

# BPM in the Federal Government



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## 1. Introduction

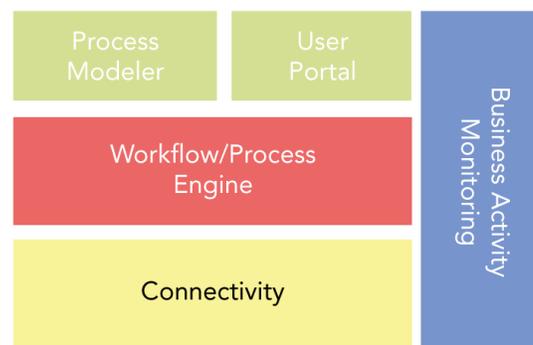
Organizations are increasingly seeing their most important assets not as the actual products or services they provide to their customers but the processes themselves. In government, these processes are not generally subject to competitive pressures, but citizens and stakeholders within other departments demand a more effective approach to delivery of services that only the government can provide. Presidential Initiatives<sup>1</sup> and e-Government mandates are placing more emphasis on the efficiency and measurable effectiveness of processes. Business process management (BPM) can help deliver the improvements sought in these programs. Analysis of process-related ROI enables organizations to prioritize transformation and modernization initiatives and demonstrate the value of these investments to political leaders and citizens.

This paper describes the benefits of BPM in government, includes case studies from successful BPM projects in the government sector, and provides sources for additional research.

## 2. What Is BPM?

BPM is the management of workflow, information, and interaction among systems and people involved in a discrete activity. BPM technology typically consists of several software applications working together to enable the management of these interactions. It generally includes software for collaborative modeling and simulating processes, tools for authoring and managing business

**Figure 1. BPM System Components**



<sup>1</sup> See the Office of Management and Budget website for more information on Presidential Initiatives <http://www.whitehouse.gov/omb/egov/c-presidential.html>

rules, and a place where IT can easily link and integrate systems into the process. BPM also includes a workflow engine and repository for executing and storing process models and a workspace where process participants access and act on work items. Lastly, reporting and analysis tools allow users to gain insight into real-time performance as well as analyze historical performance.

That said, BPM is far more than a technology framework for managing the interaction of business applications. It also refers to the systematic analysis and modeling of business processes to improve organizational effectiveness and agility in responding to changing requirements. As organizations adopt a process-centric approach to delivery of their services, they must accept the notion of a process lifecycle. The process lifecycle is an iterative process that includes designing processes, deploying run-time processes, monitoring and managing those processes, and reporting and analyzing the performance of those processes in order to improve and modify them.

Properly implemented, BPM software facilitates more effective congressional oversight, and makes it easier to manage finances, find bottlenecks in processes, and respond to new legislative and executive direction.

### 3. Why BPM Is Important

As business conditions change, systems must adapt to meet new requirements. E-business is not simply about doing things electronically that were once done on paper. It is about being able to quickly adapt to new needs. It is about being able to improve the responsiveness of an organization, not just turning paper into electrons.

BPM improves productivity and shortens cycle times for innovation within an organization. For government agencies this can mean saving money and improving services to citizens by making it easier to interact within departments and across agencies. For some agencies it means responding more effectively to directives and initiatives that are mandated by the Office of Management and Budget (OMB) or Congress. For the Department of Defense it can mean responding more effectively to Business Transformation Agency directives.

BPM can help organizations achieve the following goals:

- Uncover process inefficiencies and improve the quality of end-to-end processes.
- Ensure regulatory compliance and improve government services to citizens by making it easier to modify processes as requirements change.
- Improve visibility into processes.
- Support continuous process improvements.
- Increase organizational effectiveness – a key goal of transformation in every area of the public sector.

### **STREAMLINING PROCESSES**

A BPM project is often the first opportunity an organization has to identify ownership and measure effectiveness of its core business processes. In the commercial environment, competition has pushed product and service companies to drive costs down and strive for efficiency in their end-to-end processes. Similarly, e-Government initiatives, OMB directives, the Global War on Terror, and the ongoing need to “do more with less” has driven some of the same innovations in the federal government.

Organizations find it easier to innovate when they have flexibility in their processes. This flexibility can be achieved in BPM terms through the creation of an independent “process layer” that allows changes to be made to a process without altering the underlying business applications, databases, system components, or user interfaces.

How many times have business managers heard from IT that it will take too long to make a seemingly simple change to a process? The ease of use and clarity provided by BPM can allow an organization to deal more effectively with extremely complex processing environments. For example:

- **The right work to the right person at the right time:** BPM ensures that the appropriate staff member is conducting review and approval. If the electronic signature for a process is not properly obtained at the proper step in a process, an alert or exception event can be triggered. If an audit requirement changes, the adjustment can be made without disruption to an existing

process and the integrity of the system is ensured through robust version control of the underlying processes.

- **Sense and respond:** Business activity dashboards, event correlation, and rules engines allow managers to identify problems (bottlenecks, delays, aberrant behavior) or opportunities in a timely manner and act to resolve them.
- **Continuous improvement:** Previous process performance can be used to simulate modifications to a process before a modification is delayed. This ensures that potential changes will be beneficial.
- **Changes in requirements:** Processes can be remodeled and systems can be adjusted without disruption to in-flight processes.

#### **DRIVING PROCESS IMPROVEMENT: BPM AND MODEL-DRIVEN ARCHITECTURE**

As BPM and service-oriented architecture (SOA) technologies converge, their combination enables business analysts to interact at more granular levels with functional components – the actual IT building blocks on which all businesses rely. However, a detailed knowledge of the underlying functional components is not necessary for these analysts because leading BPM solutions provide rich graphical interfaces that enable a model-driven architecture. Furthermore, a model-driven architecture, based on emerging industry standards, provides substantial value to both business and IT decision-makers.

BPM projects can increase visibility into “black box” IT systems. In traditional IT environments, visibility was usually an afterthought. At best, reports could be run based on historical “data at rest.” This approach is slowly giving way to a more transparent environment that allows process owners to gain more control at every stage of a process. From weapons procurement to grant management, leading government agencies are fashioning a business-driven IT infrastructure that can be adapted over time to save money for taxpayers and make military agencies more efficient.

Before embarking on a major IT investment, business process owners and organizational leaders need to understand how the changes will improve the effectiveness of the business – for its current delivery of services and its ability to adapt to new requirements. Rather than “rip and replace” established technology, many improvements to existing systems can meet current business requirements and deliver the necessary agility to respond to future requirements.

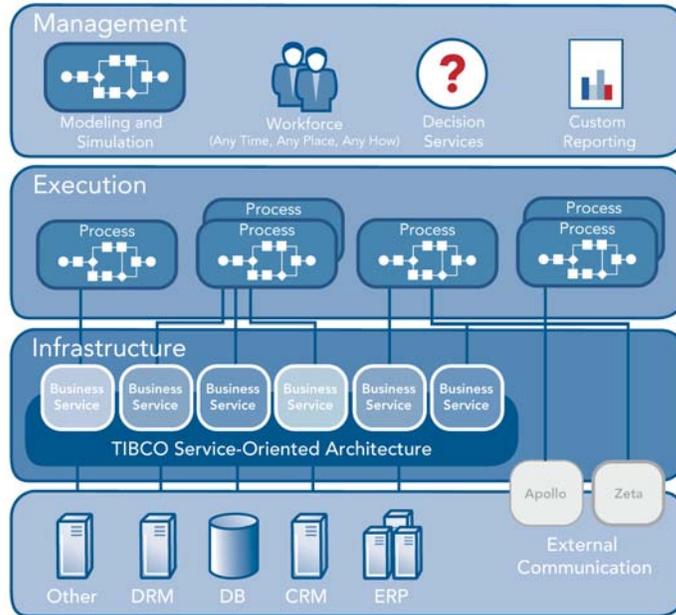
### **KNOWLEDGE CAPTURE AND BPM**

Nearly every federal agency is faced with the challenge to improve the effectiveness and productivity of their organizations despite the attrition of experienced civil servants. This reality affects government contractors as well as federal agencies, as much of the institutional knowledge in large government enterprises can be found in the ranks of integrators. Effective knowledge capture requires a multi-disciplinary approach that includes use of collaboration tools such as an intranet with an easily searchable document repository and BPM to capture (in process models) and automate workflows.

### **HOW DOES SOA RELATE TO BPM?**

Both business process owners and IT organizations have benefited from SOA adoption. IT saves time and money and reduces risk as components that have been tested and proven are reused for new functions. Business process owners can access those components or “services” and incorporate them into their processes without having to understand or interact with the underlying technology. Of perhaps greater value is the ability for IT to modify the services without disrupting the process, and the process owner being able to modify the process without worrying about any disruptions to the underlying systems. The combination of SOA and BPM gives business analysts more control over the construction and modification of their processes without the need for complex technical knowledge. An independent process layer allows business process owners to leverage detailed functional components within their asset base. The combination of rich connectivity options and effective process management is now a reality. This style of building processes is one form of model-driven architecture. Model-driven architecture can vastly improve the process owner’s understanding of the interaction between the independent business process layer and the functional components of an SOA. Component reuse and instrumentation at successively lower levels of a model-driven architecture enhance business visibility and enterprise systems management.

Figure 2. BPM and SOA



## 4. Who Needs BPM?

There are a great many government-to-citizen and government-to-government processes that can benefit from a solid BPM foundation. From case management to intelligence collection and analysis, wherever there is process complexity, volatility, and the need to touch many distinct systems, government agencies can benefit from BPM. The need for information sharing is also driving BPM adoption. Examples are as varied as the electronic filing of tax returns, applying for grants and loans, requesting permits, or competing for federal contracts.

BPM is also helping public sector organizations ensure compliance with regulations, respond to executive and legislative directives, and model process changes relating to outsourcing, system migration, or consolidation.

## 5. Getting Started with BPM

After deciding that BPM holds real value for organizations, process owners and business managers are faced with the challenge of deciding how to get started with an actual BPM project. The first step is to evaluate current processes and identify major characteristics. Forrester Research identifies two major types of processes: Human-centric processes and system-centric processes. Of course, the most complex processes will be those that are both human and system-centric. Human-centric processes are those that predominantly deal with routing of work from one individual to another and support how each person will interact with that piece of work. This type of process does not generally incorporate many systems into the work flow. In system-centric processes there is little human involvement, many transactions, and few exceptions. Most people will look at the two categories and note that their processes fall somewhere in the middle. Business users should establish baseline requirements based on the nature of their processes. When human-centric processes and system-intensive processes are both present in an organization, business users and IT must work together to ensure that whatever BPM suite is selected provides sufficient support for the activities that they wish to be able to accomplish. Then, together, quantitative models can be applied to determine priorities and select the best suite.

## 6. Choosing Your First BPM Project

Deciding to make a fundamental change in the way your organization does business can be one of the most important decisions in a business manager's or executive's career. Business owners should consider identifying a project that can have a major impact on the business: saving money, improving effectiveness, or meeting an important mandate from the Office of Management and Budget or the Office of Business Transformation in the Department of Defense.

There are several factors that should be considered when selecting an initial BPM project:

- High profile does not always equal high risk. The strategic goals of the organization should be central to the selection of the first pilot project. Marginal processes that don't improve effectiveness or increase the level of customer service or mission effectiveness should be given lower priority.

- Select a project that has a high return on investment and has a good chance of being measured accurately. When benefits can be quantified, it is easier to build momentum for subsequent projects.
- Consider how much reuse will result from the effort – not just reuse of business components, but reuse of methods, design practices, team communication, and project reporting techniques.

A successful BPM implementation that has real business impact will allow the organization as a whole to recognize the importance of the new paradigm. This can lead to a fundamental change in the culture of the organization as everyone decides to get on a train that is obviously leaving the station. Talented and ambitious individuals within the organization will see this as an opportunity for advancement. Others will simply follow where others are leading.

## 7. Evaluating BPM Projects

For BPM initiatives, organizations can leverage traditional methods for evaluating the success of a project, including return on investment (ROI), total cost of ownership (TCO), unit cost reduction, improved customer satisfaction, and improved end-to-end process cycle time. BPM has additional, sometimes intangible, benefits to be had. Below are some other recommendations for how to evaluate BPM projects.

- Consider the improved scalability and increased flexibility of instituting a process layer over the underlying business applications.
- Measure user experience. Ensure that the project includes a metrics collection mechanism that can show the effectiveness of the new interfaces. Include a questionnaire as part of the new process. Often, the most valuable feedback is not the positive comments but the constructive criticism from a frustrated end user. And ensure that a positive feedback loop is included to ensure that minor tweaks to improve the process are included in the initial design of the solution.
- Employ operational performance measurement, a mature discipline that can easily be applied to BPM software suites. Measuring BPM effectiveness is critical to the overall project.

- Measurements of effectiveness for business processes should include the agility of the organization over time. This includes the improved cycle time that is often a critical justification for BPM.

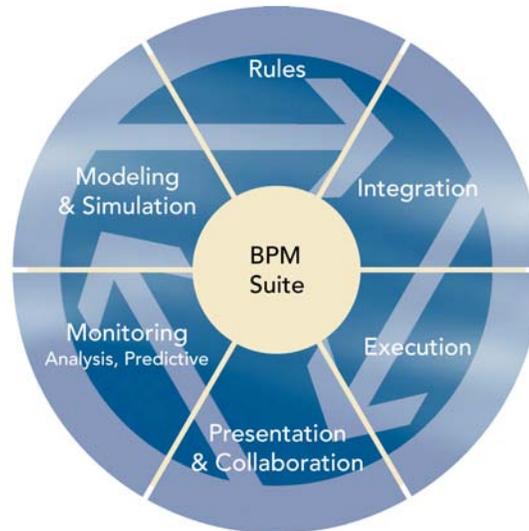
## 8. Evaluating BPM Solutions

Consolidation in the BPM sector is making vendor selection easier as related technologies – enhanced analytics, business intelligence and reporting – and improved integration between the BPM and SOA layers of their infrastructure become more tightly integrated with BPM suites.

An initial analysis of your organization's core business processes will help determine the weight to assign different criteria as you evaluate competing BPM solutions. System intensive processes require strong integration capabilities while human-intensive processes require strong workflow. There are only a few companies that can deliver both of these capabilities. TIBCO Software Inc. (TIBCO) has driven the recent consolidation of SOA and BPM and continues to lead innovation efforts in the convergence between functional components inherent to SOA and enterprise service bus (ESB) solutions and the independent process layer capabilities found in BPM suites.

For government agencies, this means TIBCO can provide broad capabilities in areas such as government-centric and citizen-centric functions. TIBCO's messaging and integration technology provides a technological base that enhances the flexibility and performance of our BPM solutions. Advanced correlation and reporting technology is tightly integrated with BPM giving government enterprises tools that can improve efficiency today and in the future as the technology is applied more extensively throughout the enterprise.

Figure 3. BPM Suite



### SEAMLESS COORDINATION OF SYSTEMS AND PEOPLE

TIBCO is the only company ranked as a leader in both the integration and BPM market assessments by top analysts like Forrester. TIBCO's strength in combining system-centric and human-centric BPM enables organizations to handle the most complex processes, while giving business users a high degree of control over and visibility into processes. TIBCO's BPM software addresses not just the challenges of automation and exception handling, but also the orchestration of sophisticated long-lived activities involving people and systems across organizational and geographical boundaries.

### AGILITY AND FLEXIBILITY

Flexibility is critical to the long-term success of BPM implementations. With features such as dynamic sub-processes, integrated business rules and customized process reports, TIBCO's BPM software makes it easy for organizations to quickly adapt business processes to changing conditions and requirements.

### HIGH PERFORMANCE AND SCALABILITY

Doculabs, a research and consulting firm focusing on technology strategies for document and content applications and processes, was commissioned to perform an objective, thirdparty assessment of the performance of TIBCO's BPM software, particularly its ability to support a very high number of users and transactions within complex process management environments. The tests validated the ability of TIBCO's BPM software to scale to millions of transactions per hour and tens of thousands of concurrent users. The tests further established the resilience and

failover capabilities of the software running in a clustered environment. These results have been borne out in real world scenarios with marquee customers in the telecommunications, finance, and insurance industries.

## 9. Examples of BPM in Government

### **GRANTS.GOV**

The Grants Streamlining Initiative is the government-wide set of organizations and activities responsible for implementing the Federal Financial Assistance Management Improvement Act of 1999. Grants and grant management were duplicated across numerous federal agencies. As part of a government-wide endeavor, PL106-107 mandated centralizing and streamlining business processes and systems. The intent is to develop a government-wide solution to support end-to-end grants management activities. The president's Management Agenda, e-Government initiatives and the Line of Business objectives are improving awareness of how streamlining processes can save taxpayer money; Grants.gov is an example of what can be achieved. Dozens of grant-making agencies are now involved.

### **DEPARTMENT OF DEFENSE CROSS DOMAIN SOLUTION REQUEST PROCESS**

Traditionally, the U.S. Department of Defense has approached the problem of keeping top-secret information separate from sensitive but unclassified data through physically separate multi-level secure networks. Highly classified warfighter information is carried over a third major network system. There are complex processes associated with establishing a connection between these systems and changes to the connection approval process can be quite cumbersome. The need to make information available to warfighters when and where it's needed has increased greatly due to our reliance on information to do everything from move supplies to handle mission planning. In addition, the Joint Chiefs have directed that multi-level security (MLS) systems be utilized to "reduce overall crossdomain solution (CDS) footprint, proliferation of guards, and associated manpower and sustainment requirements." The transition to MLS systems provides a strong incentive to improve on the CDS process so information assurance can be improved without impairing warfighter effectiveness.

Automation of the Cross-Domain Solution (CDS) request process would increase the effectiveness of the individuals who are responsible for approving components of the solution and increase the security and assurance level by

allowing process changes to be made faster and with more transparency for those overseeing the effectiveness of the process.

### **U.S. CENSUS FIELD DATA COLLECTION AUTOMATION**

Every ten years, thousands of our fellow citizens descend on our communities over the course of a few months to conduct a process that ultimately determines aid levels for important federal programs and the level of representation in Congress for our states. Although technology has made the task easier and more accurate, this important task takes years of preparation every time it is conducted and there is always controversy over inaccuracies in the enumeration or failures to manage the process effectively. Lawsuits before the Supreme Court have resulted from previous efforts to count our citizens accurately. In 2010 BPM played an important role in making sure that every residence is accurately identified before enumerators are assigned the task of counting the people who live there. The minute details of each property will be recorded and verified. Workflow software will capture the tasks as they are completed, exceptions will be verified, and corrections will be made. If changes need to be made to the process itself, a flexible process layer will make it easier to adjust individual steps.

## **10. Conclusion**

BPM can be applied to any business process regardless of function, department, organization, or industry. Organizations that are successful in exploiting BPM technology start by solving a specific business process problem with a clear, short-term ROI. This includes government agencies.

Historically organizations have invested large sums of money in systems and applications to support the functions and departments required to run their businesses. Good BPM tools complement existing (and future) investments in applications, content repositories, and integration tools, so there is no need to throw out what already exists. BPM adds an independent process layer to provide a complete view of all the activities necessary to execute a particular business process. It can manage the flow of these activities whether they involve applications, people, or a combination of both.

Broken processes, inefficient processes, and manual processes are often the causes of poor service and inferior performance. Superior business execution depends on addressing these process problems. BPM coordinates all aspects of a process, ensuring that it is executed quickly, accurately, and efficiently.



It manages this execution in a manner that can be tracked (e.g. audited for compliance) and analyzed, so the process can be improved and organizations can achieve continuous process improvement.

## 11. About TIBCO

**TIBCO Software Inc.** (NASDAQ: TIBX) is a provider of infrastructure software for companies to use on-premise or as part of cloud computing environments. Whether it's optimizing claims, processing trades, cross-selling products based on real-time customer behavior, or averting a crisis before it happens, TIBCO provides companies the two-second advantage™ – the ability to capture the right information at the right time and act on it preemptively for a competitive advantage. More than 4,000 customers worldwide rely on TIBCO to manage information, decisions, processes and applications in real time. Learn more at [www.tibco.com](http://www.tibco.com)



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