

8

Examining the Future of Business Process Performance

There may come a time when “good enough” simply isn’t.

—Richard N. Katz

So far, this study has examined the ways in which colleges and universities approach administrative business processes and how they use technology to support those processes. This chapter examines the approaches and technologies institutions have adopted to improve business process performance, and then discusses some emerging cross-industry trends and how these may impact future efforts to improve process performance in higher education.

Today’s Approaches

An organization can undertake business process improvement to achieve a number of different results. These include, but are not limited to, the results described in Table 8-1.

In this study, we learned that on the whole, higher education organizations have not optimized their administrative business processes. Most institutions that responded to our survey indicated an acceptable, but not exemplary, level of performance. In many cases, the decision to settle on good enough is a rational decision, as some processes do not, by their nature, require above-average performance. However, many institutions have not optimized important processes, and numerous institutions ranked some of their

administrative processes as at risk. Only 16 percent of respondents indicated diminishing returns, meaning that processes work well enough and efforts at improvement were not worth the expenditure. This suggests further that institutions still have significant room for improvement.

This doesn’t mean that colleges and universities have ignored process performance. Many institutions have been through one or more waves of business process reengineering; total quality management, Six Sigma, or other process improvement initiative. Others have taken a technology-driven approach, choosing to use the implementation of a new technology, such as an ERP system, to instigate process change. These initiatives have yielded mixed results. Process improvement programs can render encouraging results, but when implemented without accompanying technology improvements, these results can be difficult to sustain. A technology-based approach can introduce an overwhelming degree of change to the organization, and it can be expensive and time-consuming. As we learned in ECAR’s study of ERP implementations, (Kvavik et al., 2002) many organizations experienced a loss of productivity for up to a year after the system was introduced, as staff slowly adapted

©2005 EDUCAUSE. Reproduction by permission only.

Table 8-1. Results of Business Process Improvement

Desired Result	Definition	Example
Efficiency	Doing the same thing cheaper or faster	Reducing the time to process a financial aid application
Effectiveness	Doing the same thing better, introducing higher quality or higher value	Reducing the number of errors during financial aid processing
Risk avoidance	Reducing risk to the institution, such as through better management information or better controls	Reducing financial exposure by tightly integrating budget and financial systems
Customer satisfaction	Doing things that make students, faculty, staff, and other constituents happier with institutional services	Introducing self-service capabilities for common student and employee transactions
Cost avoidance	Doing things that allow the institution to avoid future expenditures	Designing processes to scale without the need to add employees, often through the use of technology
New capabilities	Adding new services that were not available before the improvement	Allowing a student to handle any student services transaction at any student-facing office, rather than having to go to multiple places

to the change introduced. Even when such an approach succeeds, it can be difficult to introduce additional change later without significant time and expense.

Some institutions have implemented alternative organizational models with good result. One such model is shared services, in which a single center is established to service multiple customers. Shared services can be deployed internally in a large, complex organization, or they can be set up to cross organizational boundaries, allowing multiple organizations to share resources, costs, and benefits. Examples of internal shared services organizations include one-stop student services centers, which colocate and cross-train student services departments (such as the offices of the bursar, registrar, and financial aid) to provide high-quality customer service, often with improved efficiency. Such centers are in place at many institutions today, and are often supported by self-service, ERP, and customer relationship management (CRM) technologies.

Another common target of shared services, both internally and externally, is the IT function. A case study written in conjunction with the ECAR ERP study profiled several shared approaches to implementing ERP. (Caruso and King, 2002) One case study investigated the well-known common management systems project run by the California State University system for its 23 campuses, an internal shared-service function that provides hosting and shared management of the university's PeopleSoft applications. (Caruso and King, 2002) Another ECAR case study written in conjunction with the outsourcing study, profiled the Associated Colleges of Central Kansas (ACCK), a consortium created by six small colleges in 1966 (Hassett and Kancheva, 2002) to share the cost of developing IT services. IT shared services functions, whether internal or external, provide a number of benefits to their member organizations, including reduced costs, introduction of new capabilities, risk avoidance, and increased effectiveness. As a part of this study, specific

process improvement endeavors at Iowa State University and The City University of New York have been written about in depth in separate case studies.

Shared services can be one effective way to reduce costs, lessen risk, and provide services that might be unattainable by an individual department or institution. This approach is not without challenges. First and foremost is that in order to implement a shared services model, consensus must be reached on the business model and processes that will be used, as well as the financial model, the supporting technologies, and the staffing. And once the shared service has been implemented, strong governance is necessary to keep it operating effectively. The consensus nature of shared services does not lend itself to agile business performance, because it is difficult for one member to request changes without impacting—perhaps negatively—the utility of the service for other members. As this study reveals, business processes that invoke broad political engagement and low strategic impact tend to not be great candidates for reform.

Another strategy available to institutions is business process outsourcing (BPO). In this approach, selected business functions are turned over to an external provider to manage, either to provide a cost advantage or because the provider has greater expertise in managing that function than the institution. Higher education has traditionally used BPO in selected areas such as food services, facilities management, and bookstores, areas in which such companies as Aramark, UNICCO, and Barnes & Noble have been enlisted to manage these processes on campuses around the country.

However, higher education has traditionally been reluctant to outsource its administrative processes. Even in areas like payroll, where many businesses have outsourced to providers like ADP, many colleges and universities (partly due to the complexity of faculty compensa-

tion) continue to manage their own payroll functions. If higher education chooses to follow the trends begun in other industries, functions such as call center management, benefits administration, and financial aid processing may be turned over to outside providers. The University of California, for example, recently hired a private firm to manage retirement plan account administration. But this approach is not without risk. In today's environment, it is difficult to seamlessly incorporate such external services into an institution's operations, and difficulties resulting from systems integration and unaligned processes can degrade customer service.

Higher education has also introduced a number of administrative technologies in an effort to improve the performance of business processes. The most significant of these is ERP systems. Implementing ERP systems provided significant benefits to many, although not all, colleges and universities. ERP systems, provide a common repository for administrative data; speed the processing of transactions; allow the distribution of tasks to individual employees, and allow integration of data across multiple parts of the organization. ERP systems (or homegrown systems with similar functionality) serve as the foundation of today's administrative organizations in higher education. However, ERP systems are in some ways limiting. At installation, they allow flexibility in configuration, but once in place, making changes is a difficult and expensive proposition. Similarly, customizing ERP systems to conform to an institution's business processes generates significant expense both during the implementation and over the ongoing life cycle of the product, causing many organizations to conform their processes to the way the software works. Also, ERP systems are, at their core, transaction processing systems, and higher education, for the most part, is not a transaction-driven business.

Many institutions have realized that while ERP systems are a useful foundation, the value is not in the transaction itself, but in the information provided by the transaction. These institutions have deployed a variety of analytical environments, including data warehouses; reporting packages; and online analytical processing (OLAP) tools to provide their users with the ability to better understand their business. These tools can provide valuable information, and can be used for a range of purposes from better transactional reporting, to analytics, to identification of at-risk students. But they too have issues. Many reporting, modeling, and decision-support tools are difficult for non-IT staff to use. And, there is often a time lag before information from the institution's transactional systems makes it into the data warehouse or OLAP environment, limiting the usefulness and capabilities of these tools for real-time management of the institution.

Higher education has been moving forward with process and technology changes that have resulted in increased efficiency, enhanced effectiveness, better customer service, and other benefits to institutions. However, as reported by our respondents, these efforts have not resulted in optimized processes at most institutions. And the target continues to move, even as these efforts continue.

The Changing Environment

Historically, higher education has operated in a slowly changing environment. The core pillars of teaching and research upon which the institutions were built have not departed far from their foundation, even as over the years other industries have undergone rapid and considerable change. Because of its relatively stable and insulated nature, higher education has been able to make steady, incremental improvements in administrative processes, but it has been spared the relent-

less pressure to change faced by organizations in other sectors. That situation, however, is beginning to change.

First, many segments of higher education have—despite very challenging times—been protected from revenue pressure by favorable demographics (the pipeline) and the preeminence of U.S. colleges and universities as “exporters” of higher education. By 2013, demographers forecast the high school graduation of the last class of “echo boomers” and it is evident that declining demand and rising visa restrictions are diminishing the number of foreign students wishing to study in the U.S. The changing enrollment dynamics will increase competition to enroll students intelligent enough to complete postsecondary education, and wealthy enough to pay for it.

Another factor driving institutional change since 2001 is cost pressure. Institutions often react to short-term cost pressures with tools like hiring freezes and budget reductions, but such fixes are not sustainable over the long-term. Some institutions require real, systemic redesign to emerge intact from this sustained downturn. Even once the economy improves, cost pressures may persist. Tuition growth has outpaced inflation for a number of years, and if prospective students balk at fees, institutions may be forced to further reduce costs. What's needed is for institutions to find ways to sustain growth and implement necessary changes while keeping costs down.

Further exacerbating the situation are two relatively new factors driving change: customer demands and increased competition. Incoming students at many institutions are no longer the traditional 18-year-old, full time learner. They may be older, have full time jobs and families to juggle, and have different motivations and needs for their education. Additionally, student expectations for the level of service provided by an institution is influenced by what other businesses like banks and online retailers provide, such as 24x7, location-

independent, customized services. Additionally, many institutions are facing increased competition for students, from for-profit universities focused on business and technical disciplines. Both the changing demands of prospective students and increasing choice among educational providers, may pressure colleges and universities to make significant changes to remain competitive.

But what is most likely to force sweeping changes in higher education is not customers or the economy, but the government. While higher education has adjusted to some regulatory changes in the past few years such as the Student and Exchange Visitor Information System (SEVIS), it has so far been spared the full brunt of regulatory change. However, increased focus on rising costs and accountability could put higher education into legislators' crosshairs, and it can prompt introduction of Sarbanes-Oxley-like legislation that could radically alter the way colleges and universities manage their administrative processes. The impact of such legislation could be tremendous. According to AMR Research, companies will spend close to \$15.5 billion on compliance-related activities in 2005, including \$6.1 billion on Sarbanes-Oxley alone. AMR estimates total spending on compliance-related activities will be \$80 billion over the next five years. (Marlin, 2005) Given the difficulty in making even minor process changes in existing systems, complying with such regulation could be extremely arduous for many institutions.

A New Alternative

In the ECAR study of IT alignment in higher education, we discussed at length the emerging business model known as the "adaptive organization." (Albrecht et al., 2004) In this model, an organization is redesigned to respond rapidly to environmental changes. Organizational structures, business processes, and technology are built that can in a plug-

and-play fashion, quickly change to meet business needs. This approach helps an organization to continuously tune its processes to business needs and customer demands. However, to be that flexible an organization must be able to quickly alter how it does business, from both a process and technical perspective. Few higher education institutions, with business processes structured around ERP systems, have this degree of flexibility.

However, an emerging solution, known as the business process management system (BPMS) promises to bridge the gap between the relatively inflexible world of traditional ERP and legacy systems, and provide the responsiveness required to achieve the benefits of the adaptive organization while also delivering a host of process improvement capabilities.

Just what is a business process management system? The answer to that question is still evolving. The BPMS is a new type of technology solution designed for the easy creation, operation, and modification of a process-driven business. Forrester Research (Harris, with Vollmer, Lawrie, Allen, 2003) defines business process management as "event-driven integration driven by orchestrated, application-oriented workflow across multiple internal applications and/or between trading partners." Giga Information Group (Vollmer, Leaver, Moore & Peyret, 2004) defines it as "the designing, executing, and optimizing of cross-functional business processes that incorporate systems, processes, and people." BPM software vendor Lombardi Software (Lombardi Software) defines it as "the understanding, visibility, and continuous improvement of business processes. BPM is about delivering improved business performance to easily automate processes, measure their impact, and upgrade them in response to new ideas or external business events." Gartner (Sinur, 2005) defines it as "a general term for the services and tools that support explicit process management (for example,

process analysis, definition, execution, monitoring, and administration), including support for human and application-level interaction. One key differentiator between workflow and BPM is the application-level interaction.”

Sound confusing? It is. In an attempt to analyze the BPMS market, META Group found over 140 vendors selling BPMS-like products. To make matters more perplexing, major consulting firms and industry associations present BPM as a management discipline enabled by the BPMS system.

At its heart, BPM is a concept of managing an organization through a process, rather than a functional orientation, and it is about extracting optimal performance out of those processes. This is hardly a new idea. For years management pundits and business schools have been espousing the merits of a process-oriented management approach. But, actually achieving true process oriented management can be difficult. It is no easy task to acquire the real-time data needed to effectively manage processes, and changing processes in response to the data is time-consuming and difficult when business processes are embedded in transaction processing systems.

The intriguing aspects of BPMS, and the features that differentiate them from other systems such as workflow, enterprise application integration (EAI), and process modeling tools, is that BPMS systems:

- ◆ Abstract the business process out of the application and run it at a higher level inside the BPMS
- ◆ Have a standards-based way of describing and executing a business process, so the business process is portable across enterprise boundaries and will work across different technology platforms (BearingPoint, Inc.)

In essence, the BPMS system is a middle-ware layer that allows an organization’s

business processes to be modeled using a standard language. The system can be used to execute and monitor the business process, utilizing existing systems such as ERP to complete transactions, and manual processes such as the interaction between a call center representative and a customer. The BPMS system can be used to integrate processes across areas of an enterprise that do not share common systems, while ensuring repeatability. It can also be used to share processes across organizations, enabling easier connection with customers and suppliers.

“The idea is to build a process tier above your existing systems,” says author and BPM expert Peteringar. (Haapaniemi, 2005) “That’s where you play the game of creating and modifying business processes.” With many of today’s BPMS technologies, says Fingar, “you can manage the entire life cycle of a process—from the discovery of process, where you are analyzing how your company currently works, to the design or modification of new processes, to implementing or enacting that process, to getting feedback from that process so you can optimize it.”

Each BPMS vendor has a different approach, but the common benefits of the BPMS concept include:

- ◆ *Process abstraction.* By using the BPMS as the “trusted source” for business processes in the organization, these processes can be stored and executed independently of application software, and can reach across disparate systems and incorporate both human and system-driven tasks. This allows rapid modification of business processes, without the need to customize or reconfigure underlying applications. It also allows organizations to design processes that best meet their needs, rather than having to conform to a process model dictated by a software vendor.

- ◆ *Enforcing process rules:* By serving as the engine that drives the organization's business processes, BPMS standardizes the processes and ensures adherence to the processes. This can greatly ease regulatory compliance issues, since all processes are inherently documented and executed consistently, and can increase an organization's efficiency and effectiveness while reducing risk.
- ◆ *Real-time measurement.* Most BPMS systems also include the capability to monitor process performance in real-time. By providing management with dashboard views of their organization's processes, BPMS systems can help identify problems as they occur and trigger responses, and can also be used to identify areas for further improvement.
- ◆ *Process modeling.* Many BPMS systems allow managers to run models of their processes under different scenarios, such as increased workload; smaller employee base; or modified process. By understanding the performance of the process under these different conditions, managers can experiment to find optimal settings and run what-if scenarios that can assist with future planning.
- ◆ *Continuous improvement.* BPMS systems provide the mechanism to support true continuous improvement initiatives. By helping managers identify issues and providing the means to rapidly update the processes within the system, organizations can continually make adjustments to optimize the performance of their business processes. These improvements are sustainable, since they are integrated into the organization's core systems.
- ◆ *Sharing process components.* Because BPMS systems model business processes according to set standards, organizations can share process components, both internally and externally. This allows for the

development of best practices libraries; deployment of common processes across large organizations; and process-level integration with external entities such as customers and suppliers.

- ◆ *Leveraging existing investments.* BPMS systems act as a middleware layer to connect other systems in a structured way. They can be installed in conjunction with an organization's ERP systems, CRM systems, business intelligence systems, or other existing technologies. They increase the flexibility and responsiveness of these systems, while leveraging them to perform the functions for which they are designed.
- ◆ *Flexible implementation.* An organization can choose to deploy a BPMS in just one or two high-volume processes where the capabilities are most needed, or the BPMS can be deployed as the operational foundation of the organization. A BPMS can also be implemented incrementally, moving one process at a time across the organization.

While stand-alone BPMS systems are relatively new to the market, the benefits achieved by their customers are generating a strong interest in these products. In one example, "a major financial institution was able to reduce the amount of time required to develop new products for its wholesale customers from an average of 28 days to less than five minutes. This was accomplished using BPM technology that orchestrated the required steps in the operation, enabling parallel processing of tasks when feasible and minimizing the delays caused by multiple human interactions through the implementation of workflow features that managed the escalation of decision making when needed." (Vollmer et al., 2004)

BPMS systems can help organizations achieve many of the qualities of an adaptive enterprise. By allowing business processes to

be changed, both in systems and in practice without requiring large IT initiatives, organizations can rapidly modify their processes to meet shifting business conditions and improve process performance. One BPMS customer “has deployed seven major end-to-end processes with over 500 subprocesses. They release new processes every quarter, and continue to evolve their existing deployments every six to eight weeks.” (Lombardi Software) This flexibility would not be possible with traditional applications.

Another important way that BPMS helps improve process performance is by providing real-time monitoring of key performance indicators (KPIs). KPIs can be built into the process models created in the BPMS, and then they can be tracked as processes are executed. By monitoring these KPIs, management gets an accurate view of how processes are performing, and is able to reallocate resources as needed to optimize performance. Since processes can easily be changed, this approach allows organizations to quickly “sense and respond,” another key tenet of the adaptive organization.

Also important to the adaptive organization is the ability to plug-and-play different organizational, process, and technology components as needed to scale operations to meet demand. One example is the use of outsourced call center representatives to supplement internal staff at peak times. As discussed earlier in this chapter, in a traditional model one pitfall of this approach is that the lack of integration between the organization and the outsourcer will become apparent to the customer, resulting in poor customer satisfaction. The BPMS has the capability to overcome this barrier. By providing the outsourcer’s employees direct access to the organization’s customer service processes, both procedures and systems, the outsourcer is seamlessly integrated into the organization’s process, which means they can easily ramp

up or down as needed. If desired, the outsourcer’s own systems could be incorporated into the process, allowing the organization to leverage their provider’s best practices into their own process.

The BPMS can also enhance the delivery of shared services. It could be used to allow organizations to come together and leverage expensive components such as ERP systems, while retaining ownership and execution of their own unique business processes. Conversely, the BPMS could be used to allow organizations with disparate information systems to create shared functional service centers that execute a common business process while continuing to use each organization’s own back-end systems.

As the BPMS market evolves, the benefits and shortcomings of BPM systems will become more apparent, and their role in the overall architecture of the enterprise will become clearer. For organizations that are early adopters of such systems, success will be dependent upon the same factors critical in any systems implementation: having strong sponsorship; having a clear idea of the business problem being solved; addressing the people, process, and technology aspects of the implementation; and performing effective project and change management.

BPM and Higher Education

While BPM systems offer tremendous promise, they have not, to the best of our knowledge, yet been deployed in a higher education environment. However, the new paradigm they represent does have the potential to address some of the key issues raised in this and other ECAR studies. These include:

- ◆ *Improved ability to react to change.* The BPMS gives the organization the ability to quickly and cost-effectively react to change, whether instigated by government regulation, changing business

needs, or the desire to become more adaptive in doing business. By disassociating the business processes from the transactional systems, the processes can be changed as needed without the time and expense of major systems modifications or upgrades.

- ◆ *Maintaining satisfactory process performance.* As we learned in this study, higher education's approach to business process performance is one of satisficing, or creating processes that are good enough without being exemplary. However, process performance is not a static target. As regulations, the business environment, and constituent demands change, institutions that do not continue to improve their processes may see their processes fall back into at-risk status. BPM systems provide process owners within institutions the necessary information and tools to improve their processes continuously and in a way that can be sustained, without the need for expensive system customizations. They also enable the institution's management to monitor process performance in real-time, allowing intervention in poorly performing processes before the institution is at significant risk.
- ◆ *Lower maintenance costs.* As we discovered in the ECAR study of IT funding (Goldstein, 2004), higher education IT organizations are spending most of their budgets on maintenance activities, leaving few resources to focus on value-added activities like business process improvement. BPM systems promise to allow business owners to directly control the changes made to the organization's processes, workflow, and monitoring capabilities. At minimum, this gives process owners new capabilities without requiring significant IT support. In some organizations, particularly those that have customized their ERP applications, the savings in IT can be

substantial if these maintenance activities are reduced in scope.

- ◆ *Allow competitive advantage at reasonable cost.* As we learned in the ECAR ERP study (Kvavik et al., 2002) 87 percent of institutions had a strategy of implementing their enterprise systems with as few customizations as possible. While this approach helped to reduce implementation and maintenance costs, the downside was that institutions adopted a generic business process that did not differentiate the institution significantly from its competitors. By removing the linkage between the transaction system and business processes, institutions can selectively choose to implement customized business processes where they feel uniqueness makes sense, allowing them to better serve their constituents or better differentiate themselves to prospective students and faculty. For those processes that are considered to be commodities, institutions can take advantage of the common modeling language of the BPMS to share processes among one another, purchase them from vendors, or outsource them to an external provider.

Business process management systems, while not a panacea, appear to offer some significant benefits that make them worthy of evaluation by higher education institutions. These systems have the potential to allow institutions to leverage their existing applications, identify and implement significant process improvements, and change the way business processes are managed. And because they can be implemented incrementally, institutions interested in exploring their capabilities can do so in a controlled, low-risk way. Will we see a push toward a Wal-Mart level of efficiency in higher education? Probably not anytime soon, but these new tools provide new capabilities for institutions to make the right level of process

improvement for them, in ways not easily possible before.

As institutions look to the future and evaluate how to approach business process performance, the lessons learned from this study suggest a three-pronged approach:

- 1) Identify and remediate processes that are at risk. These processes do not need to move to an exemplary level, but they do need to reach a satisfactory level of performance.
- 2) For commodity processes—those that need to be performed but do not dif-

ferentiate the institution—the focus will likely be on satisficing or providing good enough rather than exemplary levels of service, efficiency, or effectiveness.

- 3) For processes that can differentiate the institution, especially in student-centric areas, institutions will be more likely to push to create high-performing processes. The BPMS tools discussed above could help institutions interested in optimizing their performance achieve new levels of efficiency, effectiveness, and customer service.