

Information Management

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If you believe the pundits and the business theorists, we live and work in the Information Age. Our companies are populated by an intriguing new species called the „knowledge worker.“ And our organization charts are being ripped apart in the name of reengineering – an information-technology-driven phenomenon.

The rate of change in today’s business environment has pushed the need for and acceptance of technologies along at a pace that continues to accelerate. For example, based on data from a range of sources, *Fortune* estimated that:

- There are over 25 million more computers in U.S. offices today than there were a decade ago.
- The number of domestic E-mail addresses has jumped by more than 26 million since 1987, and more than 11.9 billion voice mail messages were left just last year.
- U.S. executives spend on average six weeks of every year retrieving misplaced information.¹

From high-powered workstations and object-oriented programming to high-bandwidth data communications, technologies are directly changing the speed and shape of competition and business itself. They are rewriting the rules in industry after industry, making organizations flatter and more flexible, redefining our notions about everything from R&D to communications, and in the process making possible smaller and smarter products.

At the center of this transformation is an evolving breed of information management professionals in every sector and organization. *Yet* what do we mean by the term „information management“? Is it a process? A function? A department? All three? And what distinct set of experiences, perspectives, and skills do people working in this arena really bring to their companies and clients?

A group of executives facing these very questions, representing companies based in the United States and Europe, assembled this spring for the Arthur D. Little Colloquium on Information Management. They explored and debated a host of issues with the goal of identifying some „best of the best“ practices across their fields. Representing industries as diverse as banking, chemicals, leisure, and supermarkets, these managers agreed to focus their discussions on five broad areas:

- Defining the information management role
- Moving toward a new Information Services (IS) framework
- IS and reengineering
- Developing a new breed of IS people
- IT and technology assessment

Some highlights from those discussions follow.

Defining the Information Management Plan

At the outset, colloquium participants were invited to comment on the definition of information management as the process by which an enterprise:

- Supports and enables the information needs of its core business processes
- Provides the technology, people, and management infrastructure to do so effectively and efficiently
- Anticipates and prepares for the future needs of organizations and their business processes
- Shapes those processes to take advantage of information technology
- Helps formulate business strategy by leveraging information and IT for competitive advantage

„I want a stronger statement, a more proactive role,“ observed Thomas Steck, Manager, Downstream

Information Systems Division, Exxon Company, USA., during the ensuing discussion. „I want us to talk about how we identify business opportunities. When a big business idea with a technology enabler meets a market opportunity, that’s where the money is. The question is, where do those ideas come from? How do you foster the interaction between the business people and the people who know the technology, to generate those ideas?“

„Isn’t much of this an issue of language?“ asked another participant. „You can’t just ask people, ‘What information do you need?’ Unless I have a language that allows me to talk about what’s possible with information technology, I can’t begin to speculate about business ideas. We need ways to communicate and visualize that allow the CEO and the CIO and their people to work in partnership.“

„I'd put it differently,“ interjected Richard Zakrzewski, Associate Research Officer, Northwestern Mutual Insurance Company. „We in the IT organization must talk the language of the business. We have to translate our issues and priorities into business language. Our role is to plant the seeds of what's possible, and then let the business come up with the ideas.“

Paul T. Gannon, Vice President, Information Technical Services, of Shaw's Supermarkets, agreed. „Too many of the words we associate with our jobs – support, facilitate, assist – are passive words. We need to move to active words like lead, challenge, and change.“

„We're often the victim of the terminology we use,“ added Thomas B. Collins, Director, Management Information Services Reengineering, Air Products and Chemicals, Inc. „Clearly, a computer today is a lot more than 'computing,' and IS does more than 'manage information.' We're not managing information so much as we are trying to help manage the business.“

„But sometimes we are just managing information,“ cautioned Alan Herbage, Group European Systems Director at Resort Condominiums International Europe Ltd. (RCI). „And that's not easy. The problem comes when you try to define the information a company needs. What information is it? How do we share it? Who needs it? It's not just a process of 'managing' information. It's also a process of defining it.“

Zakrzewski: „I wonder then – what is the role of IT in the business change process? Business change as opposed to just business.“

„What you're really asking is, can we still have the IS organization over here, separated from 'the rest of the business'?“ offered another executive. „Can we still be staff, or should we be line? Or do we need a whole new approach? Should we close up the IS department and start something new? Should we break the IS organization in two, with data processing and other clear 'support' roles over there, and the new line roles – the new change roles – over here?“

Collins observed: „It's hard for IS to step in and become directly accountable for some portion of the business results or the change process. I think more along the lines of a partnership. Say we come in with a new idea that can revolutionize our distribution process but it requires a radical rethink of where the warehouses are, how we process customer orders, and how we manage inventory. That means we have to get the director of distribution on board and the customer service people involved, as well as the folks in operations. You can't say that IT is suddenly responsible for distribution and customer service. It's hard to project yourself into those roles.“

Moving Toward a New IS Framework

„Now that we've gotten the business to think of us differently, we have to play a different game,“ noted Collins of Air Products and Chemicals. „At our company, IS is self-funding in the sense that we charge for our work. So the people who have succeeded and risen to the top of our organization, they are the ones who would say: 'Let's make a deal! You provide the money, I'll install a system.' That's what led to functional silos. With that mindset, you can't get a large enough consensus to throw out the whole bag and reinvent distribution. It takes too many one-on-one deals.“

Exxon's Steck: „That's the point. We have reached the limit of all these sub-optimizations. It's time to change the game.“

But changing the game, RCI's Herbage reminded his colleagues, means changing the skill mix for IT players. „What kind of change management practices do you put in?“ he asked the group. „How do you train people to train others to get it done? There is a real dearth of project management skills in organizations – not just in IT, but throughout our companies.“

For all these different perspectives on the role of IT, one theme emerged quickly. Part of „changing the game,“ the group agreed, was thinking clearly about where managing information ends – and out-and-out managing begins.

„The information management process is much broader than the IS department and what it does,“ offered another participant. „As a process, a company's information management is deeply intertwined with all its other processes. Where is the boundary between managing information and managing finance or human resources, especially when we talk about what business people do, because they're managing information, too?“

We are dealing on two levels. There's a difference between 'managing information' and managing the infrastructure that enables information management to take place.“

„From a company vantage point, information technology is a part of other processes,“ added Collins. „In and of itself, IT is not something people really look at. You can talk about an IT value-added stream. These are a set of processes that enable you to deliver IT services to the organization. The real issue is how that IT value-added stream affects the company or its customers.“

„How do you know what's part of IT's value-added stream and what's part of the broader company's stream?“ asked one executive. „If someone at a bank has a customer on the phone and is sitting at a keyboard looking at account balance and other data, is he or she engaged in information management or customer service?“

„Customer service,“ Collins responded emphatically. „The information technology process sits behind that.“

„Information management is not one process,“ said Zakrzewski. „It is a number of subprocesses that are embedded in other processes.“

„But are all these processes mutually exclusive?“ inquired another participant. „Go back to the bank example. Are we saying that there are two processes? One cuts through customer service, one cuts through information management, and they meet at some moment in time, when the customer service rep is on the line? Depending on how you define things, information technology can be everything the company does – or nothing.“

Collins: „You have suppliers and customers and some value-added chain in the company that sits between them. IT itself has customers, processes, and a value-added chain, too. But all of that stuff is designed to enable the value-added chain in the company as a whole.“

„The key is the 'I' in front of the 'T' in IT,“ said Robert L. Barrett, President and Chief Operating Officer, Bane One Services Corporation. „My job is to apply technology to the company in appropriate places that add value. In some cases that will lead to 'information management.' In some cases it won't. In some places we apply technology in ways that don't involve 'information' as we have come to know it.“

„It works the other way, too,“ said Collins. „You can have information management without information technology. Competitive intelligence, for example. Is that piece of 'information management' part of our job? Does it relate to what we do?“

„Think of how we use the word 'information' in IM versus IT,“ he continued. „In IM, information is a noun – the management of information. In IT, information is an adjective modifying technology. That's an important distinction, not just for semantics but for management.“

IS and Reengineering

Colloquium participants noted that even as they struggle to promote greater day-to-day alignment with their companies' business units, they increasingly find themselves being called upon to lead high-visibility change programs under the reengineering banner.

Collins commented: „Quite often, IT has the most complete and broadest view of the organization. We know a little about everything and how it fits together. When you go to any one line function – whether marketing, manufacturing, or engineering – staff members tend to know a lot about their area but they are often in the dark about everything else. The IS organization really does understand the flows of information throughout the company: where it gets created, who needs it, and who uses it most intensively.“

Added Gannon: „We have the people who are familiar with process management and change. That's what we do for a living. I think we have a strong role going into the future with change and reengineering. We can become internal business consultants, not just IT consultants. In fact, the question isn't, 'Does IT drive reengineering?' The question is, 'Can IT survive without adopting the reengineering mindset?' „

During a subsequent presentation, the executives agreed that the IS organization can bring much to reengineering endeavors, from systems thinking and a cross-functional worldview to a problem-solving orientation. But the group also agreed that the potential negative behavior and credibility issues associated with these initiatives were not to be underestimated.

„In lots of organizations, IS comes in with at least one strike against it,“ offered one executive. „Too often, for example, IS lacks a track record on 'real business' issues. Worse, IS people are frequently perceived to be dominating, with poor interpersonal skills. And all too often they are accused of jumping, or seeming to jump, to technology solutions for every business problem.“

Gannon agreed: „Communications is our biggest problem. Our expertise and systems knowledge are real strengths, but sometimes those very strengths can be a weakness.“

Concurred Zakrzewski of Northwestern Mutual: „Sometimes there is a stigma attached to the IS organization because of past failures. Most of our projects go smoothly. But if there's one high-profile failure, look out. That's different from the marketing organization, for instance, which tends to advertise its successes. We should take a lesson or two from them. We don't know how to market ourselves to the organization. That's why credibility can be a problem.“

Alan Herbage of RCI noted that change management is a vital skill for the company and the IS organization. „Moving from a mainframe to a distributed environment isn't easy. For a lot of people, it's very difficult to make

that change. We have definitely gotten resistance. You have to make the future visible, then explain the investments you need to make to get there.“

Collins offered a vision, and a caution: „What we all dream of is enlightened business people who understand the role of information technology. This is a watershed event in the life of an IS organization. Once you get there, the expectations of and demands on our organizations change overnight. And not always for the better.

Sometimes the business people say, ‘We understand the role of IT, and your people aren’t the ones we trust to deliver it for us – IT is too important to be left to the current IS organization! If your organization isn’t up to it, we’ll replace you.’ So it’s not necessarily true that once you get business where you want them, the doors open and you get invited to the party. Sometimes the doors open and you realize, I’m not dressed for this party!’ „

Barrett offered a „Barrett Model“ for change management at Banc One: „For every major project there is a business sponsor who is a member of the executive committee – one of the top 50 people in the company. Then there is a project manager, who comes from IS. For each project, both names are known widely throughout the company. IS can take ownership of the project without having ownership of the business. It’s up to the business sponsor to make things happen in other parts of the company.“

Developing a New Breed of IS People

As the stand-alone world of mainframe hardware and proprietary software evolves into the networked world of client/server computing and open systems, several in the group wondered, can IS professionals evolve with it?

Barrett declared, „We desperately need people who understand telecommunications. IS organizations frequently have a separate group to do telecommunications, and they just don’t get it. They worry about how many T1 circuits you have. They don’t focus on the merger of computing and communications and the new applications that are possible.“

Shaw’s Gannon commented: „Historically, we promoted IS people to project leaders on the basis of their technical skills. But now we are promoting people on the basis of their team-building skills with their peers and their interaction with users. We have lost some really good technical people because they didn’t have the softer skills we need, and when we couldn’t promote them, they left.“

Northwestern Mutual’s Zakrzewski noted: „A lot of this is personal and cultural. As the technologies change, and as our approach to management changes, many people still have the old ways of thinking.

„In our technology-innovation process, when I make requests for outside resources, I tell the other parts of the company, ‘Don’t give me your seasoned veterans. Give me a couple of young people.’ The young people don’t know that they can’t do what we’re asking them to do. Too often, the experienced people are convinced they can’t do what we’re asking of them before they even start.“

Exxon’s Steck remarked that one of his worries is how to develop the kind of people who can bring the technology together with the business. „My organization, like most, has lots of propeller-heads and lots of people who know the business, but fewer and fewer who know both.“

Banc One’s Barrett shared his concern: „We began with a bunch of people in the technology organization who like the technology better than the company. And then we exacerbated the problem – downsizing, right-sizing, or whatever you call it. Loyalty has gone away. That’s especially true in the IS group, because most of these people had no loyalty to begin with. The problem of the lack of company knowledge among technical people is worse than ever before.“

„The psychological contract has been broken,“ Collins of Air Products and Chemicals commented.

Steck agreed, adding: „It really undermines the effort to build the combination of business and IS expertise. Our young people are told, ‘Don’t lock yourself into a company.’ When I ask people to take on an assignment, they ask themselves, ‘Does it build my resume?’ They don’t ask themselves, ‘Does it help build the company?’ „

The group agreed that creating a new breed of IS professionals who understand business issues and feel committed to their companies should be a high priority.

IT and Technology Assessment

Northwestern Mutual’s IS organization is one of the first in the life insurance industry to reckon seriously with a much-invoked mantra of change: moving the organization from a „functional“ orientation to a „process“ orientation based on flexible, cross-discipline teams.

According to Zakrzewski, his company identified five core IS processes: technology innovation, architectural planning, solution delivery, service delivery, and customer relations. The names were carefully chosen. Service delivery, for example, is called applications development at most other companies.

„We want to downplay the word ‘development’ because we want to be able to outsource some of the activity,“ he told his peers at the colloquium. „What matters is that we deliver solutions, not that we develop them in-house.“

He confirmed that although all five processes have received top-management attention, Northwestern Mutual has focused with particular intensity on the technology-innovation process.

„The pace of technological change is quickening,“ Zakrzewski observed. „There are more and more concurrent efforts, and more people are becoming involved. Increasingly, technology innovation depends on external resources – the boundaries are blurring, and it interfaces with so many other processes. A lot of this process involves soft measures and judgment, which makes it difficult. It’s not that people don’t understand that technology helps. But they don’t necessarily understand how the process of technology evaluation helps.“

He reported that Northwestern Mutual has also identified two subprocesses in the technology-innovation process. One is „technology monitoring“: with the help of internal and external resources, keeping abreast of hardware, software, and methodology developments that may be of significant value to the company or its competitors. The second subprocess is called „opportunity identification and communication,“ which is designed to actively investigate, interpret, evaluate, and get others involved with promising technology.

„We do technology research without a technology staff,“ he told the group. „Only two people who are involved in this process have ‘technology’ as their job. The rest are drafted from the business end of the organization and the IS function.“

A major challenge in the evaluation and innovation process, he added, has been communicating with the rest of the company, especially senior management, about what is feasible versus what is a priority. Two specific techniques have played a major role in this respect. One is a commitment to „proof-of-concept“ projects, in which people from different areas form a team to wrestle with what is technically possible and its implications.

The second technique is a matrix that characterizes technologies by two criteria: its stage of development and its potential impact on the company’s competitive position.

„When you put the matrix together with proof-of-concept projects,“ he said, „you have some powerful tools to communicate with management.“

„I led a team of people to reengineer the IS group at Air Products,“ Collins told Zakrzewski. „We came up with six core processes – almost exactly the ones you identified. And we face many of the same pressures.“

„The pace of change in companies driven by reengineering means you have to deliver applications even faster than before,“ said Collins. „That puts technology assessment under a lot of stress. In the old days, technology assessment was a ‘push’ process. You would find a technology, see if it had value, do some pilot projects, and ‘sell’ it to the organization. Now it’s a ‘pull’ process. People demand certain technologies. Our ability to make good technology decisions consistent with overall architecture is really being stretched.“

Best Practices

Overall, all of the executives at the colloquium were quick to agree that IS organizations feel „stretched“ in countless directions. That said, the discussions generated several best practices in the form of dos and don’ts.

Don’t	Do
Just build applications.	<i>Use information to improve processes.</i>
Think big and focus only on those messianic IT projects.	<i>Think incrementally by promoting a continuous rollout of small, manageable IT projects.</i>
Look inward and rely on internal IS resources only.	<i>Create a window into the world: bring together a combination of internal and external resources.</i>

Accept only what the marketplace offers in the way of people, skills, and training. *Identify critical skills – and use a combination of recruitment and ongoing training and education to create the kind of IS organization that best meets your company's specific needs.*

Hold only IS responsible for IT. *Hold the line of business responsible for IT.*

Focus on designing the future. *Evolve and learn to become the future.*

¹Fortune, July 11, 1994.

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