

# "EFFECTIVELY EMPLOYING INFORMATION RESOURCES TO ENABLE BUSINESS PROCESS REENGINEERING"

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## **BACKGROUND**

In the 1990s, the world has become even more complex and fluid. Frequent, and oftentimes drastic, changes in organization, management and technology have become the norm, if not THE most important issue in both the private and public sectors. In many of today's organizations, including the Federal government, there is tremendous pressure to reduce budgets, downsize/eliminate organizational structure, and use information technology more effectively. To address these rapidly changing critical issues, business process reengineering has become the preeminent business performance technique used by today's visionary executives to achieve their strategic goals. Yet, evidence suggests that many reengineering efforts fail -- why?

Perhaps, management in both the private and public sectors has only focused on:

- \* Reorganizing: Moving "boxes" from one side to the other, up or down on the organizational chart,
- \* Downsizing: Major reductions in staff just to cut costs to meet quarterly profit/cost goals,
- \* Automating: "Paving over the cowpaths", doing the wrong things efficiently,
- \* Improving: Incrementally, one step at a time through quality circles.

But, is this reengineering -- ABSOLUTELY NOT! Then, perhaps, is breakthrough thinking, as embodied in business process reengineering, something so overwhelmingly and intoxicatingly new? NOT HARDLY, these ideas have existed for centuries. But, business process reengineering is NOT a miracle cure. It offers no quick, simple or painless fix to organizational, managerial or technological challenges. It does entail difficult and strenuous work; and it still raises many questions, including the effective use of information resources.

Yet, management must not only do things right, but also do the right things if they are going to succeed in today's fast changing environment. Not only must Federal executives, managers and employees fully understand the dynamic changes, but they must also understand the basic concepts and methodology for reengineering and the critical role of key process change enablers, including information and information technology. To reengineer successfully, they must know how to effectively employ these various process change enablers in harmony to achieve an information-based organization.

## **FRAMEWORK**

Through their extensive research, Michael Hammer and James Champy have done an excellent job in developing the basic tenets for business process reengineering, which emphasize fundamental rethinking, radical redesign,

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strategic and value-added business processes, dramatic improvements, and critical performance measurements. Others, including Thomas Davenport and Ray Manganelli, have also done extensive work in developing and refining the fundamental concepts of reengineering. Using these reengineering principles as a framework, Federal departments, agencies and offices can better serve the American citizenry by striving for excellence in providing high-quality products and services at fair prices and reasonable cost in order to fully meet the needs and expectations of both their internal and external customers. They can, in fact, determine a better way to do work through their organizational structure, their work processes, and their people.

In implementing business process reengineering, Federal organizations must realize that, on one hand, tiptoeing through the reengineering maze one process at a time and in a "vacuum" will be most difficult at best. On the other hand, casting reengineering within the organization as the way of life -- a life-time journey to be traveled by all in the organization -- will ensure, although extremely difficult, that all changes as a result of the reengineering effort, all process redesigns, will fit together.

To address this enterprise-wide approach, a simple and straightforward, yet structured and disciplined methodology must be used in order to give an organization, and its people, a fighting chance for success in their reengineering efforts. The following eight-phased methodology is an example of such an approach which may be used to implement business process reengineering.

**\* PLANNING:**

Set foundation for future change activities; increase awareness, understanding and support for business process reengineering; and establish mandate and provide direction for change.

**\* ORGANIZING:**

Mobilize, organize and train people to do business process reengineering; develop reengineering plans; initiate communication activities; and manage change.

**\* EVALUATING:**

Identify, measure and evaluate current business functions and processes; and ask the tough, yet fundamental questions of why and necessity.

**\* IDENTIFYING:**

Identify and prioritize business process reengineering opportunities; complete process mapping analyses; and establish BPR project framework.

**\* VISIONING:**

Create vision of ideal business process; determine success criteria for new process; assess gaps between current and ideal processes; and gain approval.

**\* DESIGNING:**

Identify process change enablers; develop, test and evaluate process design alternatives; undertake detailed process design; and gain approval.

**\* IMPLEMENTING:**

Initiate pilot project; develop implementation plan; evaluate and train people; implement new business process; and measure and evaluate process performance.

**\* MANAGING:**

Maintain BPR infrastructure; evaluate reengineering efforts; develop future reengineering objectives and priorities; and implement continuous quality improvement programs.

This methodology -- planning, organizing, evaluating, identifying, visioning, designing, implementing, and managing -- will allow a Federal organization:

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- \* To build the necessary "bridge" from the on-going corporate strategic planning efforts to the process of reengineering -- to tie its reengineering efforts to its strategic direction and control;
- \* To address its current business practices;
- \* To develop the vision and design for its future process-oriented infrastructure, emphasizing management, organizational, technical, and human resource issues;
- \* To coordinate all reengineering activities;
- \* To build the "bridge" from the implementation of the reengineered processes to the long-term management of these processes -- to positively manage and continuously improve its new business processes.

## PROCESS CHANGE ENABLERS

Federal organizations can successfully enable this methodology in developing and implementing new business processes through the use of positive and powerful key process change enablers -- factors that can shape and drive technological, behavioral and organizational change. These enablers will provide the means to successfully undertake the process of reengineering and contribute significantly to the successful implementation of the new, reengineered business processes.

Yet, Federal managers must also realize that each powerful process change enabler can both enhance and disable the organization's reengineering efforts. Therefore, Federal managers must ensure the judicious and careful use of process change enablers in exploiting new structural, cultural, management and technological capabilities. To succeed at reengineering, all process change enablers, including information and information technology, used in the reengineering effort must be aligned and in balance. They must work hand in glove with each other. To neglect a change enabler's importance or place more weight on the use of any given change enabler will prove detrimental, if not catastrophic, to the overall reengineering effort.

Process change enablers that should be considered within any business process reengineering effort include: people, education, communications and marketing, organizational structure and culture, funding, information, and information technologies. Information resources, and the management of those resources, are defined in Federal law and regulations and include many of these process change enablers. Yet, other process change enablers may also be chosen depending upon the Federal organization's mission, environment and situation. Each Federal organization must determine for itself which process change enablers will successfully support their reengineering effort; but information resources will certainly play a key role in all reengineering efforts within the Federal government. Let's consider for a moment each of these process change enabler categories:

**PEOPLE.** By far and away, the most important process change enabler. Reengineering efforts will succeed or fail based upon the people, both employees and managers, in the Federal organization -- their skills, experiences, and attitudes. Attitude towards and motivation for reengineering will be crucial. Effective, dynamic and flexible teamwork will be essential in undertaking reengineering, as well as empowering all individuals involved in the reengineering efforts to "think out of the box"; to break away from old traditions and paradigms; and to be imaginative, innovative, inductive and simply outrageous in their ideas for changing the way work is done through the creative use of key process change enablers. Proper education and training must be provided to ensure that all Federal employees and managers are properly prepared to participate in the process of reengineering and the future reengineered processes within their organization.

Positive, dynamic leadership is a must -- all Federal executives and managers throughout the government must be supportive, committed and involved if the reengineering efforts are to succeed. Management must ensure

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a positive approach toward all human resource issues, including positive motivation, in order to use the full potential of all individuals in the Federal organization.

**EDUCATION.** Everyone in a Federal organization, including senior management, must be apprised of what reengineering is -- the concepts, methodology, techniques and tools -- and what reengineering actions will be taken. Everyone must be made aware of the importance and focus of the reengineering efforts. In order to make positive contributions to the reengineering effort, individuals must be kept informed. Education must begin during the PLANNING PHASE and continue throughout the journey of reengineering within the organization.

**COMMUNICATIONS and MARKETING.** Federal managers must ensure that communication channels are kept open with everyone in the organization. Information on the reengineering efforts must be timely and accurate in order to create and maintain the necessary buy-in and commitment from the employees and managers. Management must gain their support, trust and confidence. Federal managers must also communicate openly with their organization's external stakeholders, including the White House, Congress, oversight agencies, businesses, other concerned groups, and their primary constituency -- the American public, in order to gain the necessary support and to ensure consistency of purpose.

**ORGANIZATIONAL STRUCTURE.** The management infrastructure will either support or significantly hinder reengineering efforts -- a critical issue for the Federal government given its long history of organizational bureaucracy and day-to-day internal politics. Within reengineering, focus will be placed on managing process boundaries; thus clarity in roles and authority must be clearly established. Emphasis will be on self-managed teams; thus the relationships, composition and location of the reengineering teams will be key.

**ORGANIZATIONAL CULTURE.** The historical culture within the Federal government must change if reengineering efforts are to succeed. The new culture must be fluid, flexible and adaptable, embracing change as the way of life, rather than maintaining the status quo and resisting any change. Management must emphasize individual initiative, imagination and innovation within the reengineering efforts. They also must empower more individuals in the reengineering decision-making process.

**FUNDING.** Reengineering can not be done on the "cheap". Sufficient funding must be provided and maintained to see all reengineering efforts within individual Federal organizations through to their completion. Continued funding must be provided if reengineering is to become the way of life within Federal organizations.

**INFORMATION.** Are we in the Information Age or Knowledge Society as some might suggest? I think not. When most people talk about the Information Revolution, they focus primarily on the information technologies that are exploding upon our society at breakneck speed. As this tremendous bow wave of information technologies continues to descend upon us, transforming our society, our businesses, and our governments, perhaps then we are only in the Information Technology Revolution. Since today, most organizations, including Federal organizations, are inundated with data -- a state of data overload. Yet, many organizations continue to automate the current chaos and confusion that exists within our management and organizations without any focus on information.

In 1987, Peter Drucker wrote that information is data with purpose and relevance. At that time, he also declared that organizations were in a state of information blackout since individuals were not taking or accepting information responsibility. Has anything really change? In 1991, Shoshana Zuboff argued that organizations needed to informate, not automate, in order to understand, manage and create value from information. Thomas Davenport suggested in 1993 that more than 85% of the information in organizations was not manipulated by any

form of information technology; yet, he believed that information had considerable value as business process inputs and outputs. At a 1994 CIO conference, Peter Drucker again exhorted the CIOs in attendance to focus, not on information technologies, but on information and its strategic role for today's organizations.

Today, many individuals in the Federal government, as well as in the private sector, still do not understand or appreciate the significant role that information can play in their organizations. Most use the words \*data\* and \*information\* interchangeably; yet, data is not information. In order to consider information as a key process change enabler for business process reengineering, let us consider an information paradigm and the characteristics of information-based organizations, as defined by Drucker and Zuboff.

The information paradigm begins with raw, uncollected data that exists everywhere. Within organizations, including the Federal government, individuals determine various parameters such that selected data can be collected and organized from the available raw data. Once data is collected (electronically in various types of databases or manually) or assimilated, individuals can now apply unique meaning and value to very specific data, defined as information, as they require its use within their work. Individuals will gain knowledge in the use of this information through positive or negative results. Through the accumulation of knowledge, individuals gain wisdom in the use of specific information.

In order for our society -- individuals and organizations in both the private and public sectors -- to effectively and fully evolve into the Information Age, we must understand and use information as data which has meaning and value to individuals, not organizations. Each individual will consider and view data differently, defining it as information only when they assign a unique meaning and value to the data as they need or use it. Specific roles for which individuals in the Federal government can use information include: measuring and monitoring process performance, coordinating process activities, customizing processes to meet customer needs, and decision making.

It is in decision making that information will play its most important role. Individuals in the Federal government, as well as in the private sector, can use and leverage information, not just any data, to assist them in making positive decisions within their business processes. To do so, will require timely, accurate and relevant information.

To be truly effective, all individuals in the Federal government must become fully aware of and assume responsibility for information -- its identification, acquisition, storage, analysis, use, and distribution -- a critical requirement for information-based organizations. These organizations can more effectively use information by opening up the information base of the organization to all people at all levels in the organization. This will require greater discipline and responsibility by all individuals, and will place greater emphasis on relationships and communications between individuals in the organization. For information-based organizations in the Federal government to be successful, they must emphasize the development of intellectual skills, the strategic integration of information, and a dynamic learning environment. It will require positive, flexible leadership and continuous top management support and commitment.

Unfortunately, we have only scratched the surface in understanding the effective role of information within organizations, including within the Federal government, much work must be done in educating individuals on its importance within reengineering and information-based organizations. More focus must be placed on the meaning and value of information. A distinction must be made between information and data, and between information and information technology. As defined, information can be a powerful process change enabler; and, therefore, information should be considered as one of the most important strategic resources of any organization, in both the private and public sectors.

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**INFORMATION TECHNOLOGIES.** With the explosion of information technologies, the overall question must be asked: what direction is or should information technology be headed? Are we closing the gap between business requirements and information technology capabilities, or are we just "rearranging the deck chairs on the Titanic"? The past is replete with complex and undefined business processes with business functions supported through vertical systems development by using proprietary hardware and software -- today's legacy systems in private businesses and in Federal organizations.

Rather than just automating old functions and processes with new information technologies, new capabilities must be determined in order to apply current and future information technologies more effectively in support of reengineering efforts within the Federal government. Information technologies must be placed in the proper perspective within reengineering -- not as a sole "driver", but as a contributing enabler to allow us to do things in our business processes that we are not already doing. To more effectively use information technology as a positive process change enabler, Thomas Davenport suggests that organizations must first effectively define and use information. To do so, will enable Federal organizations to shift from predicting events to managing uncertainty, to shift from discrete to continuous processes, and to increase emphasis on the horizontal flow of information across the organization.

We must then search out and recognize the business possibilities latent within various information technologies by examining different functions, such as automational, informational, tracking, analytical and integrative, that they can support within our Federal organizations. Recent surveys, including a NAPA survey of 31 Federal agencies and 36 state agencies, indicate that the types of information technologies used most often in business process reengineering projects include: shared databases, telecommunication networks, client/server architectures, e-mail systems, electronic data interchange, high performance computing, imaging systems, and decision support systems.

To be most effective across a Federal organization, information technologies used as process change enablers must be fully integrated into an enterprise-wide information resources architecture. The focus on and use of specific information technologies must be driven by the organization's data requirements which, in turn, should be driven by the accumulated information requirements of all individuals within the organization. In this manner, both information and information technologies can be effectively used to enable new business processes, thus enhancing the strategic posture of the Federal organization -- more efficient and effective in delivering services to the American public.

## **IMPLEMENTATION**

Federal executives, managers and employees will be better prepared to undertake business process reengineering and effectively manage innovative change, by first appreciating the common pitfalls and misconceptions in applying reengineering concepts, including:

- \* Lack of continuous, positive leadership and commitment; lack of executive consensus and a senior executive champion; lack of understanding of BPR concepts and principles by executives;
- \* Bury reengineering efforts in the middle of the "corporate" agenda; unrealistic expectations and lack of adequate resources;
- \* View BPR as a short-term, narrowly-defined project; settle for minor results; maintain quality-hostile environment, resist change; neglect people values and beliefs;
- \* Lack of cross-functional, cross-organizational BPR team; try to make reengineering happen from the bottom up; information systems staff involved too late;
- \* Use ineffective, undisciplined methodology; inadequate project team skills; take too long;

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- \* Assume automation equates to reengineering; emphasize technology over people issues.

By example, a large telecommunications company attempted to undertake a massive reengineering effort, focusing primarily on the consolidation of its many data processing centers. At the same time that they were implementing over 450 BPR projects, spending over \$1 billion, they also undertook several new major business initiatives, as well as continued a major downsizing effort -- separate and distinct from their BPR efforts. This company tried to do too much, too fast, commingling many different and critical projects on their corporate agenda. Their senior executives failed to resolve this "forest versus trees" syndrome, which severely hampered their reengineering efforts. They completely lost focus on their customer. Recently, they also decapitated and reassigned much of their executive leadership. As a result, their reengineering efforts have floundered, never achieving the necessary changes that were initially envisioned.

Second, they should understand why and how organizations, both public and private, have succeeded in implementing business process reengineering through the effective use of key process change enablers, including information resources. Key success factors include:

- \* Gain and maintain top management support, commitment and involvement; select the right people to undertake reengineering; have a BPR champion;
- \* Have the "will" to undertake reengineering -- absolutely critical; require extraordinary belief, dedication and effort -- a huge, tough job;
- \* Recognize that change is a way of life, a value system, not just a process or project; recognize that BPR affects every person and every part of the organization;
- \* Focus on the customer at all times; focus on process before technology; focus on people before technology;
- \* Focus on strategic, value-added processes; use key process change enablers; focus on organizational core competencies;
- \* Provide a realistic BPR mission, clear direction and sufficient resources; organize properly; use disciplined BPR methodology; educate, train and communicate on continuous basis;

Lessons can be learned from many organizations, both in the public and private sectors, which have been successful in implementing their reengineering initiatives, for example:

- \* The Veterans Affairs New York Regional Office reengineered its process for filing veterans claims after previous total quality improvements had not gone far or fast enough. They succeeded by gaining top management support, by applying a "clean sheet" approach to their organizational design and process evaluation, by focusing on value-added activities, by emphasizing education and training for all their employees, and by implementing self-managed teams.

- \* The Connecticut Unemployment Office successfully reengineered its process for registering for unemployment compensation by shifting from a control-oriented to a service-oriented job philosophy, by implementing "one-stop shopping" for customers, by cross-training all employees, and by effectively using information technology.

- \* Union Pacific Railroad successfully reengineered its process for replacing faulty railroad track by eliminating organizational bureaucracy, including 12 layers of management and by empowering the track inspectors and maintenance personnel to work closely together to improve track safety.

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\* The City of Charlottesville, Virginia successfully reengineered its process for obtaining a business license by implementing "one-stop shopping" for its customers, by cross-training their employees, and by implementing the use of e-mail.

\* Mutual Benefit Life Insurance Company successfully reengineered its process for applying for insurance by empowering individuals as case managers with full responsibility to deal with the customers and by using expert systems and shared databases.

\* Corning Asahi successfully reengineered its order fulfillment process by gaining top management support, by communicating with all employees, by implementing an integrated information system using a centralized database, and by consolidating customer operations and expanding the role of customer service.

\* US Sprint successfully re engineered its customer service and billing processes by focusing on integrated processes and value-added activities, by emphasizing training and communications, and by aligning their information systems with the business requirements, using client/server and data warehousing technologies.

\* Hallmark Cards successfully re engineered their process for getting new greeting cards to market by providing a clear vision and objectives for re engineering, by establishing re engineering as a "journey" for the entire company, by gaining top management support and commitment, by establishing priorities, and by effectively using barcoding and a decision support system.

\* The Minnesota Department of Revenue successfully reengineered its sales revenue management process by implementing a dynamic communications and change management campaign, by using prototype and pilot projects to test reengineering concepts, by empowering individuals as case managers, by retraining their employees, and by using scanning and expert system technologies.

Reengineering can be done and done successfully. However, as a "new" pioneering tool with many uncertainties, management in the Federal government must have the knowledge to understand, the courage to begin, and the will to succeed at business process reengineering if they are going to make a "positive and successful difference" in their organizations. To do so, Federal managers must be able to move from having great thoughts about reengineering to making these ideas happen.

Successfully managing innovative change within the reengineering framework will require a heavy dose of the 4 C's: commitment, coordination, communication, and cooperation. All levels of management within the Federal government must be fully committed to the reengineering efforts. Internally, they must work very closely together, engaging in active dialogue, ensuring full and active participation, and actively and positively supporting the reengineering effort. Externally, Federal managers must actively communicate with their organization's stakeholders, including the American citizenry, to gain their support and cooperation.

Lastly, to be successful at business process reengineering through the use of a sound methodology and the effective employment of key dynamic process change enablers, including information resources, management at all levels of the Federal government must exercise positive and dynamic leadership. They must maintain a high degree of flexibility and bring a dose of common sense to the "reengineering" table. And, above all, they must always focus on their people as the most important resource -- the most important process change enabler -- to address within their reengineering efforts.

