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## **Enabling Dynamic Business Processes With BPM And SOA**

The Return On Investment Through Operational  
Efficiency And Business Innovation

A commissioned study conducted by Forrester  
Consulting on behalf of IBM



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## Executive Summary

In August of 2008, IBM commissioned Forrester Consulting to conduct a survey of 300 business and IT leaders from the United States and United Kingdom to determine the level of common understanding and alignment between these business and IT groups on key issues related to the impact of their existing applications and process capabilities on operational efficiency and business innovation and how BPM and SOA could improve the overall value of its business processes.

The survey revealed that many key business applications are too inflexible to keep pace with the changing processes that they support, and increasing pressure from a range of domestic and global issues is driving enterprises to acquire new application capability that can support flexible and agile business processes. Forrester calls this new breed of solutions dynamic business applications; applications that support higher levels of collaboration between business and IT and that can be quickly adapted to changing market conditions.

Dynamic business applications are required to support dynamic business processes. Both business and IT leaders agree that the existing set of business applications is a frequent barrier to dynamic processes. The flexibility and agility that enterprises gain from having a foundation of dynamic business applications can enable them to respond more effectively to new challenges and threats on the global scene. Business process management (BPM) and service-oriented architecture (SOA) tools play a key role in enabling the creation of dynamic business applications and dynamic business processes.

The return on investment (ROI) of dynamic business processes can be best understood through two major outcomes: improved operational efficiency (incremental process improvements) and higher levels of business innovation (game-changing new processes).

### *Key Findings*

The survey explored several issues that are discussed in detail in the following sections, including:

1. **IT responsiveness.** Both groups agree that IT responsiveness is generally positive, but they also agree that there is significant room for improvement.
2. **Impact of existing business applications and processes on operational efficiency.** The survey uncovered a significant perception gap between the two groups, with IT believing that the current base of applications was having a greater impact on operational efficiency than the business leaders did.
3. **Current state of operational efficiency.** A high percentage (83%+) of respondents in both groups felt that they had achieved a moderate level of success in the area of operational efficiency but believed that further improvements are still needed.
4. **Barriers to improved operational efficiency.** According to survey respondents from both groups, organizational culture represents the most significant barrier to operational efficiency improvements.
5. **The level of support for business innovation.** There was a high level of agreement between the two groups in this area with 71% of the respondents in both groups indicating that their existing base of business processes and applications provided only limited support for business innovation.

6. **Barriers to improved innovation.** In this section, the respondents identified a number of reasons why the current base of business applications and processes was incapable of supporting innovation more effectively. The number one reason was that the existing business applications are not flexible enough, followed closely by the response that changing the existing business applications was too expensive.
7. **The impact of SOA on IT responsiveness.** The IT leaders were asked about the impact that SOA has had on their operations, and 73% indicated that SOA had resulted in a minimum of 10% to 24% savings in time, 39% said their minimum savings was between 25% and 50%, and 12% indicated that their time savings exceeded 50%.
8. **Main benefits of BPM.** Both business and IT leaders were asked about the benefits of BPM, and some perception differences were revealed on individual benefits. The top three perceived benefits were the ability to optimize business processes, increased productivity of process workers, and the ability to change processes quickly.
9. **Measurement of BPM ROI.** The study revealed that 57% of the enterprises surveyed relied on a combination of targeted business improvements and financial measurements to determine the ROI of BPM projects and only 21% of the enterprises relied solely on financial measurements.
10. **Business metrics for measuring BPM results.** The respondents listed customer satisfaction (71%) and shorter process cycle times (54%) as the primary metrics they used to measure BPM results.
11. **Process modeling.** A significant majority of business respondents indicated that their organization had the ability to collaborate with IT, but this was primarily limited to basic drawing/modeling tools, thus bringing into question the real level of effective collaboration in this area.
12. **Process monitoring.** Only 38% of business respondents indicated that they had any real-time visibility into their key business processes.

Overall, the survey revealed that the respondents have a balanced and practical understanding of how BPM and SOA can improve their ability to implement an environment capable of supporting the creation of dynamic business applications. This is very positive as combined business/IT teams will provide a stronger catalyst for change than either group could on its own.

### *Key Findings From Related Forrester Surveys*

In November of 2007, Forrester conducted a separate survey of over 150 enterprise architects that asked about the results of their early BPM efforts. Two of the key findings of this survey are relevant to this discussion. They are:

1. **The impact of a BPM center of excellence.** The respondents indicated that there was a strong correlation between BPM project success and the existence of a BPM COE.
2. **BPM results versus expectations.** This survey also indicated that enterprises with a BPM COE achieved significantly higher levels of project success.

### Recommendations

This survey revealed that while progress has been made in improving many processes inside of organizations, a lot of work remains to be done. Further, the existing base of business applications is frequently inadequate to support dynamic processes and represents a serious barrier to improved operational efficiency and business innovation. Enterprises need a new business process infrastructure that is capable of rapidly delivering new functionality that is the result of combined business and IT collaboration efforts. Dynamic business applications are the answer to this challenge. Therefore, enterprises should adopt a strategy that supports the creation of dynamic business applications to support key business processes. This requires:

- Identification of the key business processes that must be supported by dynamic business applications.
- Implementation of a collaborative business process life cycle that fully involves combined business/IT teams that encompass all phases of the business process life cycle with a strong emphasis on collaborative design capabilities.
- Acquisition of technology that supports high levels of business and IT collaboration and the flexible support of business process optimization. The technology should have leading edge capability in the following areas:
  - **BPM.** This includes the integrated support to model, execute, monitor, and optimize business processes on the fly. This is a critical feature of dynamic business applications. When making product selections, ensure that the technology supports high levels of collaboration between key business and IT roles.
  - **SOA.** Strong evidence points to the higher levels of enterprise agility that can be obtained by using technology that has a service-oriented architecture foundation capable of supporting the creation and reuse of a wide range of business services. BPM and SOA implementations frequently occur together as these two technologies complement one another and result in a more powerful solution than either could provide on its own.
  - **Model-driven development.** The selected technology should be capable of substituting graphical process modeling features that minimize manual coding requirements. An enterprise registry/repository is a key component of this capability.
  - **Business rules.** The solution should also include the ability to easily create and use business rules for the purpose of supporting automated decision-making related to the execution of dynamic business processes.
- Establishment of a BPM Center of Excellence (COE) to orchestrate the rollout of process improvement efforts as there is a high correlation between the existence of a BPM COE and process optimization success.

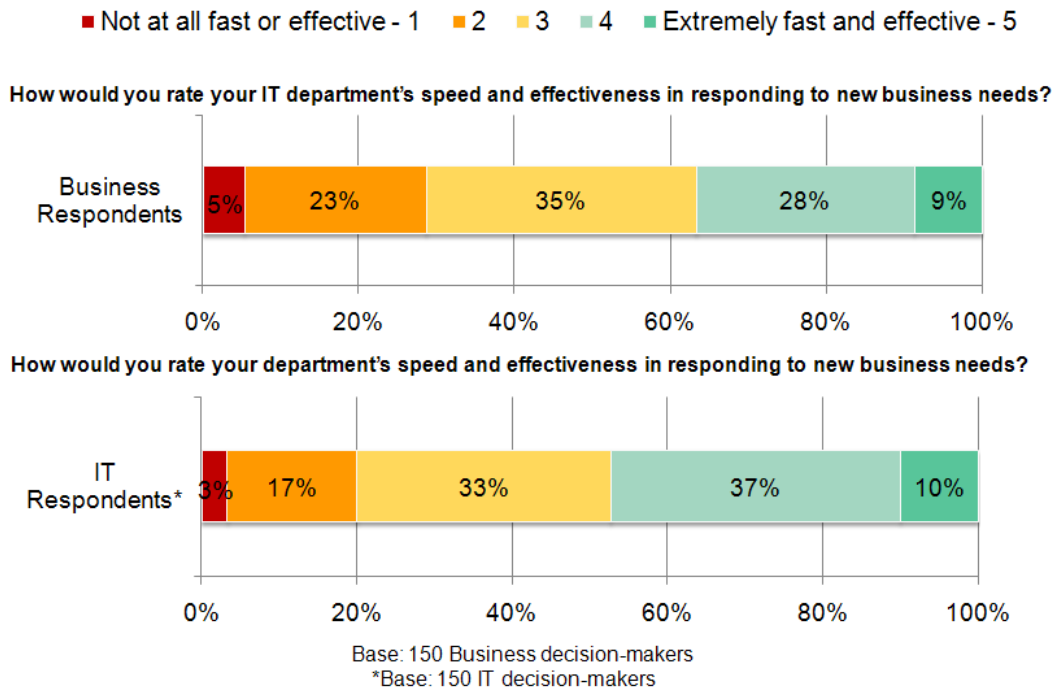
## Key Issues

### IT Responsiveness

The survey revealed that there is a high degree of agreement on the overall effectiveness of IT effort at the extremes. Between 9% and 10% of both business and IT respondents felt that IT was “extremely fast and effective” in responding to new business needs, and between 3% and 5% of both groups also felt that IT was “not at all fast or effective.”

Significant differences appear in the middle. For example, while only 37% of the business respondents (combined scores of 4 and 5) felt that IT was fast and effective, 47% of the IT respondents rated themselves highly in this area (see Figure 1).

**Figure 1: Current State Of IT Responsiveness**



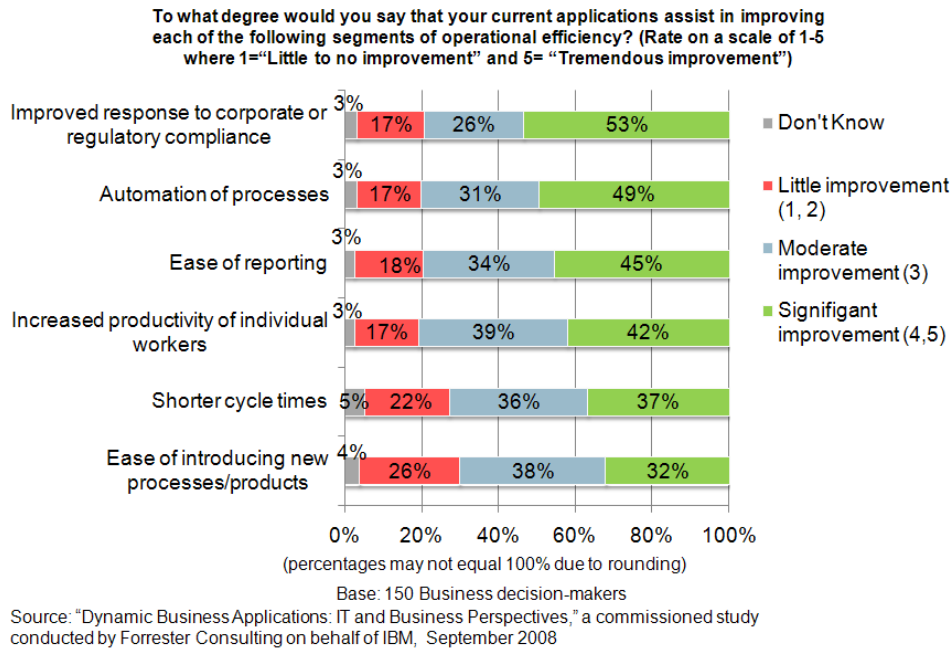
Source: “Dynamic Business Applications: IT and Business Perspectives,” a commissioned study conducted by Forrester Consulting on behalf of IBM, September 2008

These figures point out a significant perceptual difference between how IT sees itself from a responsiveness standpoint and how the business groups perceive IT. IT organizations need to be cognizant of this issue and strive to improve their level of responsiveness whenever opportunities arise.

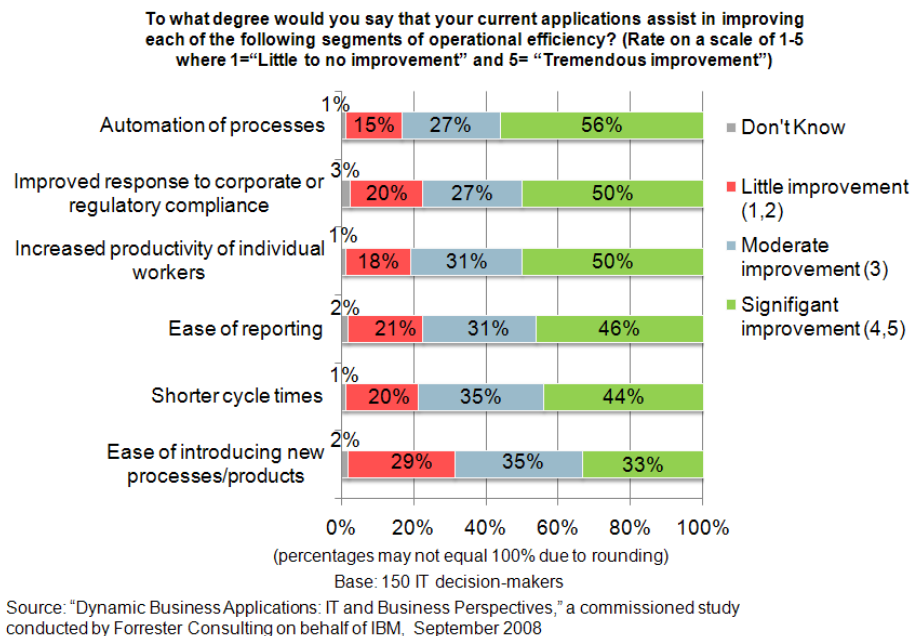
## Impact Of Existing Applications On Operational Efficiency

Operational efficiency can be thought of as incremental process improvements that lead to benefits like increased productivity of workers, shorter process cycle times, and higher levels of process automation. Business and IT respondents were asked to rate the impact of their existing applications on efforts to improve operational efficiency (see Figures 2 and 3).

**Figure 2: Business’s Perceived Effect Of Current Applications On Operational Efficiency**



**Figure 3: IT’s Perceived Effect Of Current Applications On Operational Efficiency**

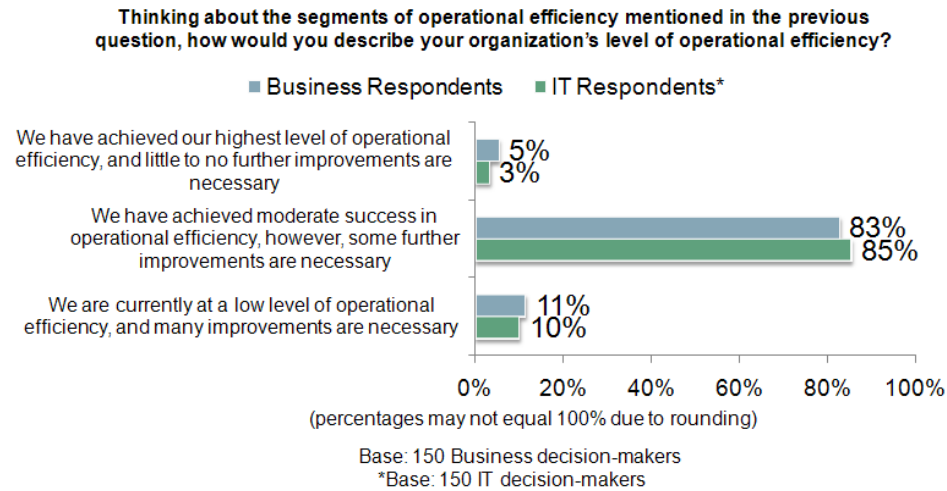


As these figures show, there was relative agreement between the two groups on most of the issues that were explored. Both business and IT groups rated their current applications positively in the areas of automation of processes, improved response time to corporate or regulatory compliance, ease of reporting, and increased productivity of process workers. However, a significant portion of the respondents (between 15% and 29%) also indicated that the results in these areas were not adequate. This indicates a need for higher levels of achievement than that which the current base of applications can provide.

## Current State Of Operational Efficiency

Business and IT respondents were asked to provide their thoughts on their current state of operational efficiency. They were specifically asked to describe their organization's level of operational efficiency related to the specific issues identified in the previous section (see Figure 4).

Figure 4: Current State Of Operational Efficiency



Source: "Dynamic Business Applications: IT and Business Perspectives," a commissioned study conducted by Forrester Consulting on behalf of IBM, September 2008

Again, there was a high degree of agreement on the part of both business and IT roles in response to this question. Both sides (83% to 85%) felt that while moderate levels of operational efficiency success had been obtained, further improvements were still necessary. Another 10% to 11% felt that the operational efficiency improvements had not been adequate. This is additional confirmation that the current base of applications inside of these enterprises is not performing adequately.

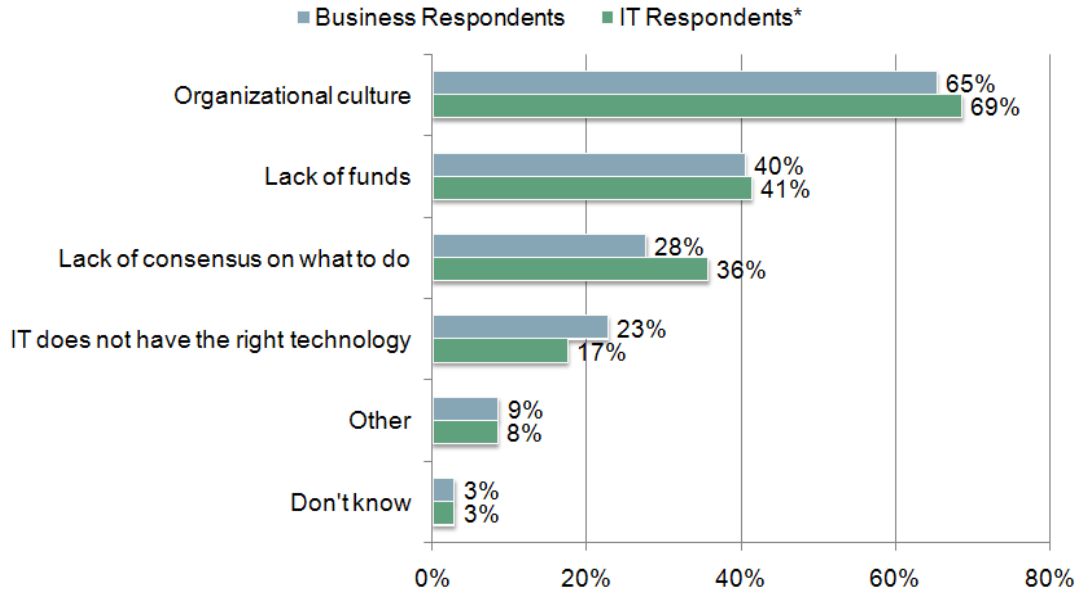


## Barriers To Improved Operational Efficiency

In an effort to obtain more detailed information on key issues related to operational efficiency, the respondents were asked to identify the key issues that were preventing additional improvements in this area (see Figure 5).

Figure 5: Barriers To Improved Operational Efficiency

In your opinion, what is preventing additional improvements in operational efficiency? (select all that apply)



Base: 150 Business decision-makers  
 \*Base: 150 IT decision-makers

Source: "Dynamic Business Applications: IT and Business Perspectives," a commissioned study conducted by Forrester Consulting on behalf of IBM, September 2008

Both business and IT roles were adamant in responding that organizational culture is by far the biggest barrier to improved operational efficiency inside enterprises. Resistance to change can be rampant in many organizations, and teams charged with making improvements have to address organizational culture issues up front or run the risk of project failure. One of the most successful ways of dealing with these types of issues has been the implementation of BPM Centers of Excellence (COEs). This concept is discussed further in the "Key Findings Of Related Surveys" section of this document (page 20).

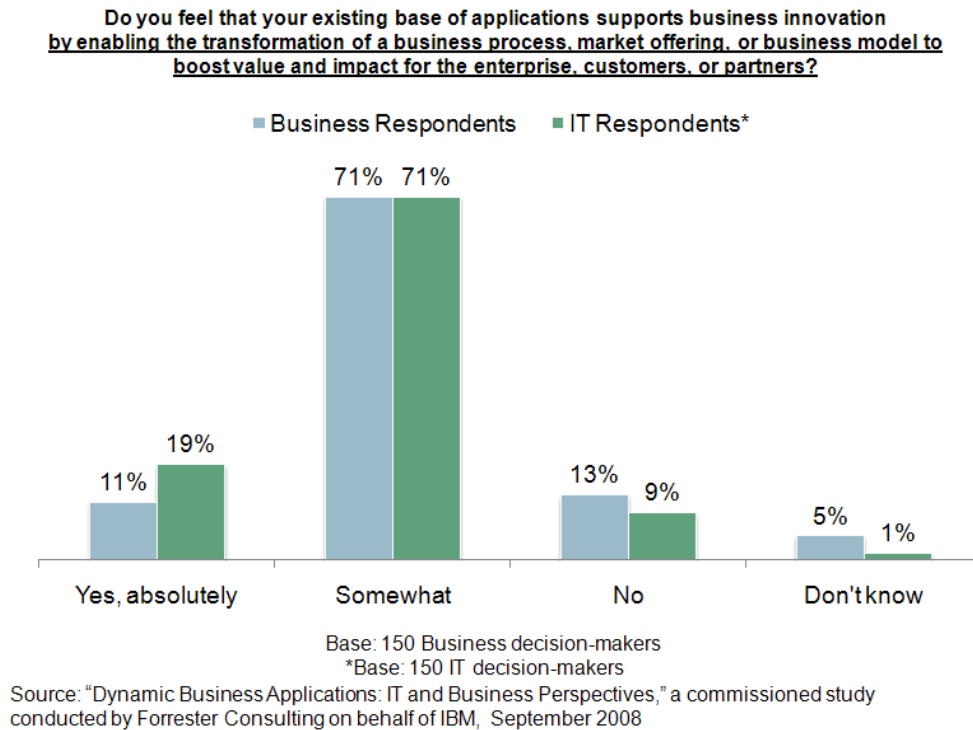
Other significant barriers include lack of funds, lack of consensus on what to do (again, the BPM COE can help with this), and the lack of appropriate technology.

## Impact Of Existing Applications On Business Innovation

The ability of BPM tools to support business innovation is the other side of the BPM benefit equation. Efforts to support innovation are significantly different than those targeting operational efficiency in that they don't deal as much with improving existing business processes as they do with creating totally new ones that are designed to leapfrog the status quo and give the enterprise a competitive edge.

The respondents were asked about the impact their existing applications have on their ability to support higher levels of business innovation (see Figure 6).

**Figure 6: Impact Of Existing Applications On Business Innovation**

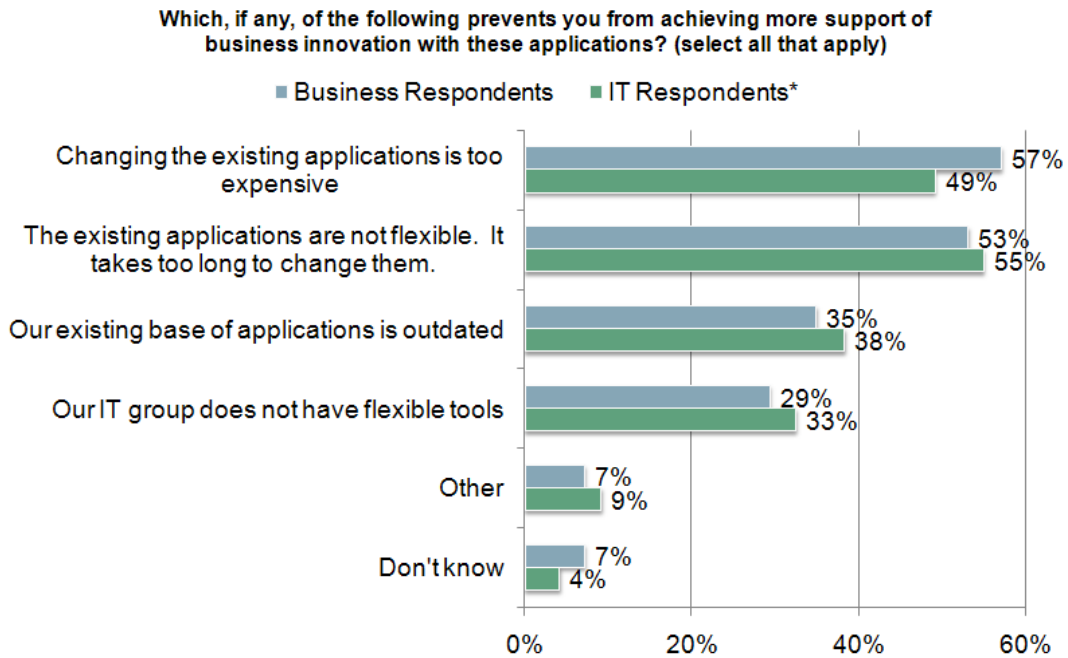


Only 11% of the business respondents and 19% of the IT respondents felt that the existing applications provided good support for business innovation. Seventy-one percent of both groups felt that the existing applications were only "somewhat" supportive of business innovation efforts. Similar to the situation related to operational efficiency, the current base of applications has serious limitations in the area of business innovation as well.

## Barriers To Improved Support For Business Innovation

This question gets to the core of the problem that the previous question highlighted. The respondents were asked to provide their thoughts on why their current base of applications did not do a better job of supporting business innovation (see Figure 7).

Figure 7: Barriers To Improved Support For Business Innovation



Base: 150 Business decision-makers

\*Base: 150 IT decision-makers

Source: "Dynamic Business Applications: IT and Business Perspectives," a commissioned study conducted by Forrester Consulting on behalf of IBM, September 2008

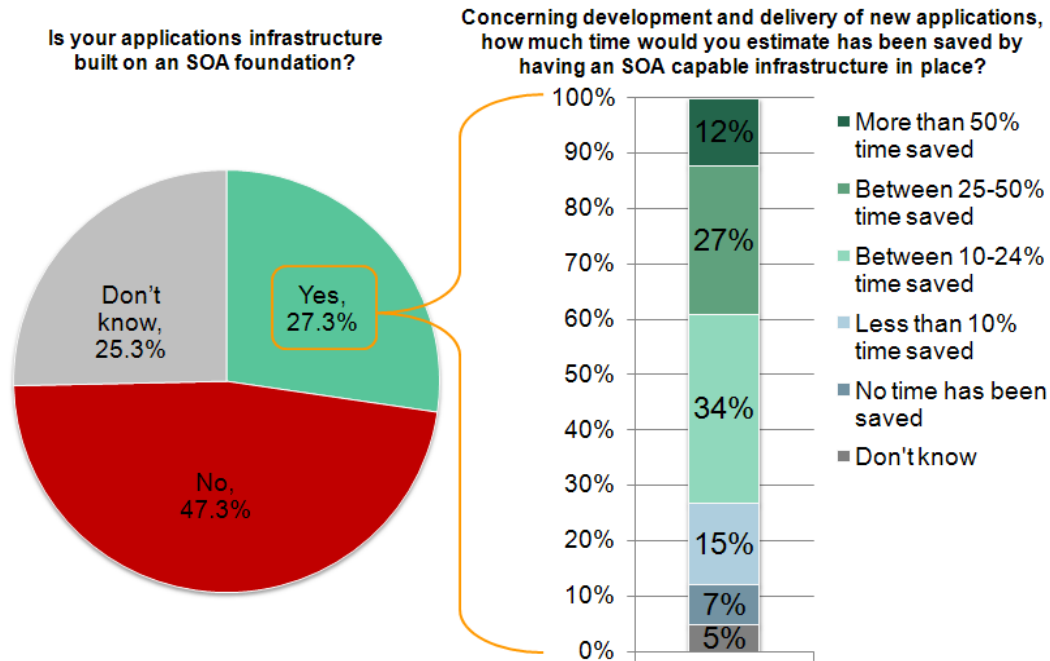
The top two responses are flip sides of the same coin. The respondents agreed that changing the existing applications is too expensive, and it takes too long to make any changes. If a way existed to change applications faster (i.e., flexible dynamic business applications) the cost to do so would be lower. This is the real value proposition that dynamic business applications brings to the table.

The other two barriers that were identified (outdated applications and lack of flexible tools) can also be directly dealt with through the implementation of technology capable of supporting dynamic business applications and can be implemented incrementally to specific pain points or areas of prioritization.

## The Impact Of SOA

The respondents were asked about their current usage of SOA and how this impacted development time (see Figure 8).

**Figure 8: The Impact Of SOA On Applications Development Efforts**



Base: 150 IT decision-makers

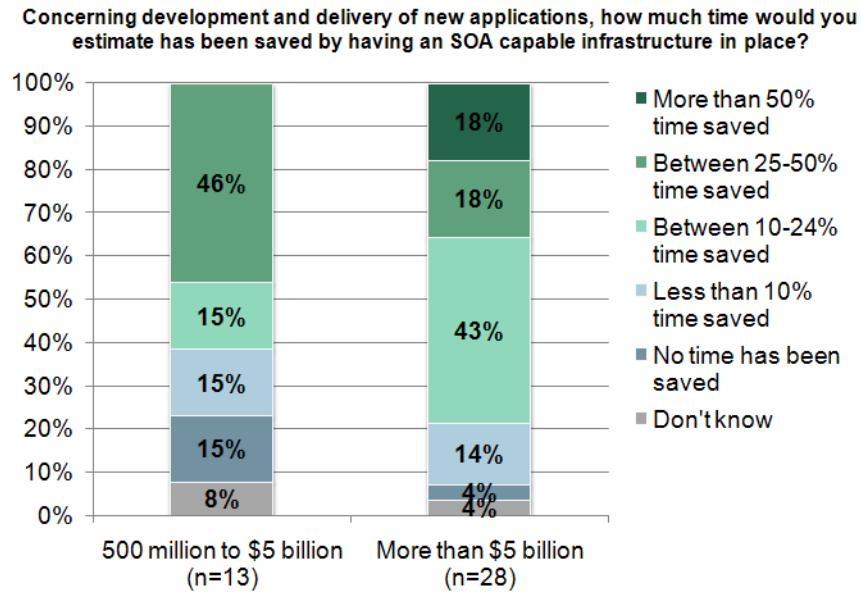
Source: "Dynamic Business Applications: IT and Business Perspectives," a commissioned study conducted by Forrester Consulting on behalf of IBM, September 2008

Only 27% of the IT respondents stated that they were using a foundation of SOA. Almost half are not. However, among those with the SOA foundation, the impact on applications development time is dramatic. Over 70% of the respondents responded that they had saved more than 10% of their normal development time, with 39% indicating that they had achieved savings in excess of 25% and 12% indicating they had saved more than 50% of their typical applications development time by having an SOA foundation in place.

This information provides clear insight into how enterprises can effectively address the barriers to business innovation represented by their current base of business applications. Obtaining technology that supports the creation of dynamic business applications through the use of BPM and SOA needs to be a key enterprise priority.

The previous response was further broken down by company size to allow for more detailed analysis of the data. Specifically, the 41 enterprises that were using SOA were broken down further into less than \$5 billion in revenue (13 enterprises) and more than \$5 billion in revenue (28 enterprises) (see Figure 9).

Figure 9: Estimated Applications Development Time Savings By Size Of Enterprise



(percentages may not equal 100% due to rounding)

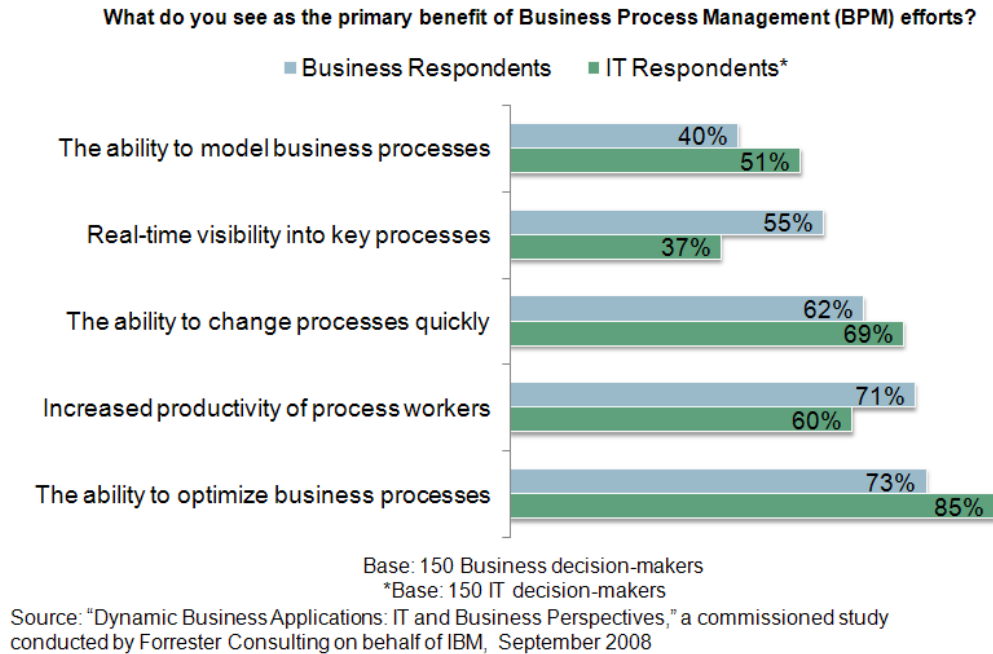
Base: 41 IT decision-makers whose organization's infrastructures are built on an SOA foundation  
 Source: "Dynamic Business Applications: IT and Business Perspectives," a commissioned study conducted by Forrester Consulting on behalf of IBM, September 2008

This chart shows that 61% of enterprises with less than \$5 billion in revenue were receiving reduced application development time (responding 10% or more time saved) via SOA compared to 79% of the larger enterprises. This makes sense when you consider that larger firms were the first to utilize SOA, and they have likely developed higher levels of expertise in this area than the smaller firms have. Also noteworthy is the fact that the larger firms had the most success with development savings in excess of 50% time saved.

## The Benefits Of BPM

Both business and IT roles were asked to identify the primary benefits that they were receiving from BPM implementations (see Figure 10).

Figure 10: The Benefits Of BPM



The number one benefit for both groups was the ability to optimize business processes, though the IT respondents rated this point significantly higher (85%) than the business roles did (73%). This once again points out the value proposition of comprehensive dynamic business applications technology that supports both BPM and SOA. Increased worker productivity and the ability to change processes quickly were also perceived to be significant benefits.

The most significant difference of opinion between the two groups was revealed on the value of real-time visibility into key processes. Business roles indicated this was a valuable benefit (55%), but IT roles tended to downplay its importance (37%). This is a blind spot for IT that reflects a lack of understanding of the level of importance of this issue to business users. Process monitoring capability is explored further in the "Process Monitoring" section of this document (page 19).

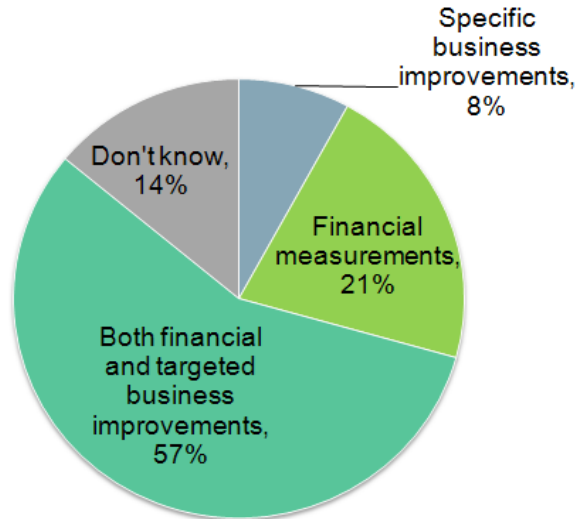
A similar level of disparity was displayed on the issue of the value of process modeling. Business roles tended to downplay its importance (40%) while IT roles felt that it provided more benefits (51%). The issue of process modeling will also be explored in more detail later in this report.

## Measuring BPM ROI

The ability to measure the ROI of BPM projects is crucial for both justifying the initial investment and expansion of follow-on efforts. Business and IT respondents were asked to provide details of how their enterprises address this issue (see Figure 11).

Figure 11: Measuring The ROI Of BPM

How does your organization measure the ROI of BPM projects?



Base: 300 Business and IT decision-makers

Source: "Dynamic Business Applications: IT and Business Perspectives," a commissioned study conducted by Forrester Consulting on behalf of IBM, September 2008

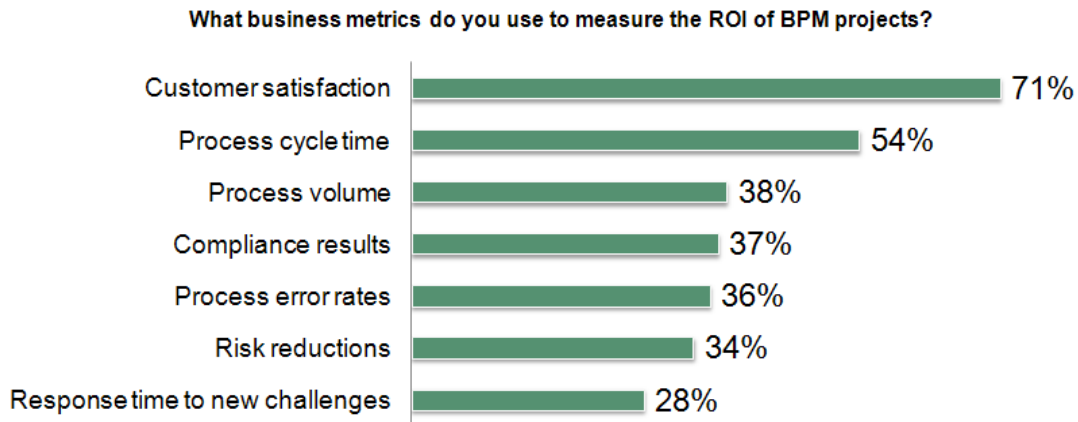
According to the respondents, the majority of enterprises (57%) use a combination of financial and targeted business improvements to measure the ROI of BPM efforts. This could be due to the relative immaturity of BPM efforts in many enterprises that have not yet devised an accurate way of measuring the results financially.

Another 21% of the respondents indicated that they use only financial measurements, and 8% indicated that they use only specific business improvements to measure BPM ROI. As mentioned earlier, businesses can see the significant impact of their efforts through time saved and doing more with less budget even if they do not have a comprehensive set of metrics to report.

## Metrics For Measuring Non-Financial ROI Of BPM Projects

Since such a large percentage of firms rely to a degree on non-financial BPM ROI measurements, it is important to understand this area better. The respondents were asked to provide details on what non-financial measurements they currently use (see Figure 12).

Figure 12: Common Metrics For Measuring The ROI Of BPM



Base: 194 Business and IT decision-makers who use specific business metrics to measure benefits of BPM projects

Source: "Dynamic Business Applications: IT and Business Perspectives," a commissioned study conducted by Forrester Consulting on behalf of IBM, September 2008

The most widely used non-financial measurement is customer satisfaction (71%). In other words, if an enterprise improves the delivery of products or services to the end customer via a BPM project, customer satisfaction levels (along with customer loyalty) should rise. However, this is difficult to directly measure.

It is much easier to measure the second most common metric: process cycle time improvements. Fifty-four percent of the respondents indicated that this was one of the key measurements that they used to measure non-financial ROI.

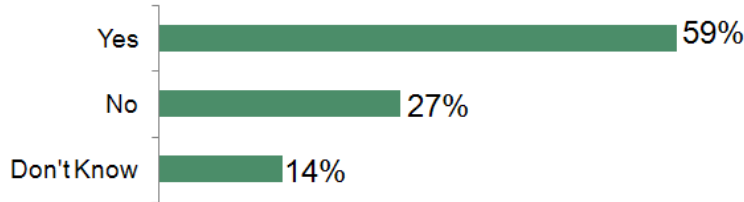


## Process Modeling Capability Lags

As indicated earlier, the ability for business and IT to collaboratively model business processes is one of the primary benefits that BPM tools provide. The business respondents in this survey were asked about the extent of their process modeling capability (see Figures 13).

**Figure 13: Business User Process Modeling Capability**

Do business users in your organization have the ability to collaborate effectively with IT in the creation of a graphical representation of the business process (i.e. a process model)?



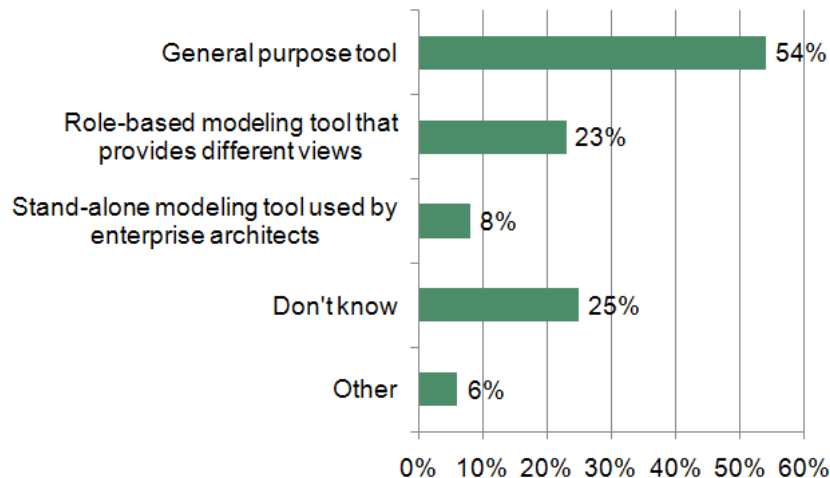
Base: 150 Business decision-makers

Source: "Dynamic Business Applications: IT and Business Perspectives," a commissioned study conducted by Forrester Consulting on behalf of IBM, September 2008

These responses point toward a generally positive situation with almost 60% of the business users stating that they are able to effectively collaborate with IT on the creation of graphical process models. However the accuracy of this assessment comes into question when the following information is added into the mix (see Figure 14).

**Figure 14: Process Modeling Tools That Business Uses**

What technologies are used to support the creation of process models for new applications? (select all that apply)



Base: 150 Business decision-makers

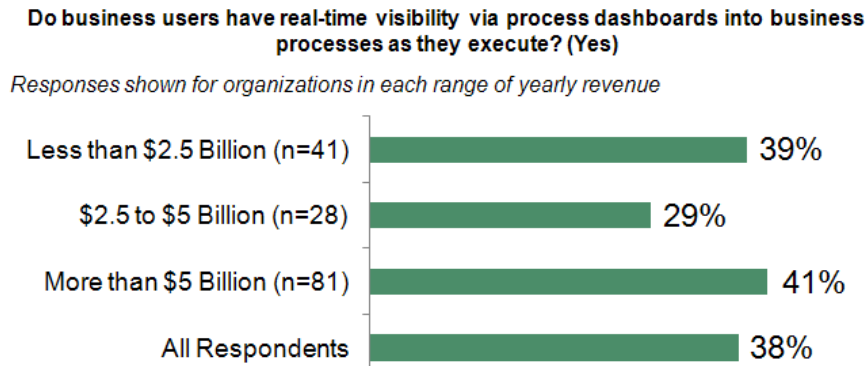
Source: "Dynamic Business Applications: IT and Business Perspectives," a commissioned study conducted by Forrester Consulting on behalf of IBM, September 2008

The fact that over half of the business respondents were limited to using basic drawing/modeling tools for process modeling puts a different perspective on the issue. True, business users can create graphical representations of business processes with these tools, but the resulting pictures cannot be directly fed into higher level modeling tools that support analysis of the impact on key metrics and direct interpretation of the models into executable code. Consequently, we have to question the real ability for business users to effectively collaborate with IT on process modeling when these are the only tools being used.

## Process Monitoring

The ability for business users to have real-time, customized process monitoring for key processes was another key BPM benefit area referred to earlier by both business and IT roles. This question was asked of all business respondents (see Figure 15).

**Figure 15: Process Monitoring Features Are Not Currently Widely Used**



Base: 150 Business decision-makers

Source: "Dynamic Business Applications: IT and Business Perspectives," a commissioned study conducted by Forrester Consulting on behalf of IBM, September 2008

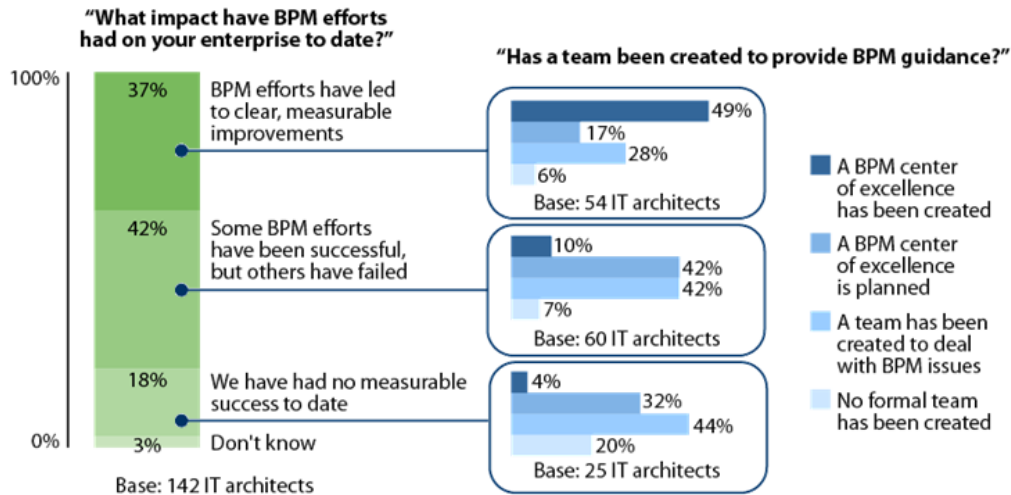
As the chart shows, only 38% of business respondents have real-time process monitoring in place today. The fact that so few business users have this capability today is surprising, considering the high level of interest it garners.

## Key Findings From Related Surveys

### Centers Of Excellence Are The Secret Sauce For BPM Success

Forrester Research conducted a survey of over 160 enterprise architects in November of 2007. This survey targeted enterprise architects from enterprises in the U.S. and UK and asked many questions related to BPM implementations. One of the key areas that was explored was the impact of BPM COEs on project success (see Figure 16).

**Figure 16: The Impact Of Centers Of Excellence On BPM Project Success**



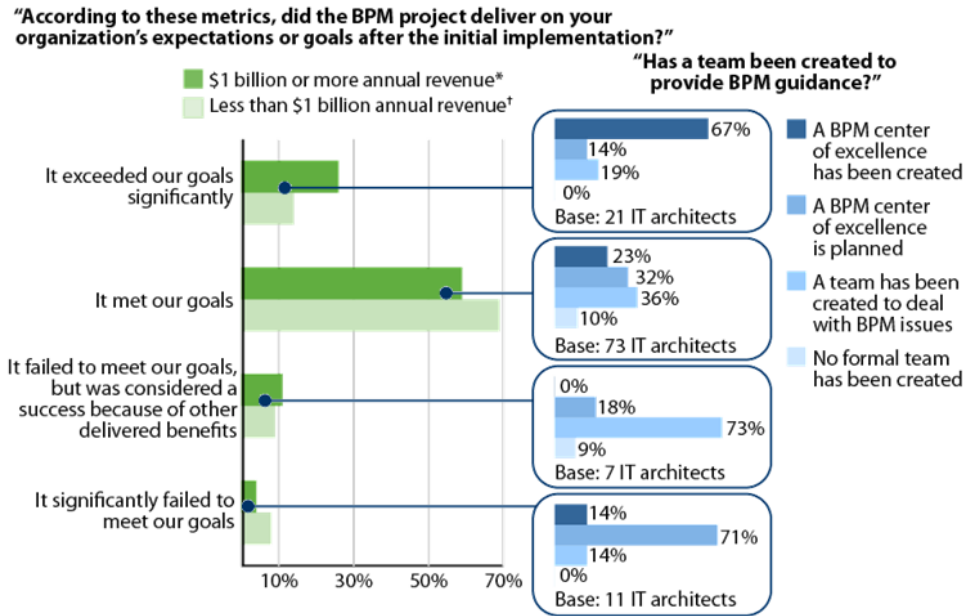
Source: October 2007 US and UK Enterprise Architecture and Business Process Management Online Survey, Forrester Research Inc.

A close look at Figure 16 provides dramatic evidence of the value of a BPM center of excellence (COE) in contributing to the higher levels of success of BPM efforts. For example, almost half (49%) of the enterprises that reported clear and measurable benefits from their BPM efforts had a BPM COE in place; only 10% of the group reporting mixed results had a BPM COE in place; and 4% of the group reporting no BPM success had a COE in place.

In addition, BPM project performance related to enterprise goals also appears to be directly linked to the availability of a BPM COE. Specifically, 67% of the enterprises that reported their BPM efforts significantly exceeded their goals had a BPM COE, and only 14% of the enterprises that reported no BPM project success had a BPM COE (see Figure 17).

Clearly, while a BPM COE may not be a panacea for BPM success, having one in operation significantly increases the odds of BPM success.

Figure 17: Results Versus Expectations When A BPM COE Is In Place



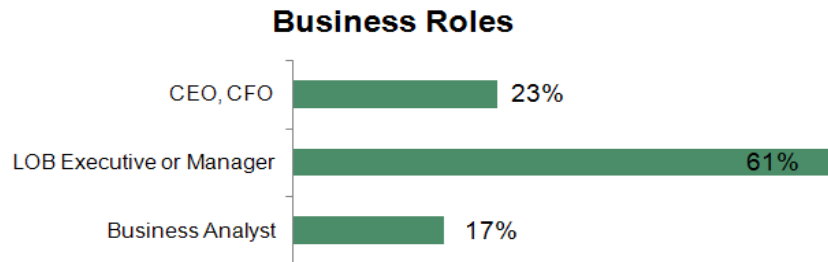
Source: October 2007 US and UK Enterprise Architecture and Business Process Management Online Survey, Forrester Research, Inc.

## Appendix A: The Survey Respondents

### Roles

Forrester Consulting surveyed 300 business and IT leaders from key roles. The business roles consisted of the following titles:

- Business executives responsible for overall business performance, compliance, and governance (CEO, CFO).
- Line of business executive or manager responsible for performance of a specific LOB.
- Business analysts responsible for serving as a liaison with IT.

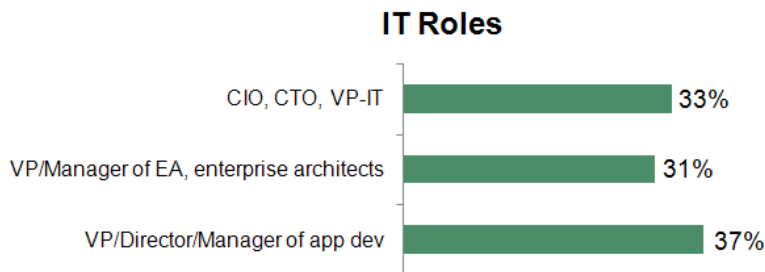


Base: 150 Business decision-makers

Source: "Dynamic Business Applications: IT and Business Perspectives," a commissioned study conducted by Forrester Consulting on behalf of IBM, September 2008

The IT roles consisted of the following titles:

- Senior executive of IT responsible for the delivery of technology solutions that support the business (CIO, CTO, VP-IT).
- IT architect responsible for provisioning of IT services that focus on meeting business needs in the most efficient manner (VP/Manager of architecture, enterprise architect)/
- IT developer responsible for the creation of application functionality based on input from business analysts and enterprise architects.

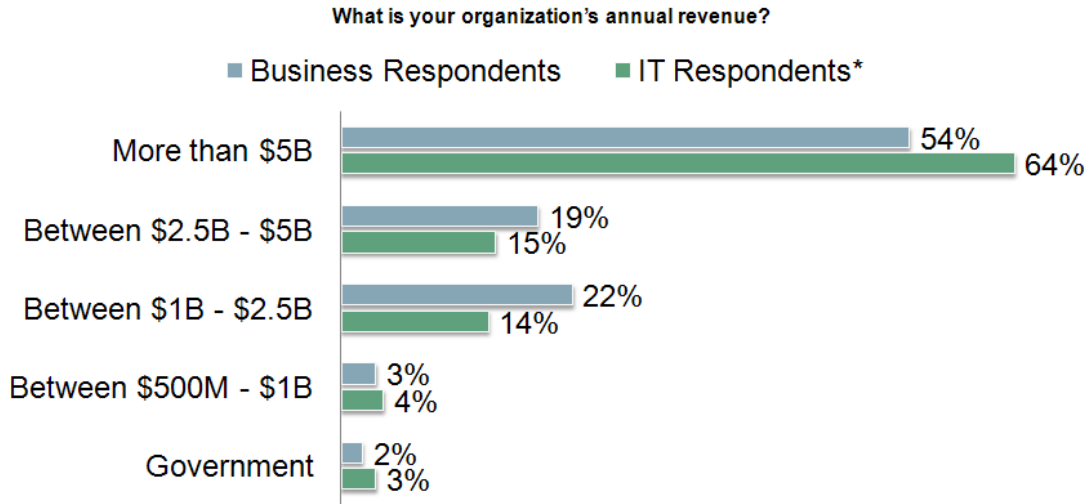


Base: 150 IT decision-makers

Source: "Dynamic Business Applications: IT and Business Perspectives," a commissioned study conducted by Forrester Consulting on behalf of IBM, September 2008

## Enterprise Size By Respondent Roles

The survey captured data on the size of the enterprises of the respondents and broke this down into five main groups as shown in the following chart:



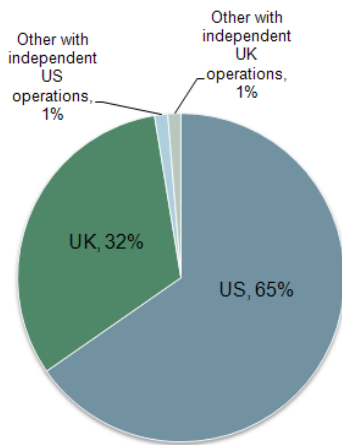
Base: 150 Business decision-makers  
 \*Base: 150 IT decision-makers

Source: "Dynamic Business Applications: IT and Business Perspectives," a commissioned study conducted by Forrester Consulting on behalf of IBM, September 2008

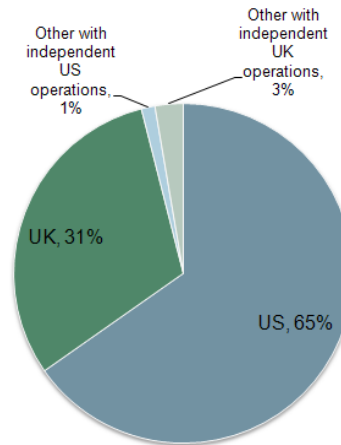
As the chart indicates, there were a large number of responses from enterprises with more than \$5 billion in revenue. However, there were also a statistically significant number from respondents with annual revenues between \$2.5 and \$5 billion as well as the group with revenues between \$1 and \$2.5 billion.

## Respondents By Country

Business Respondents



IT Respondents\*

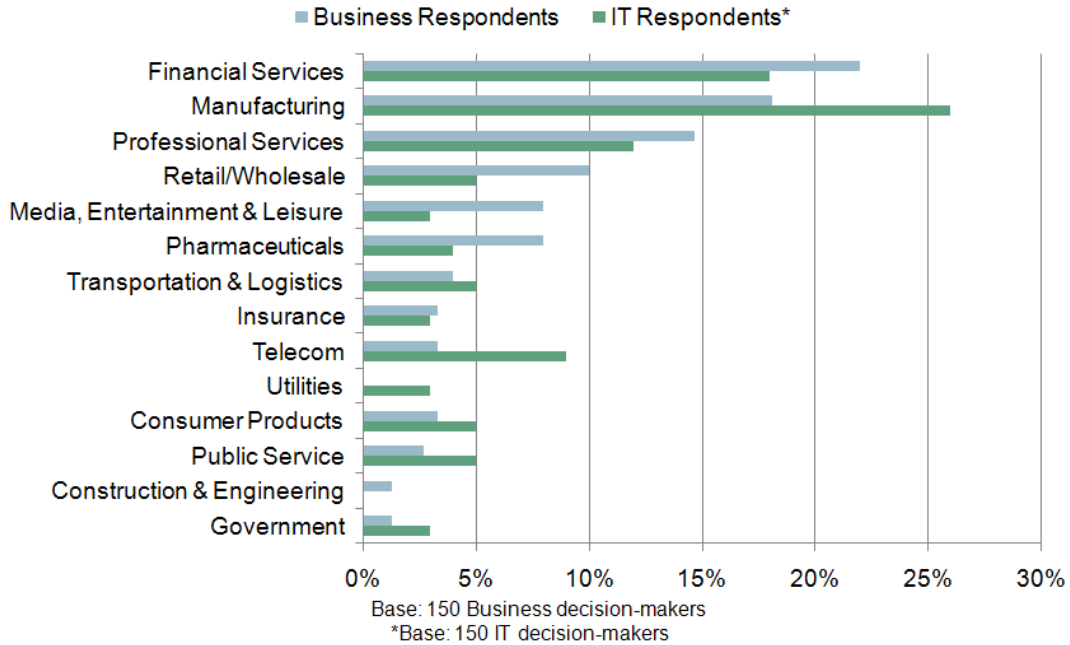


(percentages may not equal 100% due to rounding)

Base: 150 Business decision-makers  
 \*Base: 150 IT decision-makers

Source: "Dynamic Business Applications: IT and Business Perspectives," a commissioned study conducted by Forrester Consulting on behalf of IBM, September 2008

## Respondents By Industry



Source: "Dynamic Business Applications: IT and Business Perspectives," a commissioned study conducted by Forrester Consulting on behalf of IBM, September 2008