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deciphering the knowledge management hype by...

Yogesh Malhotra

WE ARE OBSERVING INCREASING HYPE ABOUT the wonders delivered by newest information technologies in an era characterized by knowledge as the critical resource for business activity. With the advent of new technologies, such as data mining, intranets, video conferencing, and web casting, several technology vendors are offering such solutions as panaceas for the business challenges of the knowledge era. Trade press coverage of the "productivity paradox" has further added to the speed of the information technology (IT) treadmill by suggesting that increasing investments in new information technologies should somehow result in improved business performance.

Some technology experts and academic scholars have, however, observed that there is no direct correlation between IT investments and business performance or knowledge management. For instance, Erik Brynjolfsson, a professor of information systems at MIT Sloan School, notes in *Information Week* (Sept. 9, 1996): "The same dollar spent on the same system may give a competitive advantage to one company but only expensive paperweights to another." Hence, a key factor for the higher return on the IT dollar is the effective utilization of *information* as it relates to organizational performance. How industry executives should go about deciphering the mantra of "effective utilization," however, remains an illusive issue.

This conclusion is also supported by the industry-wide analysis of IT investments by technology economist Paul Strassmann. In his book, *The Squandered Computer* (Economic Press, 1997), Strassmann concludes that there is no relationship whatsoever between computer expenditures and company performance. On a similar note, John Seely Brown, director of the Xerox Park Research Center in Palo Alto, California, underscores that in the last 20 years, U.S. industry has invested more than \$1 trillion in technology but has realized little improvement in the efficiency or effectiveness of its knowledge workers. Brown attributes this failure to organizations' ignorance of ways in which knowledge workers communicate and operate through the social processes of collaborating, sharing knowledge, and building on each others' ideas.

This disconnect between IT expenditures and the firms' organizational performance may be attributed to an economic transition from an era of competitive

Resource checklist: Books

- Davenport, Thomas H. and Laurence Prusak. **Working Knowledge: How Organizations Manage What They Know** (Harvard Business School Press, 1998)
- Koulopoulos, Thomas M., Spinello, Richard A. and Wayne Toms. **Corporate Instinct: Building a Knowing Enterprise for the 21st Century** (Van Nostrand Reinhold, 1997)
- Leonard-Barton, Dorothy. **Wellsprings of Knowledge: Building and Sustaining the Sources of Innovation** (Harvard Business School Press, 1995)
- Nonaka, Ikujiro and Hirotaka Takeuchi. **The Knowledge-Creating Company** (Oxford University Press, 1995)
- Stewart, Thomas A. **Intellectual Capital: The New Wealth of Organizations** (Currency/Doubleday, 1997)

advantage based on *information* to one based on *knowledge creation*. The earlier era was characterized by relatively slow and predictable change that could be deciphered by most formal information systems. During this period, information systems based on *programmable recipes for success* were able to deliver their promises of efficiency based on optimization for given business contexts. However, as argued by Brian

Arthur, dean of economics and population studies at Stanford University and author of *Increasing Returns and Path Dependence in the Economy* (University of Michigan Press, 1994), the new world of knowledge-based industries is distinguished by its emphasis on precognition and adaptation, in contrast to the traditional emphasis on optimization based on prediction. Arthur suggests that the new world of knowledge-based business is characterized by "re-everything" and involves a continuous redefinition of organizational goals, purposes, and an organization's "way of doing things." This new business environment is characterized by radical and discontinuous change and demands anticipatory responses from organization members who need to carry out the mandate of a faster cycle of knowledge creation and action based on this new knowledge.

IN THE INFORMATION ERA CHARACTERIZED BY relatively predictable change, technology gurus, as well

as hardware and software providers, have been offering out-of-box solutions that are expected to enable knowledge management. Such off-the-shelf solutions are expected to offer the means for storing pre-defined recipes in information databases, which may be later used for crunching out the predetermined solutions based on pre-defined parameters.

For example, a *Software Magazine* article defined knowledge management in terms of understanding the relationships of data, identifying and documenting rules for managing data, and assuring that data are accurate and maintain integrity. The convergent-and-consensus-building emphasis of such systems is suited for stable and predictable organizational environments. However, such interpretations of knowledge management—based primarily on rules and procedures embedded in technology—seem misaligned with a dynamically changing business environment.

Today's business world does not put a premium on playing by pre-defined rules but on understanding and adapting as the rules of the game—as well as the game itself—keep changing. Examples of such changing business rules, conventions, and assumptions are suggested by the emergence of virtual corporations and business ecosystems.

I have proposed a definition that moves the thinking of corporate executives toward the strategic, nonlinear, and systemic view of knowledge management. *Knowledge management caters to the critical issues of organizational adaption, survival, and competence in face of increasingly discontinuous environmental change. Essentially, it embodies organizational processes that seek synergistic combination of data and information-processing capacity of information technologies, and the creative and innovative capacity of human beings.*

THE TRADITIONAL PARADIGM OF INFORMATION systems is based on seeking a consensual interpretation of information based on socially dictated norms or the mandate of company bosses. This has resulted in the confusion between *knowledge* and *information*. Knowledge and information, however, are distinct entities. While information generated by computer systems is not a very rich carrier of human interpretation for potential action, knowledge resides in the user's subjective

Resource checklist: Periodicals

- **Fortune: Knowledge management** column by Tom Stewart
- **CIO: Knowledge management** column by Tom Davenport
- **Wall Street Journal: Friday Front Lines** column by Tom Petzinger
- **Journal of Business Strategy**, January-February 1998 v. 19 (Special Focus)
- **Long Range Planning: Special Issue on Intellectual Capital**, June 1997
- **Forbes ASAP: Special Issue on Intellectual Capital**, April 7, 1997
- **KM Inc.** newsletter (Quantum Era Enterprises)

context of action based on that information. Hence, it may not be incorrect to suggest that knowledge resides in the user and not in the collection of information, a point made two decades ago by West Churchman, the leading information systems philosopher.

Karl Erik

Sveiby, the author of *The New Organizational Wealth: Managing and Measuring Knowledge-Based Assets* (Berrett-Koehler, 1997), contends that the confusion between knowledge and information has caused managers to sink billions of dollars in information technology ventures that have yielded marginal results. Sveiby asserts that business managers need to realize that unlike information, knowledge is embedded in people, and knowledge creation occurs in the process of social interaction. On a similar note, Ikujiro Nonaka, the first Xerox distinguished professor of knowledge at University of California Berkely, has emphasized that only human beings can take the central role in knowledge creation. Nonaka argues that computers are merely tools, however great their information-processing capabilities may be.

The new world of business imposes the need for variety and complexity of interpretations of information outputs generated by computer systems. Such variety is necessary for deciphering the multiple worldviews of the uncertain and unpredictable future. As underscored by strategy guru Gary Hamel, at the August 1997 Academy of Management meeting address, nonlinear change imposes upon organizations the need for devising non-linear strategies. Such strategies cannot be predicted based on a static picture of information residing in the company's databases. Rather, such strategies

• **View the organization as a human community capable of providing diverse meanings to information outputs generated by the technological systems**, instead of the traditional emphasis on command and control.

• **De-emphasize the adherence to the “way things have always been done,”** so that such prevailing practices may be continuously assessed from multiple perspectives for their alignment with the dynamically changing external environment.

• **Invest in multiple and diverse interpretations to enable a constructive conflict mode of inquiry** and, thus, lessen oversimplification of issues or premature decision closure. The multiple and diverse interpretations of information based on different subjective views would facilitate surfacing of assumptions underlying current best practices and thus ensure that such practices are continuously renewed to align with the dynamically changing reality of business.

• **Encourage a greater proactive involvement of human imagination and creativity** to facilitate greater internal diversity to match the variety and complexity of the wicked environment.

• **Give more explicit recognition to tacit knowledge and related human aspects**, such as ideals, values, or emotions, for developing a richer conceptualization of knowledge management.

• **Implement new, flexible technologies and systems that support and enable communities of practice:** informal and semi-informal networks of internal employees and external individuals based on shared concerns and interests.

• **Make the organizational information base accessible to organization members who are closer to the action**, while simultaneously ensuring that they have the skills and authority to execute decisive responses to changing conditions.

will depend upon developing interpretive flexibility by understanding multiple views of the future. In this perspective, the objective of business strategy is not to indulge in long-term planning of the future. Rather, the emphasis is on understanding the various future world views—using techniques, such as scenario-planning. A similar process of strategic planning was pioneered by Arie de Geus, the strategy chief of the multinational Royal Dutch/Shell, as chronicled in his book, *The Living Company* (Harvard Business School Press, 1997).

BROOK MANVILLE, DIRECTOR OF KNOWLEDGE management at the consulting firm McKinsey & Company in Boston, views the implementation of these issues in terms of the shift from the traditional emphasis on transaction processing, integrated logistics, and work flows to systems that support competencies for communication building, people networks, and on-the-job learning. Manville distinguishes between the three *architectures* needed for enabling such competencies:

• a new *information* architecture that includes new languages, categories, and metaphors for identifying and accounting for skills and competencies.

• a new *technical* architecture that is more social, transparent, open, flexible, and respectful of the individual users.

• a new *application* architecture oriented toward problem-solving and representation, rather than output and transactions.

On a similar note, Bob Hiebeler, Arthur Andersen's managing director of KnowledgeSpace intranet (profiled in the May 15, 1998 *CIO* magazine), observed at a recent panel discussion of knowledge management experts: “To me, this is the essence of knowledge sharing. It's all about contribution, it's all about the respect for others' opinions and views, it's all about a good facilitation and synthesis process, it's all about the distribution of lessons learned from this knowledge process, and it's all about access to packaged knowledge and key insights that become the starting points for individual learning.”

Managers need to develop a greater appreciation for their intangible human assets, captive in the minds and experiences of their knowledge workers. Without these assets, companies are simply not equipped with a vision to foresee or to imagine the future.

As noted by Paul Strassmann, elevating computerization to the level of a magic bullet may diminish what matters the most in any enterprise: educated, committed, and imaginative individuals working for organizations that place a greater emphasis on people than on technologies.

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Yogesh Malhotra, Ph.D. is the founder and principal of @BRINT, the award-winning virtual knowledge enterprise and the Knowledge Management Think Tank on-line forum. His Ph.D. research at the University of Pittsburgh Katz School of Business focused on developing advanced understanding of information systems and knowledge management issues. Malhotra may be contacted at malhotra@brint.com or web site www.brint.com