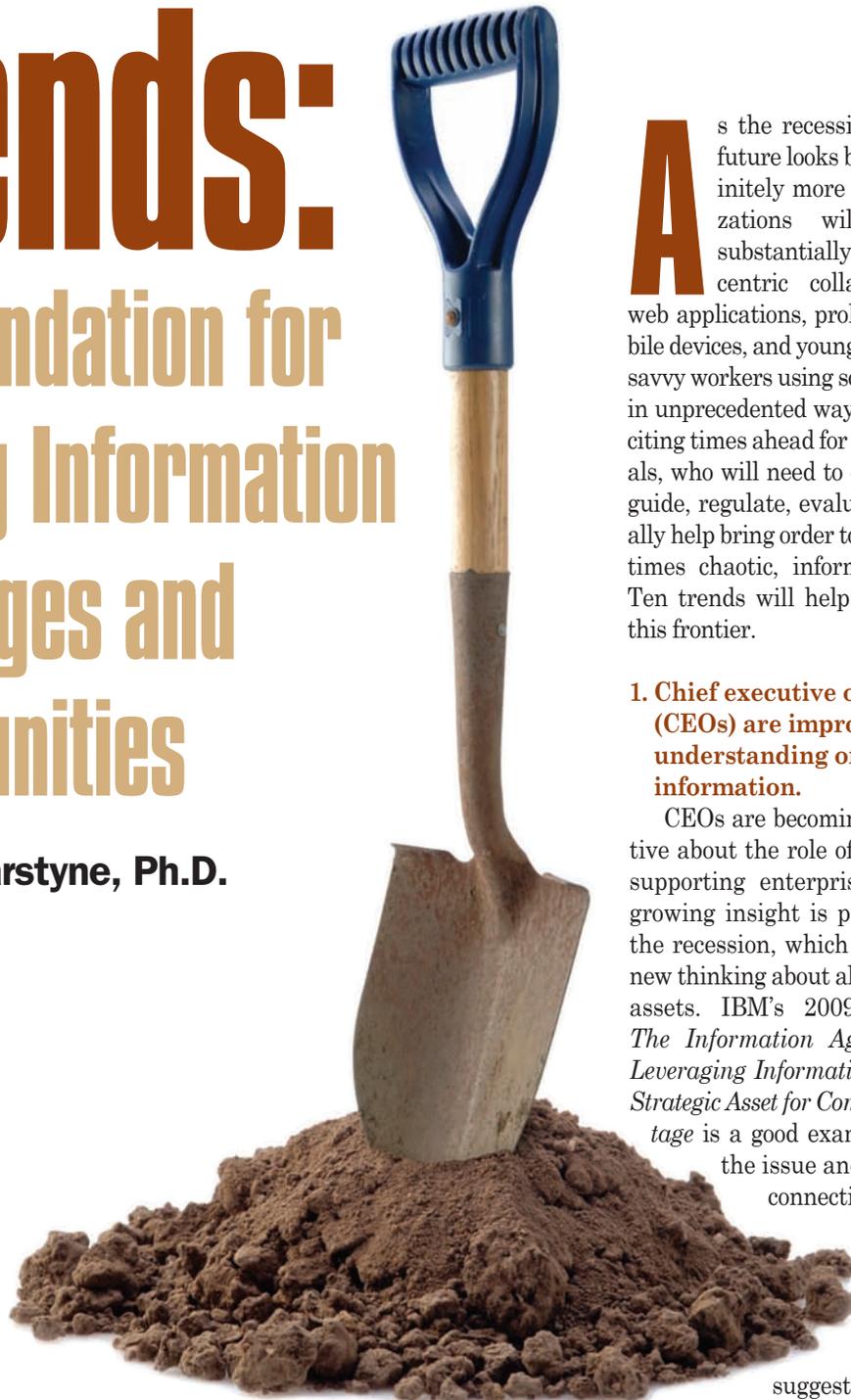# Groundbreaking Trends:

## The Foundation for Meeting Information Challenges and Opportunities

**Bruce W. Dearstyne, Ph.D.**

**A**s the recession recedes, the future looks brighter and definitely more digital. Organizations will be altered substantially by information-centric collaboration, new web applications, proliferation of mobile devices, and younger, information-savvy workers using social networking in unprecedented ways. There are exciting times ahead for RIM professionals, who will need to educate, advise, guide, regulate, evaluate, and generally help bring order to the new, sometimes chaotic, information frontier. Ten trends will help them cultivate this frontier.

### 1. Chief executive officers (CEOs) are improving their understanding of the role of information.

CEOs are becoming more perceptive about the role of information in supporting enterprise work. Their growing insight is partly driven by the recession, which has occasioned new thinking about all organizational assets. IBM's 2009 white paper *The Information Agenda: Rapidly Leveraging Information as a Trusted Strategic Asset for Competitive Advantage* is a good example of framing the issue anew for CEOs by connecting information to worker productivity and competitive advantage.

The white paper suggests an enterprise-

**Wringing more meaning from statistical data and other information is an exciting, emerging trend with deep implications for information professionals.**

wide approach is needed to organize a company's information into "a trusted strategic asset that can be rapidly leveraged across applications, processes, and decisions." The first step is an information strategy that contains "principles which will guide the organization's efforts to create and exploit trusted information," driven by the organization's business strategy and operating framework. *The Information Agenda* notes that these principles might include:

■ Information should be efficiently provided as a shared service to all parts of the business by experts working in information-critical functions.

■ Information should have one standard definition and presentation, unless compelling business differences dictate otherwise.

■ Data quality and compliance with standards should be built in at the source, with minimum intervention in the flow to the user.

■ Information is a corporate asset. It should be freely shared with the business unless cost, legal, or commercial sensitivity prevent it.

IBM also recommends careful attention to *information definition and governance* (e.g., where is it stored, how is accuracy verified, what is its actual value, and "What information do you retire and when do you do it?"), and to the *infrastructure,* or the systems needed to store and manage information. The work of IBM, other IT companies, top consulting firms, and business schools and journals will continue to sharpen CEOs' under-

standing of the value of information and how to put it to work.

### 2. Chief information officers' (CIO) work is being redefined.

CIOs will re-conceptualize their function and, in effect, reinvent themselves as challenges, needs, and opportunities come along. They need to be versatile, proactive, strategic, and determined to lead. CIOs will need to step beyond IT to what Forrester Research's George F. Colony calls "BT" or "business technology." In a September 2009 online article from Forrester, "From Information Technology to Business Technology," Colony advocates "measuring your usage of technology with business metrics instead of technology metrics … think about technology as a whole and what it means to their business results rather than … technically oriented goals and metrics like storage system availability or network and router performance."

Colony also says to let the CEOs and the boards of directors know, "We're not in the technology business anymore; we're in the real business – the company's business."

CIOs and other information professionals will need to consider how their work aligns with, and contributes to, enterprise priorities; find ways to get the story out about the strategic importance of their work; and develop convincing measures that executives can understand.

### 3. Co-creation of products and services is increasing.

This trend uses information tech-

nology to connect with and harness collective intelligence. "… Most of the smartest people work for someone else," observes Jeff Howe in *Crowdsourcing,* presenting the need to build conduits to connect with them.

People like collaborating when they have a deep commitment to the company, product, service, or to the collaborating community itself. New collaborative tools, such as wikis, make it easier than ever before. Employees will step up internal collaboration and firms cooperating on joint ventures or projects, and collaborating across international boundaries will become more commonplace with globalization.

But more intriguing are examples cited by Howe and others, like Wikipedia (is maintained by volunteers); Amazon (invites and posts online reviews and ratings); TopCoder (develops software online in a competitive environment); Proctor and Gamble (engages customers in creating new products); InnoCentive (recruits professionals to solve tough research problems); IBM's Innovation Jam (invites employees, customers, suppliers, and others to identify future opportunities); Dell's IdeaStorm (asks the crowd to suggest new ideas), Digg (allows users to submit news articles, blog posts, or other links and to "vote" on them, and then it features the most popular on its front page); and blogs on newspaper and other media sites where citizens share news and views. All of these applications are information-intense.

### 4. The use of Enterprise 2.0 applications is broadening.

Enterprise 2.0 is the internal application of the concepts and technologies noted above in No. 3 to boost productivity and competitiveness. The 2009 Enterprise 2.0 Conference's white paper, *Enterprise 2.0: What, Why, and How,* described it as a blend of Web 2.0 technologies, such as blogs and wikis, plus "socialization of busi-

ness applications" that involve more robust collaboration and more intense, imaginative use of data, plus a culture that encourages communication, information sharing, team approaches, and agility.

CEOs have been slow to embrace Enterprise 2.0, in part because it loosens management oversight and control over employees. But in a July/August 2009 *Chief Executive* article, "Welcome to a Web 2.0 World,"



Soumitra Dutta and Mathew Fraser observe that the recession has caused CEOs to rethink collaborative approaches, recognize the benefits of social media tools, and realize this "is not just a technological phenomenon, but represents a fundamental shift in values and perception that can enhance value."

These tools, Dutta and Fraser write, "can help CEOs to influence action by coming into more direct contact with employees, customers, and other stakeholders … [and] being fully engaged in informal conversations and open to new ideas from employees and customers."

Enterprise 2.0 opens vast possibilities for more creative use of information. There are multiple potential implications for information professionals:

- Educating the organization's employees about information custodial responsibilities
- Creating systems for managing the unstructured and constantly changing information inevitably created in Enterprise 2.0 applications
- Controlling access and protecting the security and integrity of information
- Developing policies to deal with legal implications

### 5. Analytics are being used to extract more meaning and use from information.

Wringing more meaning from statistical data and other information is an exciting, emerging trend with deep implications for information professionals. Thomas Davenport and

## Looking into the Future

Following are some useful sources for gaining insight into the future evolution of businesses and other institutions:

- Beinhocker, Erin, et al. "The Ten Trends You Have to Watch," *Harvard Business Review 87* (July/August 2009), 55-60.

- Colony, George F. "The Counterintuitive CEO" blog. Available at *http://blogs.forrester.com/colony.*

- Davenport, Tom. "The Next Big Thing" blog. Available at *http://discussionleader.hbsp.com/ davenport.*

- Economist Intelligence Unit. *The Digital Company, 2013: Freedom to Collaborate*, 2008. Available at *http://graphics.eiu.com/upload/portal/Digital_company_2013_ WP2_ WEB.pdf.*

- "I-Schools." Two dozen university programs preparing information professionals for the future, focusing on the relationship among information, people, and technology. Available at *www.ischools.org.*

- Johansen, Bob. *Leaders Make the Future: Ten New Leadership Skills for an Uncertain World.* San Francisco: Berrett-Koehler, 2009.

- Malone, Michael S. *The Future Arrived Yesterday: The Rise of the Protean Corporation and What It Means to You.* NY: Crown, 2009.

- McAfee, Andrew. "The Business Impact of IT" blog. Available at *http://andrewmcafee. org/blog.*

- Oracle. *The Business Case for Information Management.* December 2008. Available at *www.oracle.com/appserver/business-intelligence/docs/buscase-for-information-management-whitepaper.pdf.*

**Many companies are making more information available to investors, customers, and even the general public, employees have public blogs, and CEOs are leading the way with blogs of their own.**

Jeanne Harris, in *Competing on Analytics: The New Science of Winning,* describe analytics as "the extensive use of data, statistical and quantitative analysis, explanatory and predictive models, and fact-based management to drive decisions and actions."

Many leading companies, service firms, sports teams, and other organizations now build their business on the ability to identify, collect, and analyze data, and they use statistics and modeling to improve and streamline a variety of functions. *Competing on Analytics* offers several examples, such as defining supply chain flows and managing inventory; selecting new markets to enter and identifying and retaining customers with the greatest profit potential; and identifying pricing levels that will maximize sales and profits.

Significant decision support and analytics capability correlates well with high performance in consumer products, finance, retail, travel, and entertainment. CEOs see the success of "analytics competitors," such as Wal-Mart, Amazon, Harrah's, Honda, and Verizon, and conclude that analytics is at least worth exploring.

Ian Ayres, in *Super Crunchers: Why Thinking-By-Numbers Is the New Way to Be Smart,* puts it more dramatically: "We are in a historic moment of horse-versus-locomotive competition, where intuitive and experiential expertise is losing out time and time again to number crunching." Intensive exploitation of data is certain to increase as companies emerging from the recession struggle

to regain and expand market share, plan for new products and services, and look for ways to increase individual productivity.

### 6. The use of information for decision making is improving.

Significant errors in judgment and decision making by banks and investment firms helped bring on the recession, and executives are determined to do better in the future. Lack of sufficient, timely information can lead to flawed decision making based on past experience rather than facts, "emotional tagging" (clinging to the past by dismissing new data), and "cognitive dissonance" (after a tentative decision, embracing and confirming information, and disregarding disconfirming information), according to *Think Again: Good Leaders Make Bad Decisions and How to Keep It from Happening to You* by Sidney Finkelstein, et al.

Information silos, inconsistent systems, and fresh information overshadowed by older, stale information are all underlying causes. Managers will increasingly insist on timely, relevant information and decision support technologies. Accenture Consulting's 2009 white paper *Everything Elastic: Accenture Technology Vision* predicts improvement through:

- Tighter integration between the data held by major technology platforms and the intelligence needed to analyze it
- New technologies, such as mash-ups, that enable users to access and manipulate real-time data from multiple systems to meet

their needs rather than relying on "standard and usually out-of-date reports"
- More sophisticated data visualization tools
- Better business process management by "… gradually maturing [with] the promise for automating the adaptation of business processes in response to patterns detected in data"
- Vast increase in publicly available information in blogs, social networks, and content-sharing sites that can be mined

### 7. Information is being used to promote transparency and accountability.

Scandals like the Bernard Madoff Ponzi scheme and the collapse of the housing market and investment banks have combined to increase insistence on transparency and openness in business and government. Many companies are making more information available to investors, customers, and even the general public, employees have public blogs, and CEOs are leading the way with blogs of their own.

President Barack Obama issued a "Memorandum on Transparency and Open Government" on his first day in office and called for public suggestions for making the federal government more transparent, participatory, and collaborative. He appointed the first federal government chief technology officer (CTO) and a deputy CTO for open government. The White House maintains an "Open Government Blog" at *www.whitehouse. gov/open/blog* and has mounted websites, such as "*Data.gov*" and "*Recovery.gov*," to allow the public to follow policy developments and track government spending, including funds to support banks and revive the economy.

Moreover, *Transparency: How Leaders Create a Culture of Candor* by Warren Bennis, et al, explains that

"transparency" means open, easily available information, which strengthens morale and boosts productivity:

*When we speak of transparency and creating a culture of candor, we are really talking about the free flow of information within an organization and between an organization and its stake-holders, including the public. For any institution, the flow of information is akin to a central nervous system: the organization's effectiveness depends on it. An organization's capacity to compete, solve problems, innovate, meet challenges, and achieve goals … varies to the extent that information flow remains healthy … critical information gets to the right person at the right time for the right reason.*

## 8. There is a focus on mitigating information overload.

Dealing with information overload is becoming a sub-set of information management. Too much information distracts employees, interrupts work, and costs the economy nearly $600 billon each year in lost productivity and throttled innovation, according to a dramatic and often-cited 2007 report, *Information Overload: We Have Met the Enemy and He Is Us,* by Basex, a research and analysis firm.

Excessive e-mail, instant messages, Twitter "tweets," low signal-to-noise ratios, lack of systems for comparing and integrating information from various scattered sources, and the proliferation of mobile, information-generating-and-receiving devices combine to make finding the information we actually need very difficult. Mitch Joel noted in *Six Pixels of Separation: Everyone is Connected. Connect Your Business to Everyone:*

*Take a quick look at a Twitter feed. Once you start, you'll soon be following more people than you can name and if you step away for an hour, you can't effectively catch up … welcome to the era of "snackable" content. The days of reading something, tak-*

**Courts are likely to continue to include instant messages, websites, and scattered, difficult-to-manage information from emerging Web 2.0 and Enterprise 2.0 applications as "discoverable."**

*ing notes on it, passing it around, and pondering it are quickly dwindling. The more engaged you become with this content, the harder it will be to comment and to share as much as you would like. Get yourself very comfortable with the idea that you are now skimming, grazing, and perusing every*thing.

The publicity, promotional, and awareness-raising work of Basex, associations, trade publications, and others has piqued and captured executives' interest, produced articles in the *The New York Times, The Wall Street Journal*, and *The Huffington Post*, and led to establishment of an Information Overload Research Group and an Information Overload Awareness Day. This interest and concern will increase. Information managers can shape the discussion and offer reliable solutions, including establishing sensible e-mail policies, applying retention and disposition schedules to records, training employees in individual information management responsibilities, and developing criteria for evaluating the value of information.

### 9. Managing information for e-discovery and legal compliance is becoming more important.

The need to manage records and information in compliance with legal requirements and to meet the potential needs of electronic discovery is likely to intensify. The 2009 *Sixth Annual Litigation Trends Survey Report* by Fulbright & Jaworski reported that 83% of U.S. companies surveyed had new litigation commenced against them in the past year and 42% anticipate an increase in 2010. Many of these are tied to the economic slump: defrauded investors and laid-off workers may head to court, regulators will step up investigations and enforcement, and companies will take more legal action to collect money owed.

In its 2009 *Third Annual ESI Trends Report*, e-discovery firm Kroll Ontrack reported that only 46% of U.S. respondents have an "ESI discovery readiness strategy," and only 57% have a mechanism in place to preserve potentially relevant data when regulatory investigation or litigation is anticipated. Courts are likely to continue to include instant messages, websites, and scattered, difficult-to-manage information from emerging Web 2.0 and Enterprise 2.0 applications as "discoverable."

### 10. The professional information management field is being strengthened.

Our field will continue to change, in part in reaction to the developments noted above. Three emerging trends in professional education and development are worth noting:

*(1) There is more focus on leadership.* The 2009 Gartner CIO Academy: Where Leaders Learn, for instance, is framed around a "CIO Activity Cycle" that includes lead ("drive business growth with advanced technology"), anticipate, strategize, organize, deliver, and measure ("track and communicate the evidence of your success, the business value of the IT organization, [and] the business value of IT-enabled technologies … ").

*(2) The need to boost business productivity and contain/reduce costs is increasing.* Many of the newest offerings focus on holding down costs and boosting output. The 2009 Society for Information Management's *SIM Study: Business Productivity and Cost Reduction Top Concerns for IT Executives* reflected this increased emphasis on bottom-line performance. Top concerns included business alignment, cost reduction, agility and speed to market, and efficiency.

*(3) Innovation is becoming more important.* Information managers are increasingly honing their skills as innovators. "Successful CIOs are seen as Insightful Visionaries who bring innovation to the forefront," says *The New Voice of the CIO: Insights from the Global Chief Information Officer Study* released in 2009 from IBM. "They inject leading-edge technologies into products and services to foster the future growth and profitability of the enterprise. High-growth CIOs exert a wide span of organizational influence … They:

- *Push business and technology integration.* Offer solutions for colleagues' business dilemmas, even when the answer is not directly IT-related.
- *Champion innovation.* Explain how new processes and technologies can deliver more value to both internal and external customers.
- *Extend CIO influence.* Volunteer to help define the overall business vision and strategy and take on other non-technology leadership roles." **END**

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