issues that may limit productivity. Employees learn interaction and facilitation skills, but, more importantly, they internalize the use of a common vocabulary that reinforces a strong sense of organizational culture... The result is a climate of social activism, in which the potential for counter-productive interaction is mitigated by following well-established organizational norms and processes."<sup>35</sup>

The ways in which participants relate to one another within virtual communities will largely determine the results they achieve. The interpersonal factors that will drive success are shaped by trust, shared norms, values, commitments, and expectations.



## *Unlocking tacit knowledge* AT NIPPON ROCHE

Nippon Roche, a pharmaceutical division of the global Swiss healthcare company Roche Group, found their sales performance soared by successfully tapping tacit knowledge. The 77-year-old firm employs over 1,600 workers in Japan. Like many healthcare companies, Nippon Roche struggled in the 1990s to overcome fierce competition, low market growth, and fundamental industry changes. Understanding that a key opportunity existed in improving the way in which the firm related to and met the needs of customers, the firm launched the aptly named Super Skill Transfer (SST) project in 1998. The SST initiative focused on leveraging and integrating knowledge that the firm's frontline medical representatives (or MRs, the force behind the firm's sales) developed with their key customers (medical doctors).

As often occurs, conventional training programs aimed at increasing sales productivity had failed to bring about acceptable results, as had attempts to communicate best practices through various forms of media and role-playing. The SST initiative, instead, focused on the key processes that drove sales. A crucial finding, for example, emerged as the firm examined the unique approaches of high-performing MRs: they generally learned by doing and by improvising to create solutions.

Under the strong sponsorship of company president Hiroaki Shigata, the firm selected 24 of its best performers to better understand the relationship between skills and performance. Over six weeks, they addressed fundamental questions around their mission and ideal roles. While articulating their knowledge,

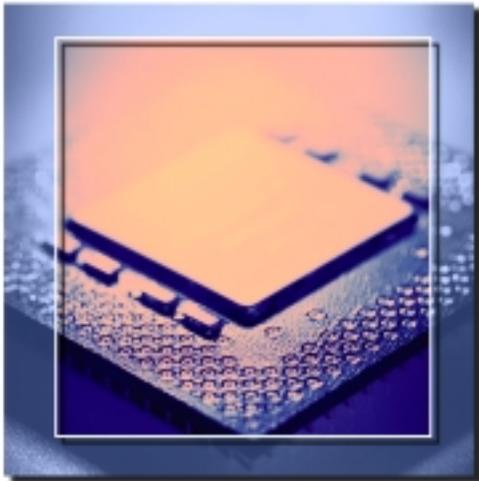
they divulged personal thoughts about their beliefs. The final product communicated – through metaphors and stories – the tacit knowledge locked within the heads of high performers.

Understanding that manuals would be inadequate to transform low performers into high performers, Nippon Roche now works to transform managers and key performers into knowledge activists who distribute learning throughout the organization. Technology supports them, of course. Nippon Roche uses satellite TV as part of an integrated platform to share both tacit and explicit knowledge throughout the organization and beyond, as the firm strives to create innovative health products and services with its key customers. By recognizing the power of tacit knowledge – capturing it, synthesizing it, and spreading it throughout the firm – the benefits of the SST project have gone beyond sales process innovation to contribute to continuous innovation throughout the organization.

## 6. BUILD TRUST

At some level, your company either has a culture grounded in trust – or it does not. If it does not, virtual communities and collaborative knowledge networks will not stand much chance. But beyond having a strong foundation in integrity and trust, companies can take specific actions to ensure that participants' efforts will be respected, reciprocated, and rewarded.

“While trust has always been an important anchor to any CEO, its value is heightened today. Employees work in flexible teams with fewer guidelines than they once had; companies are more dependent on outsourcing and partnerships, and virtual organizations are becoming increasingly the norm; executing deals requires a high level of cooperation among employees resident in different countries, and every great company is in a continuous state of organizational change. The ethos of trust – between leaders and their colleagues and employees and among workers themselves – is the glue that holds everything together in the new economy.”<sup>36</sup>



## 7. RESPECT THE NEED FOR FACE-TO-FACE INTERACTION

Though today's technology vendors promise that virtual meetings are as effective as those conducted in person, many experts disagree. To be most effective, participants in virtual communities need occasional opportunities to meet face to face. Face time facilitates communication, but more importantly it allows members to shape deeper knowledge and build mutual trust. There is ample evidence that collaborative efforts are less effective without some face-to-face encounters.

One recent study, for example, found that co-located teams sharing the same physical space are twice as productive as those that are merely nearby.<sup>37</sup> Other studies have found that members of distributed workgroups frequently experience misunderstandings in communication that lead to conflict.

While operating business on a global scale and in a tight economy may not be conducive to encouraging frequent face-to-face meetings, thoughtful managers will understand that personal interaction in an informal setting can significantly enhance the performance of a company's community-driven networks.

*The ethos of trust – between leaders and their colleagues and employees and among workers themselves – is the glue that holds everything together in a knowledge economy.*



## *Different approaches to creating knowledge-sharing cultures at* AMS AND WORLD BANK

**Recreating the coffee room.** Twenty years ago, Virginia-based American Management Systems (AMS) employed about 500 people to work with roughly 50 clients. Whenever someone needed to swap notes or figure out who was doing what with a particular client, they simply headed to the coffee room to network with colleagues. Today, AMS employs about 8,000 people in 55 offices around the world. Its approximately 500 projects have involved as many as 700 consultants. To facilitate communication and leverage its learning across the organization, AMS set out to recreate its self-formed coffee room, but on a virtual basis. Key AMS people connect with one another through the company's Knowledge Centers in communities defined by specific interest, discipline, and expertise. Not all AMS employees are invited to participate – Knowledge Center associates must be nominated based on their interest and experience. Once in the Center, associates join with subject matter experts to share research papers, technological insights, and project management techniques, and participate in online meetings and workshops. How does AMS motivate its people to spend just a little more time to share knowledge with one another – when they are already working 10- to 12-hour days? From the beginning, AMS has fostered an environment that encourages people to seek help. Performance and incentive structures are tied to how well key people contribute and leverage knowledge. By recognizing individual achievement and celebrating successes, AMS bolsters a culture in which sharing has long been the key measure of success.<sup>33</sup>

**Restructuring to become a knowledge institution.** The World Bank lends between \$15 and \$20 billion a year to nearly 80 developing nations, reaping approximately \$1 billion in profits. It is also one of the top knowledge organizations worldwide, with more than 100 active communities of practice. Knowledge sharing is a key factor in each employee's performance evaluation. Managers are evaluated on their ability to create an environment conducive to sharing, experts are expected to contribute knowledge to their respective groups, and

all employees are asked to leverage the Bank's knowledge resources in their daily work. The Bank's heavily publicized initiative to capture and share information among internal staff, clients, partners, and stakeholders around the world has led it to be popularly referred to as "the Knowledge Bank."

When President James Wolfensohn announced his vision for the bank at an annual meeting of finance ministers in October 1996, several knowledge management pilot efforts were already underway in areas such as education and private sector infrastructure. Although successful, these initial forays into knowledge management lacked the top-down support necessary to ensure their success. There was little agreement on a knowledge strategy, no dedicated budget, inadequate systems infrastructure, and no monitoring mechanisms in place to track their progress. Within months of Wolfensohn's proclamation, however, an institutional task force translated his vision into a comprehensive action plan, which provided a detailed road map to transform the organization. Among the resistance points identified early in implementation were shifting the culture toward sharing, setting and implementing quality standards, avoiding knowledge junkyards, resolving confidentiality issues, and achieving an integrated approach across the organization.

At the heart of the bank's three-tier, knowledge-enabling infrastructure lie its Sector Networks. The key operating units of the knowledge initiative, the Sector Networks link the Bank's informal communities of practice, many of which have existed for years. Whereas the communities of practice tend to form around regional expertise in a particular area, the Sector Networks connect communities across geographical boundaries. A full-time manager, who is supported by subject specialists and staff, leads each knowledge area. Through the Advisory Service of one Sector Network, for example, a staff member assisting the Nepalese Ministry of Education was connected to people in Hungary and Turkey who had rolled out similar projects. In the past, there would have been no way to facilitate this kind of sharing.<sup>34</sup>

## Challenges to Success

Not surprisingly, the greatest challenges to creating a knowledge organization have less to do with technology than they do with people. A recent study conducted by *Knowledge Management* and IDC found that the top two hurdles to effective knowledge management are time starvation and a culture that does not encourage sharing. The third greatest obstacle – a lack of understanding of knowledge management and its benefits – also presents a significant leadership and managerial challenge.

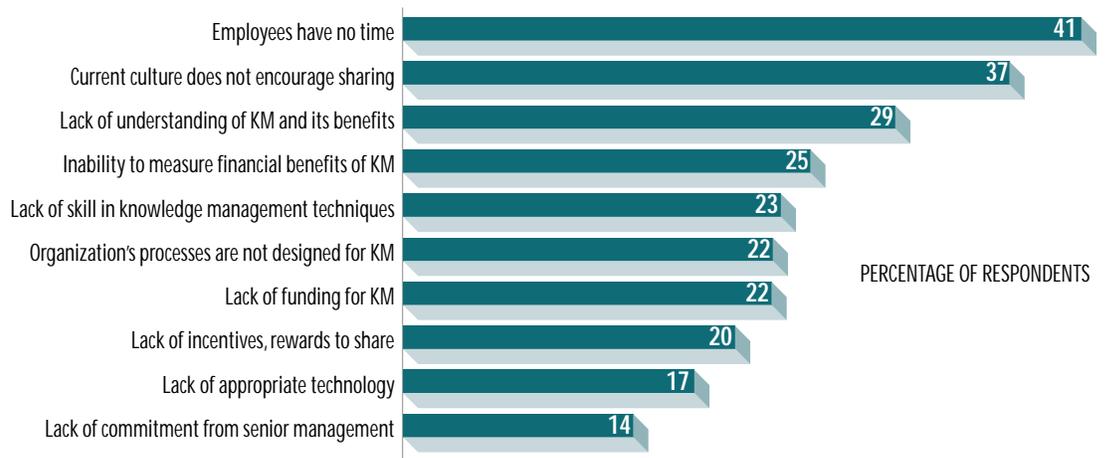
A fourth issue, not yet addressed, is that traditional metrics may not be helpful in evaluating the impact of knowledge and communities. While the ultimate measure of success, of course, lies in a company's overall performance and shareholder value, the specific measures of how CKNs deliver value are still evolving. In developing metrics, firms must consider the various processes, functions, and business objectives to which communities and knowledge-sharing efforts add value and where accountabilities lie.

So it may be a daunting task to buy into and fund CKNs when metrics, as well as returns from earlier Web investments, may not yet be clear – especially in today's economic environment. Beyond funding considerations, managers should also be aware of other challenges and barriers to success. For example, security and privacy issues will surface immediately. The risks of sharing knowledge – and viruses – throughout your company's value chain will demand careful scrutiny and effective policies.

Additionally, CKNs create the potential for divided loyalties among participants. Employees who deliver superior performance in their virtual communities may grow to feel constrained by the bounds of traditional organization structures. Managers must be flexible and focused on achieving success – and recognize and understand the barriers that may be hindering employee's efforts to deliver value.

Each of these challenges is exacerbated by the diversity of participation that occurs across effective knowledge networks. A highly functioning community brings together participants who literally speak different languages based on the national, regional, and organizational

FIGURE 4. THE PRIMARY CHALLENGES TO CREATING A KNOWLEDGE ORGANIZATION ARE NOT TECHNOLOGICAL



SOURCE: IDC AND KNOWLEDGE MANAGEMENT

perspectives they bring. Such diversity can spark innovation and creativity, but it can also present barriers. “Diversity may be essential to building the intellectual capital of a company to develop and exploit markets, but a tension exists between diversity and a unified corporate culture that enables a company to efficiently execute strategies, communicate among its component parts, differentiate itself from other companies in the same business, and not run afoul of its core ethical standards. Unless carefully managed, extensive diversity could lead to corporate chaos. Striking the right balance represents a new frontier in management.”<sup>39</sup>

Finally, building CKNs through virtual communities takes time. Managers in a hurry will not be satisfied with the time frames necessary to allow virtual communities to take shape and engage participants. Collaborative knowledge practices are likely to be successful only when viewed as part of a long-term management strategy.

*Building CKNs through virtual communities takes time. Collaborative knowledge practices are likely to be successful only when viewed as part of a long-term management strategy.*



## Future Considerations

Collaborative communities are emerging today inside many organizations. Using a host of new technologies, they are coming together to enable higher levels of individual and enterprise performance – more agility, more effectiveness, more innovation, and more productivity – than ever.

We believe that linking communities together to form collaborative knowledge networks will have even broader impacts on how companies operate in the future. According to Thomas Malone of the Massachusetts Institute of Technology Sloan School of Management, the growing trend toward technology-based communities is grounded in the basic economics of organizations. “Economists, organizational theorists, and business historians have long wrestled with the question of why businesses grow large or stay small. Their research suggests that when it is cheaper to conduct transactions internally, within the bounds of a corporation, organizations grow larger, but when it is cheaper to conduct them externally, with independent entities in the open market, organizations stay small or shrink.

“With the introduction of powerful personal computers and broad electronic networks – the coordination technologies of the twenty-first century – the economic equation changes. Because information can be shared instantly and inexpensively among many people in many locations, the value of centralized decision making and expensive bureaucracies decreases. Individuals can manage themselves, coordinating their efforts through electronic links with other independent parties. Small becomes good.”<sup>40</sup>

With this in mind, the organizational implications of CKNs are potentially far-reaching. In some companies, CKNs will not only complement traditional organizational structures, they may even replace them. In other companies, agile virtual communities may become the dominant organizational response to situations demanding rapid change and creative problem solving.

But companies who wait for the future to allow CKNs to effectively form may find themselves at a competitive disadvantage. Communities of practice are already at work in many organizations. Now is the time to create the conditions and network infrastructure they require to boost bottom line performance.

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