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## INFORMATION: LET'S GET IT RIGHT<sup>1</sup>

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### *Executive Summary*

*The information technology (IT) organization has two major products: the effective processing of transactions and the provision of information. For the past several decades, transaction processing, exemplified recently by enterprise resource planning software, has received the bulk of IT's attention. True, there have been decision support, executive support, knowledge management, and balanced scorecard systems put in place in most major corporations. But these, and other information providing capabilities, have almost entirely been done in a one-off manner. Despite the fact that, in most companies today, processes are redesigned before transaction processing systems are built, a full-scale process-based design of the information needs of an organization is rare. This paper presents such an approach at Fleet Bank. The paper suggests that processes underlying the use of information in an organization should be clearly defined before systems in this area are implemented. The success factors for doing this are noted.*

## INTRODUCTION

For the past decade, corporate computer resources have been devoted primarily to improving key “bread and butter”, transaction-oriented, business processes. The focus has been on enterprise resource planning (ERPs), customer relationship management (CRM), and internet-based logistics. By contrast, in most companies, information—the data that is used by managers for decision-making, monitoring progress and business understanding—has received far less attention.

It is true that there are decision support systems, executive information systems, balanced scorecards, and knowledge management capabilities in many organizations.<sup>2</sup> Intranets, often scattered throughout the or-

ganization in every function and division, make information more accessible than ever before by employees. Portals, packaged intranets with additional information-providing capabilities, are being installed. Data warehouses are growing in number and size. However, in almost all companies information currently exists as “islands.” The pieces are not linked to serve the organization's needs effectively. There is little top-down activity aimed at seizing the opportunities provided by effective design and use of information.

This lack of a business-oriented integrated overview of the use of information was evident in 16 of the 20 companies we studied in the course of our research. When asked about ways in which the organization was working to improve the use of information, managers pointed us toward one or more technology-centered areas (e.g. portals) of activity. The contrary was true, however, at a major division of Fleet Bank in Boston; Lifespan, a hospital holding company in Rhode Island; Selective Insurance Group; and Siebel. All have a senior management led, comprehensive approach to information.

<sup>1</sup> Jeanne Ross was the accepting Senior Editor for this article.

<sup>2</sup> For more information see following sources: Davenport, T.H. and L. Prusak, *Working Knowledge*, Boston, Harvard Business School Press, 1998. Kaplan, R.S. and D.P. Norton, “The Balanced Scorecard—Measures That Drive Performance,” *Harvard Business Review*, Jan.–Feb. 1992; Rockart, J.F., “Chief Executives Define Their Own Data Needs,” *Harvard Business Review*, Mar.–Apr. 1979; Rockart, J.F. and M.E. Treacy, “The CEO Goes On-line,” *Harvard Business Review*, Jan.–Feb. 1982.

While these companies are in the minority today, they will not be in the future. My discussions with many executives in both our research sites and other companies strongly suggest that there is both a desire and a need for more widespread strategic rethinking of how information is gathered, stored, and distributed. Recent advances in IT, particularly the advent of employee portals, have provided the necessary tools. What is needed is management recognition of these capabilities and effective information design in relevant segments of the organization.

There is movement toward increased attention to information. Peter Weill in a recent study notes that the percentage of IT resources devoted to information has increased from 16% to 20% from the mid 1990s to the early 2000s.<sup>3</sup> Rather than being a stepchild of transaction processing, information is becoming a key focus of new system development in many organizations.

What is beginning to drive more well thought out, integrated information capability? We heard four major forces at work from the executives in the companies we studied. They are:

- Rapid consolidation in many industries with ever-increasing size and geographic span providing an increased need for effective overview and information sharing.
- An economic environment that necessitates improved information capabilities at all managerial levels primarily to manage costs but also for growth.
- The availability of significantly improved information-handling technology—in particular portals for information access and vastly superior data warehouse capability.
- Most important, the recognition that effective support of “knowledge workers” who make up a major part of the workforce in an increasingly service-oriented economy, is critical to the productivity of the organization. Sales people, researchers, physicians, and others must be provided with better information.

## THE NEED FOR PROCESS DESIGN

Given this set of drivers, it is more and more important for organizations to manage information more

<sup>3</sup> Weill, P. and S. Aral, “Managing the IT Portfolio (Update Circa 2003),” MIT Sloan Center for Information Systems Research, Research Briefing (3:1), March 2003.

effectively. Our research suggests that the key to doing this is a “process design” approach in areas of the business in which information is most important. Done well, process design begins with a searching look into the business. It often results in a new managerial vision, new goals, new metrics, new ways of operation and, often, new people. To do this effectively, the designers must not only understand the business but also have a profound understanding of technology capabilities. At all times, the designers must take into account the ability of the organization to implement the necessary changes.

Process design as an approach to effective use of IT is, of course, not new. Although decades old in practice, it was well formulated and publicized in 1990 by Michael Hammer and is now used almost universally in the design of transaction processing systems (e.g. ERP).<sup>4</sup> It is now time to think about its use in the design of information capabilities. The word “design,” as opposed to “redesign,” is used intentionally here since information flows in most organizations have grown in a piecemeal manner, not with any thought toward effective processes. There are, of course, companies that are exceptions to this rule in addition to the ones we cite in this article. One notable example is Western Digital that has completely transformed its operational information flows based on OODA (observe, orient, decide, act) loops.<sup>5</sup>

## FLEET'S NEW APPROACH

One example of outstanding information design is at the Commercial Financial Services (CFS) division of Fleet Bank.

When Dean Athanasia took over the Strategic Marketing unit, recently renamed Business Strategy and Development (BS&D), in Fleet's CFS organization in 2000, he saw a multitude of challenges. Fleet's acquisition spree had left the company with a large number of product-oriented sales forces poorly connected to the “relationship managers” who had the responsibility for each account. Several people could be selling into a single account without knowledge of what each other was doing. Marketing efforts needed to be coordinated with the field. There was a need to turn the goals of the sales force from revenue to profit. And, there was a need to increase product penetration in each account so as to lessen the bank's dependence on

<sup>4</sup> Hammer, M. “Reengineering Work: Don't Automate, Obliterate,” *Harvard Business Review*, July–Aug. 1990.

<sup>5</sup> Houghton, J., O.A. El Sawy, P. Gray, C. Donegan, and Joshi A., “Vigilant Information Systems for Managing Enterprises in Dynamic Supply Chains: Real-Time Dashboards at Western Digital,” *MIS Quarterly Executive* (3:1), 2004, pp. 19–36.

lower margin loans. Athanasia notes his mission was to “create a more integrated, more profit-centered, sales-driven corporate bank.”

With these goals in mind and with the full backing of Wholesale Bank Vice Chairman Jay Sarles, Athanasia and his leadership team set about to rethink the manner in which customers could best be served. After much thought, it became clear that a complete reworking of CFS's approach to the market was necessary. To do this, a new, more diverse, team was needed.

Gradually, with the addition of different skills, BS&D became a multi-faceted organization. People with a wide range of backgrounds were put in place. Some were former line banking people who, like Athanasia, had always decried the lack of information available to them. They had a visceral feel for what was needed to provide better information to the field sales force. Some were technologists with deep experience in information warehousing, CRM or sales automation. Some were experts in the management of change. With these capabilities, the group took on responsibility for a coordinated effort in marketing, sales, product development, business development, technology and the implementation of systems in the field.

## NEW PROCESSES

Given the new set of goals and information capabilities, an entirely new design was necessary for information availability and use. Existing processes had to be examined and new ones developed to ensure increased profitability, product extension and deep knowledge of customers. The new design had to make use of the talents of the central marketing group while empowering the field. While many existing processes were still appropriate, several new or redesigned processes were necessary. Three of the most critical new processes were:

- A process to determine each customer's current and potential value so that field efforts could be focused on the right targets.
- A process to enable marketing analysis to inform and guide the work in the field.
- A process to enable collaboration between the relationship managers and the product sales people.

### **The Customer Value Planning Process**

A lynch pin of the new approach was the definition of each customer's value to Fleet. Both quantitative and qualitative factors were used. First, a shareholders' value added (SVA) computation was performed for

each customer. SVA compared net income from the customer versus the capital costs incurred for that customer. Then, other less quantifiable factors such as the customer's financial condition and the importance of the customer's business segment were factored in. The result shed a bright light on the value that each customer provided. The process categorized customers into four tiers from most to least profitable: Defend, Enhance, Monitor, and Exit. The actions taken for each group are exemplified by their titles. The calculation exposed the fact that the bottom two tiers reduced total bank SVA by 30 percent. This led to a decision to reduce the number of low value customers and provided a better focus on high value ones resulting in improved profit in the last two years.

### **Informing and Guiding the Field**

With this customer ranking as the primary piece of information, “scoreboards” were pulled together for each customer. They include in a logical, hierarchical order all the information about the customer from aggregated financial information to summary product sales information to details in each area of interest. Analysis software allows information to be trended and segmented (e.g. who are the top ten customers in cash management and who are the best prospects for this product). One major use for the information is analysis by staff that leads to new insights into the market, advertising campaigns, or new products.

While central analysis is important, the focus of the scoreboard capability is the relationship manager (RM) who is the key decision maker on the front lines. This forefront person is provided with three major capabilities: access to and analysis of information, joint planning with his team (see next section), and immediate access to a number of key business and personal applications. Among other things, all customer information, account team data, call reports, customer service reports, market research and all documents pertaining to a particular transaction are available to RMs' use.

But the RMs need more than just information. They also need financial tools. Applications such as account planning, pricing, and loan approval are available through a portal, and RMs have the capacity to see management reports such as peer comparisons.

“The change was like night and day,” says Holly O'Neill, a relationship manager with responsibility for several major accounts. “Although it appeared gradually, I woke up one morning to find myself with everything I needed to effectively manage my accounts and to do my day-to-day work. Analysis came down from the staff suggesting where I might focus. My

team and I could work together with a joint understanding of the status of the customer. And paperwork became far, far simpler.”

### RM/Sales Collaboration

To allow each RM and the product sales people in each account to work together effectively, the system provides a communication-based joint account planning capability. “The relationship manager and the 15 or so product people who serve the customer can get together on-line, look at all the information and plan what will be done for the customer. It gets everyone on the same page. The only way you can do that in a timely manner is through the system,” says Athenasia.

## FOUR KEY CAPABILITIES

Although other factors were involved, four major critical capabilities formed the backbone of Fleet’s new design and were critical in its success: an information warehouse and a portal, came from available technology. The other two, the definition of a single, unified community and significant attention to management of change, represented major managerial actions (See Figure 1 for a summary).

### Information Warehouse

“Warehouses” which store information have been with us for the past twenty years in either relational or multi-dimensional form. However, their use has grown significantly in the past few years as their value in providing information accessibility is increasingly recognized. At Fleet, a customer-centric warehouse was scoped and implemented. Today, the warehouse forms a single source of information for CFS staff and

management as well as the field force. Built on Oracle technology, it draws from more than 30 sources including back-end data sources and documents. Only data that has information value is selected from each source. Athenasia says, “All this information was in different pipelines, in different spreadsheets, different call reports and customer service reports. So what we did was to bring it all into one central databank for all bank and company information. All of this is now accessible to anyone who needs it.”

### The Information Portal

The key to effective distribution of the warehoused information to the field force was found in Siebel’s Employee Relationship Management (ERM) portal package. Portals, in package form, first arrived in the marketplace in 1999. “Packages,” which enable the management of information like their counterparts in the transaction processing area, provide “best practices,” continuing upgrades, integration with existing applications and well-tested, behind the scenes, infrastructure. Most important, they provide a single point of access to all their information needs for people in the field. Jim Eardly, a BS&D Director of Fleet Bank, states, “In addition to the warehouse, we were building a number of different applications. No one in his right mind was going to want to go to several places to get at different applications. We needed a single source of entry.” At Fleet, the portal is called “Business Advisor” and fills that bill by providing access to the information discussed above.

### The Unified Community

One critical move Athanasia made was to visualize the relationship managers, product sales people, and the

<b>Figure 1: Key Capabilities</b>	
<b>INFORMATION WAREHOUSES</b>	A single source of stored information accessible by the participants in a community.
<b>INFORMATION PORTAL</b>	Software that provides a single point of access for <u>all</u> information utilized by the members of a community.
<b>UNIFIED COMMUNITIES</b>	A set of people, often from diverse parts of an organization, who are brought together in order to effectively use the same information to achieve organization goals.
<b>MANAGEMENT OF CHANGE</b>	The process of ensuring that everyone in the community understands, and in many cases contributes to, the new information capabilities and can operate effectively in the new information-rich environment.



marketing force as one unified, vital community. All had previously reported to different leaders. Anthanasia saw it as a community that could be drawn together through shared information. Each participant would play a different role in relation to that information.

Communities are an increasingly well-recognized aspect of organizations. The term came to prominence driven by the knowledge management field in which communities are most often described as informal, self-organized groups of people who have common interests and, thus, to have access to common information. However, there are also many formal communities in organizations. These are groups, like functional departments or project teams, who have always relied on often incomplete information from above (directions), from below (status data) and from other parts of the organization (e.g. updated marketing plans to be used by the manufacturing function). Our research suggests that these formal communities, as at Fleet, deliver high payoff when provided with the appropriate information.

### **Management of Change**

From the very beginning, it was realized that changing the way 3,000 people did their work, to reflect the new guidelines and capabilities, was going to be a major challenge. As Aron Levine, a Director of CFS, notes, "the technology was significant, but we also recognized that management of change was a crucial component of the job." Many approaches were used. Encouragement came down from senior and middle management. Training was offered and utilized. But, two further steps were perhaps most important.

First, a group of "Sales Tool Champions" was carefully selected, educated and helped in every way possible. "We're not big fans of the 'big bang' approach where you announce one time change management programs," says Michael Caron, Director of Customer and Risk Information at CFS. "Rather, we wanted to infuse the sales culture with the change by having people sitting at the next desk help others to understand how to work in the new environment. We've got people at all different levels doing this. They range from very senior line and portfolio managers to associates and analysts." The second key approach to the management of change was an active program of ongoing informed listening to and learning from the users of the system by staff with background in their

specialties. Their ideas, where appropriate, were implemented in future releases much like a software company would do.

## **RESULTS**

Although all the credit cannot go to this system, it has certainly helped drive CFS towards its goals. From 2001 to 2002 Fleet reduced its number of credit-only customers from 33% to 18%, increased the number of products sold to customers by 17 percent in 2002 and increased cross-sell revenue by about 14 percent. Equally important, the field force is now supported with information—and more applications are coming on the system.

## **OTHER ORGANIZATIONS**

While Fleet was the most striking example of an organization pulling together all four capabilities, we saw others on the way in differing stages. The sample of companies was not large enough to develop a comprehensive stage theory, but four different approaches were evident. These can be classified as organizations (1) that were without a coherent plan for information in any segment of the organization (most companies), (2) that were embarking on a new top-down initiative (one company), (3) that were involved in planned implementation (a few), or (4) had accomplished organization-wide information integration (one company). Examples in the last three categories follow.

### **Embarking on a Top-Down Initiative**

Selective Insurance Group is working to provide major functions with data marts accessed through the intranet. At Selective, the successful progress of its web-based transaction processing capabilities has recently freed resources to concentrate on information. The success of a single data warehouse for the claims function, and the desire of both CEO Greg Murphy and CIO Richard Connell to provide improved decision-making, has led to a recently developed plan to add information repositories in the next few years for agency management, underwriters, actuaries and financial personnel. While he acknowledges the expense of doing so, CEO Greg Murphy believes that access to information is critical for the success of the organization that ranks among the top 50 insurance companies

### Implementing the Concept

Lifespan, a Providence-based hospital group, is working today, as are many other hospitals, to fully support its community of physicians. Lifespan has implemented a clinical data warehouse (that stores data on clinical results from EKG, laboratories, diagnostic imaging, anatomic pathology, etc.) together with a physician portal, called LifeLinks. Other critical applications are underway. These include Physician Order Management and a computerized medical record. The former, in addition to eliminating handwritten orders also provides a check on drug dosages and other sources of medical error. Additional applications are being added with the ultimate objective being to provide a single focus for the physician.

### Company-Wide Integration

Siebel, a provider of portal and other software, has implemented the most thorough redesign of computer-based information of any company we have seen. As at Fleet, the system is the result of a thoughtful review of how Siebel could be best managed with today's technology. This review resulted in on-line implementation of a set of managerial processes as well as applications aimed at providing every employee with more effective information. Anchored on its own portal and its CRM suite of applications, Siebel's system provides customized information from a large variety of text and data sources to all members of each functional community.

One key application is an on-line implementation of management by objectives (MBO). "This was a fundamental way of managing when we started the com-

pany," says Bruce Cleveland, Siebel Systems' Senior Vice President of Marketing. "In those days, we would all get together in one room and lay out the future of the company. We did not leave the room until we had a well-defined unambiguous set of objectives and responsibilities for each of us. Now, not everyone can sit in the room. But, today, we have a virtual room in which each person can learn their management's objectives and define their own objectives to contribute to the progress of the company." A host of other tools and management processes exist in the system.

### CRITICAL SUCCESS FACTORS

Developing an effective combination of these components is, however, expensive and time-consuming. Based on our cases, there are four critical success factors for making this happen. None are unusual in the IT world, but all take on a new emphasis as we deal with information (See Figure 2 for a summary).

The first is vision. This was certainly needed during the 1990s as a new generation of transaction processing systems was installed. The decisions involved to be made for projects such as ERPs included such major issues as whether systems would be globally or locally oriented. However, once these decisions were made, the ERP software showed the basic structure of the resulting system and limited the further management, if not the technical, choices to be made. Dealing with information today at places like Fleet, however, the possibilities are many and the way forward is far from certain. There is a need to visualize not only the appropriate community of people, but also the new management concepts and metrics that will be used.

<b>Figure 2: Critical Success Factors</b>	
<b>VISION</b>	The ability, starting from organization goals, to define the appropriate community, processes, metrics and management concepts needed for the new information-based business.
<b>EXECUTIVE BACKING</b>	Senior managers who continually communicate the importance of the new information capability to the organization despite the lack of a "hard" ROI.
<b>A NEW LEVEL OF PROJECT LEADERSHIP</b>	A well-respected manager who combines business knowledge with a clear understanding of information technology and how to use it to transform the way in which information is used in the organization.
<b>LISTENING AND LEARNING</b>	The ability of those involved in the management of change to work with knowledge workers to learn how the initial system can be improved.

Technology must be assembled from among a host of different possibilities. Technical guidance does not come from any one place. Moreover, one must deal with the probabilities of gaining the trust and acceptance of knowledge workers who are often change-resistant and mobile. And the economic impact is far from clear in most cases. In undertaking process design for information, one steps into uncharted waters. There is a premium on creative thinking in this new, now technology rich, information environment. At Siebel the guiding vision was to manage the company, through technology, in the same way as it was managed as a small company when person to person contact made broad knowledge of what was going on feasible.

The second critical factor is executive understanding and, importantly, use of the information. No matter how compelling the vision, information processes defy the development of a "hard" ROI. They need executive backing to move through the capital budgeting process. They also significantly affect the jobs of knowledge workers—a type of employee often resistant to change. Implementation can be very difficult. To counter these issues, Jay Sarles at Fleet, Greg Murphy at Selective, Tom Siebel at Siebel, and George Vecchione at Lifespan all have provided leadership in a hands-on way. In every case, there has been strong backing of the key project leaders. However, the most significant move an executive can make is to directly make use of the information products of these systems. Some use the information to drive meetings. Others just let it be known that they are using it for management purposes. Where senior leadership is lacking, as in the implementation of a corporate-wide portal-based redesign in a major consumer products company, we saw the project stall and die. Day-to-day business needs overcame a far-seeing project.

The third factor is a new level of project leadership. Virtually no IT-enabled project is easily defined and implemented. However, for the projects we are describing, we see a clear need for leadership with deeper understanding of both business and technology. This is perhaps best summed up by Athanasia. "In my mind, running a business without using technology, it's like running without a leg or something. It is the same thing with business skills, marketing and other functional skills. So I have to know about these things and know them in enough depth to be able to use technology to improve the business, because that's what it's all about."

The fourth critical factor, listening and learning, is a crucial part of the management of change in informa-

tion projects. For most operational, transaction processing systems the fundamental design of the system is well understood. These systems have been built and rebuilt over the past few decades. ERPs today include most of the best practices for transaction processing systems. This is far from true for information. Any organization's initial design is a one-off draft. It needs to be exposed to the organization's knowledge workers, who have diverse ways of managing—and thus often have diverse information needs. It is only by putting an original system out there and then listening and learning that an IT team can ensure that it has the real needs of the organization covered. Fleet's responsiveness to its workers' information requirements has paid off for them. This, of course, is not a new insight. The literature on information-oriented systems, from DSS and ESS to the present day, is replete with examples of the need to "stay close."<sup>6</sup>

Even with the best of will, however, and particularly in these tough economic times, the move to more widespread effective use of information in organizations will be gradual. It requires both nerve and understanding to invest in an area without a clear ROI. Vision is required. For funding, one must compete with "hard ROI" projects. The provision of effective access for all communities, formal and informal, in an organization is a long way off. However, the leading companies in this area are centering on the critical communities where management understanding and organizational need come together. If what we see in these companies is correct, the process of pulling together the islands of information into a more effective, design is underway.

## ABOUT THE AUTHOR

**John F. Rockart** ([jrockart@mit.edu](mailto:jrockart@mit.edu)) is Senior Lecturer Emeritus of Information Technology at the Sloan School of Management, MIT where he has taught and conducted research on the management and use of computer-based information systems since 1966. He is best known for the development of the critical success factors (CSF) method for information and information systems planning and the seminal articles that served to initiate the field of executive support systems (ESS). His current research interest is the provision of information to enable more effective knowledge workers in organizations. He has authored or co-authored three books as well as many articles. In 2003, he was honored by the LEO Award for lifetime achievement in the IT field by the Association for In-

<sup>6</sup> Rockart, J.F. and D.W. Delong, *Executive Support Systems: The Emergence of Top Management Computer Use*. Homewood, Illinois, Dow Jones Irwin, 1988.



formation Systems. He is currently the Editor-in-Chief of *MIS Quarterly Executive* and serves on the boards of Keane Inc., Selective Insurance Group, OASIS Semiconductor, Tufts New England Medical Center, and the Society for Information Management (SIM).