

Process Innovation and Corporate Agility

Balancing Efficiency and Adaptability in a Knowledge-Centric World

Derek Miers

Abstract

Customer service, corporate agility, speed, and efficiency are central to business performance in the modern world. Underpinning each of these concepts is a subtly different emphasis in the notion of business process – i.e., how the firm is organized. This paper explores issues associated with finding the right balance between standardization and evolution — allowing the firm to achieve organizational longevity (one result of corporate agility), with a special emphasis on service orientation and business process outsourcing. It first discusses business process terminology and then examines the increasing importance of knowledge workers in generating value for the firm. Focusing on the innovation imperative, it addresses service orientation as one component of corporate agility before exploring why knowledge workers need to be able to exercise their judgment. We then delve into the potential implications for process architecture, organizational maturity, and related management practices. We investigate the situations where process evolution is acceptable (if not desirable), challenging some of the existing design philosophies while highlighting alternatives that support both flexibility and efficiency. Finally, we look into the capabilities of modern Business Process Management (BPM) suites to support these competing agendas.

Introduction

Think about how you do your job. Is it possible to represent the intricacies of how you operate with rigorous procedures? Or would the evolving, complex web in which you operate make it impossible to capture the nuances of decision-making and potential paths through your “process”?

What about new product development? Which parts of this process require procedural control, and where is flexibility required? In an insurance company, at what level should the process of claims adjudication be prescribed and where should the customer service representative get to exercise his or her judgment?

From a business process perspective, there are many subtle, but important, issues associated with these questions. On one hand, there is the efficiency objective, usually achieved through standardized procedures. On the other hand, without mutation, there is only stagnation; without some degree of process adaptability, the business will eventually decline.

For the most part, customers are not interested in a firm’s internal procedures, but they do care about the external value they receive from the firm’s products and services. Of course, goods and services have to be delivered in the right time frame and with the right level of quality (attributes of its procedures). In the end, customers are primarily concerned with the output – how well the organization understands their special needs and responds to them. These are the intangible aspects that differentiate one firm from another.

So how can a firm find the right equilibrium between efficiency, too much control, and not enough customer focus or adaptability? How much of this should be decided by IT, and how much of it by the business? How is corporate agility enabled, or constrained, by process design and the IT implementation underpinning it?

All sources of competitive advantage are temporary, and very few companies can create new sources of advantage after historic sources decline. Studies show that “while many companies

can manage short-term bursts of high performance, only a few sustain it in the longer run....The short-term performers were successful executors that lost their way when the environment shifted.”ⁱⁱ Or to put it another way, “nothing fails like success.”ⁱⁱⁱ

High performance usually implies process efficiency – where either superior value is generated from a given set of (human) resources or the resources are reduced.ⁱⁱⁱ At least that is the way in which it has been interpreted to date. But this perspective is not always best for long-term organizational success. Process performance should also be measured by its agility and adaptability.

To respond to these challenges, a new breed of BPM technology is emerging that enables firms to adapt their processes quickly to changing market demands and at the same time drive efficiency through standardized procedures.^{iv} As a result, corporate agility is no longer just a pipe dream; leading enterprises are experiencing the benefits of dramatic performance improvement while retaining the ability to change their direction and redeploy their resources instantaneously.

Process – A Problem of Dialect

In the domain of business processes, dialect is a big problem. Ask 20 people in the street for a definition of “process” and you will receive at least 12 different answers. Some might accurately describe a process as “the way things get done around here.” Others talk of “sequences of activities,” where prescription and control are more important. More common notions include “transforming inputs into products and services of higher value,” or “a collection of business activities that create value for a customer.” A more useful notion might be “a number of roles collaborating toward a goal.”

But when business strategists suggest that a high-level process review of the organization is required, they really mean process as “purpose.” They are interested in the value delivered by a process – the customer relationship, the shipping process – that exists to deliver some sort of benefit to the organization. Firms have a finance process to make sure they do not go bust, that customers pay for products and services delivered, and that the organization pays only for those that are used. Therefore, for these business strategists, process (as purpose) leads to an emphasis on identifying the capabilities and behaviors that the business needs to exhibit, *and, from that*, they derive the appropriate organization.

However, mention the word *process* to the business practitioners in the organization, and people immediately start thinking about the current reporting structure (the organizational chart and functional silos) and the steps and activities that transpire within each department. They then link these activities together, describing the result as a *process*. The point is that these two uses of the term “process” are talking about different things – a problem exists with dialect. In the abstract domain of business processes, unpicking exactly what people mean can be very difficult.

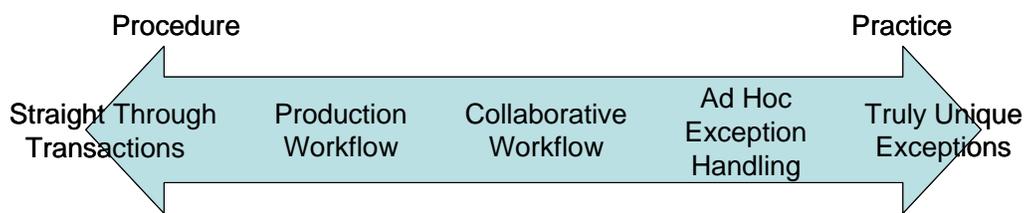


Figure 1. Process as a Spectrum

It is best to think about process as a spectrum – with one end being focused on efficiency (“procedures”) and the other end being focused on value and innovation (“practices”). Procedures are oriented toward control and are common in back office operations. All would agree that the teller should not get creative with a bank draft. At the other end of the scale, practices are what knowledge workers do. They are goal-centric and guide work rather than control it. If the case in hand requires something special; a variation from the standard, knowledge workers are empowered to exercise their judgment.

Most “business processes” involve a combination of both procedural and practice elements. Indeed, processes often flip-flop from one end to the other. For example, consider a pharmaceutical firm developing a new compound and bringing it to market in the form of a drug. Developing the compound is almost certainly practice driven. Deciding which new compounds to promote to the next level is probably governed by a certain degree of procedure. But this also involves elements where people make value judgments (practice again). Contrast designing a clinical trial (practice) with running the clinical trial (procedure), or moving onto developing the market engagement strategy (practice). The sales transactions involved in delivering the drug to market will be procedurally defined, as will the relationship between sales demand and production (although the coefficients may change relatively often).

If we review the jobs people are doing within those functions, they are a mixture of procedure and practice. As one noted cultural anthropologist put it, “If you look at any form of human work closely enough, you discover that it’s a mix – some activities that we all consider tedious can be usefully automated, and other activities require judgment and practical reasoning of various kinds.”^v For example, the roles of business professionals (lawyer, accountant, architect, etc.) are often prescribed, yet the individual sometimes can override the standard operating procedures in order to drive the work forward (of course, they are then answerable for their actions).

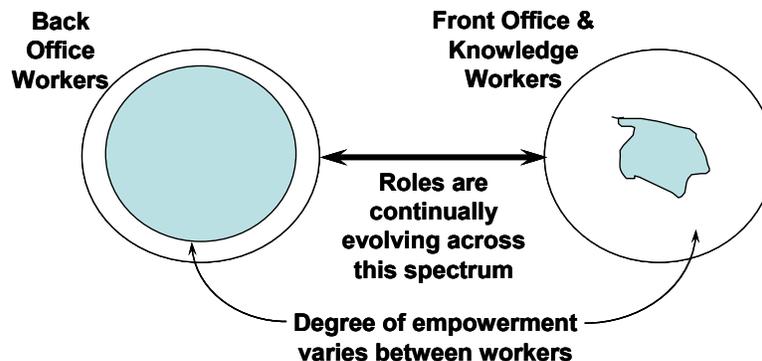


Figure 2. Individuals within given roles continuously evolve across the empowerment process spectrum from procedural control to practice.

This spectrum of process is even more complex when you look at how an individual builds experience over time, and the level of empowerment he or she enjoys. It does not matter which role one looks at; when someone starts in a new position, they tend to follow the rules. After three months, the individual might have a good feel for those rules that are important and those rules that are safe to ignore or break. After three years of experience, they may even help to establish the rules that govern their position (even though an individual has not changed jobs).

So how do you go about modeling and communicating degrees of empowerment? What is the best way to design a process that caters to individual discretion yet delivers the efficiency required to compete effectively and at scale? How will a BPM suite know that one part is flexible while the other part is controlled?

Recognizing the Value of Knowledge Workers

These perspectives are somewhat at odds with the typical BPM project, where the focus is mostly on standardization of work. Those involved in process automation projects often pay scant attention to the adaptability of the process over time. However, as firms achieve better control over their procedures, they begin to realize that their knowledge workers are a critical part of the value delivered to customers. Moreover, they find that the challenge is not so much in controlling work (through procedures) but in controlling and supporting change (to those procedures). The competitive challenge moves toward better support for knowledge workers, implying a need for greater flexibility and adaptability in process designs. Although not obvious at the outset, there is

a balance to be struck between empowerment and structure that will be different for every organizational unit.

These issues are exacerbated by the fact that over the last 30 years or so, business people have lost the ability to control their own destinies with regard to the way that work is managed. Where once the firm's processes were recorded by business people in written form (within reams of Standard Operating Procedures manuals), with the advent of computerization, the responsibility for understanding "how things get done around here" has increasingly been delegated to IT. Computerization and process automation required exacting definitions, necessitating the involvement of specialists (programmers and systems analysts) who were tasked with understanding the often mind-numbing details. In a very real sense, the ability of the workers to innovate suddenly was curtailed. They could only do what was prescribed and laid down within the procedural structures of the technology systems.

For the generation of people joining the workforce after this trend toward computerization, IT's responsibility over process and procedure may have appeared natural and inevitable. It seems that many on the business side of the house forgot about the need to understand the way they work. In some firms, business people now assume that the understanding of how they deliver "value" is no longer part of their jobs. Indeed, these sorts of problems are often delegated to external firms (and then people wonder why their systems don't quite work as they might currently desire).

Yet in leading firms, it is clear that a focus on innovation is core to the organization's long-term success. Put simply, innovation is the fuel for growth. When a company runs out of innovation, it runs out of growth.^{vi}

In his 2004 HBR article, "Deep Change – How Operational Innovation Can Transform Your Company," Michael Hammer argues that breakthrough innovations in operations – not just steady improvement – can destroy competitors and shake up industries. He points to the fact that operational innovation is not seen as "sexy" when compared with finance and strategy, mergers and acquisitions, marketing and sales, etc.

"Operational innovation should not be confused with operational improvement or operational excellence. Those terms refer to achieving high performance via existing modes of operation: ensuring that work is done as it ought to be to reduce errors, costs, and delays but without fundamentally changing how that work gets accomplished. Operational innovation means coming up with entirely new ways of filling orders, developing products, providing customer service, or doing any other activity that an enterprise performs."^{vii}

Hammer describes how such firms as Progressive Insurance, American Standard, Taco Bell, Harvard Pilgrim Health Care, Shell, and Wal-Mart were out-performing their competitors using operational innovation. The key point is that rather than blindly following existing procedures, coming up with entirely new ways of doing things is the realm of empowered knowledge workers who exercise their judgment and experiment.

Surprisingly, the upper echelons of management are largely aware of the importance of knowledge workers. In a recent McKinsey survey, 76% of respondents believed that developing knowledge was either very important or important. 81% believed that developing knowledge was important for global business. Furthermore, innovation in products, services, and business models was seen as the most important contributing factor to accelerating the pace of change.^{viii}

However, as the basis of competition shifts, it is necessary to learn and quickly develop new things rather than cling hopefully to the past sources of success. The challenge for incumbent companies is to rebuild their ships while still at sea, rather than dismantling themselves plank by plank while someone else builds a new, faster boat with what they cast overboard.^{ix}

From an organizational change perspective, it is clearly impractical to treat all processes the same. At one end of the process spectrum (Figure 1), it is entirely appropriate to wring a few percentage points of improvement out of a transactional system (reducing cost compared with the

competition). For many BPM Suite implementations, this is the core focus – improving productivity by automating the core transactional procedures (which may never have been automated in the past).

Moving across the spectrum, humans are starting to play a larger role in facilitating the core transactions of the process. For processes at the other end of the scale (e.g., developing a new way of engaging customers, or introducing a new product to market), collaboration between knowledge workers, and iteration, have been critical to achieving success. Who knows what customers like and dislike? What are the issues that must be addressed in manufacturing, shipping, marketing, and finance? Around each of these questions is a great deal of detail that must be worked out to create efficient and flexible processes.^x

Over time, the practices that we readily develop to solve these sorts of problems become more and more systematic. We turn them into routines and detailed procedures. This can be difficult and complex as many large-scale, knowledge-intensive processes are mired in organizational behavior issues (rather than procedural operational challenges).

“A business process that is ‘knowledge intensive’ differs from one that isn’t by being composed of many more stages or phases, involving many more employees, dealing with issues far more ambiguous and uncertain than in regular processes, and requiring greater levels of expertise, interdependence of knowledge and creativity.”^{xi}

It is these knowledge-intensive processes that are most likely to benefit from innovation; yet, they are the hardest to support with standard packaged applications or internal development efforts. Rather than focusing purely on the procedural form (at the transactional level), the challenge becomes one of blending the right degree of prescription and automation of the routine while being able to change the way work is handled to suit the needs of the case in hand.

Although BPM technology drives efficiency through standardized processes (reducing resources and lowering costs), the real benefits derive from enhanced corporate agility. Achieving that agility requires both the careful structuring of the underlying processes (to make them more adaptable), and the provision of tools that empower knowledge workers, enabling them to actively participate in the continual improvement of those processes.^{xii}

As Lucy Suchman says, “Every form of work, from the most so-called routine to the most so-called knowledge intensive, is actually a mix of practical, tedious kinds of manipulations of materials, and thoughtful, knowledgeable judgment. The trick in designing information systems is to introduce bits of automation that will fit into the work and do useful things, and then make it possible for people to work with those bits of automation embedded in the systems while leaving them the discretionary space to exercise the kind of judgment they need to exercise to really get the work done.”

It is important to recognize that moving from a great idea to a roaring commercial success usually requires recursive experimentation and learning. The only way ahead is to find the appropriate balance between procedural support (for the repetitive elements of the process) and adaptability (by empowering the worker to exercise his or her judgment based on the unique needs of the case in hand). It is also worth noting that this balance is different for every organization – based on its own particular propensity for risk and the degree of control desired by management.

Cameo Case Study – IDA

The Institute for Defense Analyses (IDA) is a federally funded non-profit corporation that assists the U.S. government by ensuring that major acquisitions are scientifically sound. As such, it provides an independent testing and review facility for such organizations as the U.S. Department of Defense (DoD) and the Department of Homeland Security (DHS).

For example, under the SAFETY Act (Support Anti-terrorism by Fostering Effective Technologies), submissions must be independently reviewed and evaluated to test the science behind them before recommendations are made to the DHS. This involves the use of internal and external experts.

The process of gathering reviewers, assigning tasks, providing secure access to the relevant information, and consolidating that into a final submission for DHS has many steps. At the same time, it was essential that the documents produced and consumed are of “evidential quality” – i.e., traceability is of paramount importance. Furthermore, security was important with all documents accessed in the proper sequence; and only by the people associated with a given role at that point in the process for a given case. Production of a final report was always somewhat fraught, with a significant error rate that was unacceptable to management.

Moreover, the core “reference” process changes regularly, while individual cases require adaptation on a daily basis. From the perspective of an individual application (case), the rules and sequence of evaluations change often, as do the formats used to convey results (to DHS and the applicants). Some applications would require greater urgency; others may be extended through further information gathering. Either way, the reference procedure could only be thought of as a guide.

The problem was that each case handled by the agency was unique. They shared some common characteristics (on how they should be handled), but the number, frequency, and depth of review phases was not predictable in advance.

To handle this complex problem, a “Case Handling” system was built using the Appian Enterprise BPM Suite. It enabled the careful management of the entire process, providing support for changing both the core reference process and individual cases in flight (independent of each other).

Prior to the implementation of a BPM support system, IDA employed four research assistants who did nothing but assess status of the work at hand. Since implementation, two of those research assistants now have become full-time research staff members carrying out evaluations – i.e., their new jobs involve creating value rather than simply assessing the status of existing work. Another is focused on building a growing repertoire of suitable subject matter experts, leaving one individual to carry out the work that originally took four people. And her work has fundamentally changed to concentrate on the way work is carried out, leaving her to study the process and analyze it for management.

The IDA manager responsible put it like this: “We are congressionally mandated to meet timeframes, and now we are doing it with a lot less confusion and frenetic stress. There is no last-minute panic to pull it all together.”

Developing Organizational Maturity

As industry leaders such as Toyota, Alcoa, Southwest Airlines, and Vanguard have demonstrated, it is possible to tightly couple the process of doing work with the process of learning to do it better. Operations are designed to reveal problems as they occur. When they arise, they are addressed quickly, regardless of how trivial they are. If the solution to a particular problem generates new insights, they are deployed systemically. And managers constantly develop and encourage their subordinates to design, improve, and deploy such improvements.^{xiii}

“It is what we think we know already that often prevents us from learning.”^{xiv}

To understand why some companies are more adept than others, it is useful to consider an organization’s business process maturity (see Figure 3). Mature organizations, such as those promoted by Hammer, are able to adapt quickly. Take Dell, for example – its ability to cut unnecessary cost from the supply chain is legendary. Another example is FedEx, which now knows so much about its delivery process (logistics) that it can give a customer a choice of times when a package is to be delivered.^{xv}

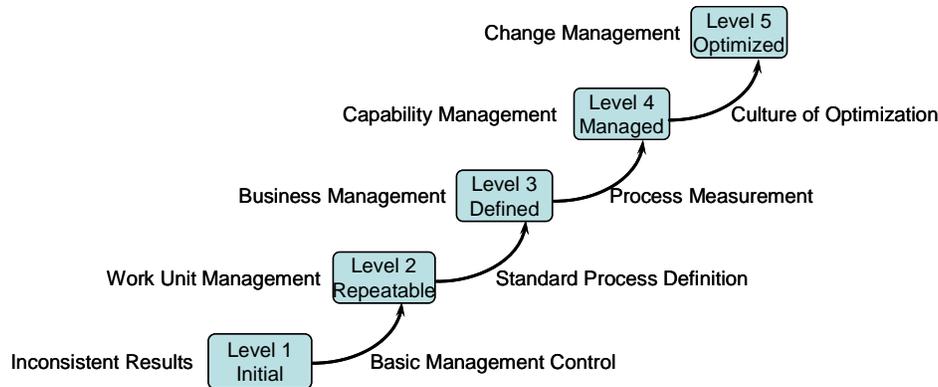


Figure 3. The Capability Maturity Model is being adapted into a Business Process Maturity Model (BPMM) to explore organizational maturity around processes.^{xvi}

An organization that does not have basic management controls in place to deliver products on time or achieve predictable quality will struggle to maintain its customers. This organization's first challenge is to stabilize the way work is handled at the local work group/team level (moving to Level 2 in Figure 3). If there are 15 teams involved in an end-to-end process, then each of them must be stable if the overall process chain is to work effectively. At this level, the focus is on stabilizing the local work unit.

As an organization moves up the BPMM ladder, it looks for the best practices (producing the most consistent results) and stabilizes the way work is carried out across the organization around them (Level 3). This helps to achieve economies of scale and provides a common basis for measurement. This is normally where a BPM suite is deployed, providing the necessary plumbing that enables the firm to more easily change (although it could also be deployed to support departmental processes at Level 2).

Process performance measurement usually starts at Level 2, but as the organization progresses, the quality and value of those metrics improve exponentially. Key Performance Indicators (KPIs) around a consistent set of processes are usually agreed upon by the time Level 3 is attained. At Level 4, the capabilities of the process are known. They may not be what management wants, but at least there is a statistical viewpoint that is realistic – the variance of cases against the desired metrics can be identified. With stable processes it becomes possible to see where surgery is required to address the competitive need and identify the anticipated benefits. At Level 5, the KPI data is so good that it highlights those areas where improvements are needed.

Attempting to increase an organization's Business Process Maturity is a long-term goal. Different organizations will have various starting points for the journey. For some, the challenge is to achieve basic efficiencies (by applying standardized procedures). For others, it is about loosening up their procedures in certain places, allowing them to respond more easily to customer demands or competitive pressure – i.e., becoming more agile.

Achieving Corporate Agility

Achieving corporate agility will mean different things to different organizations. If it currently takes an average of 36 months to introduce a new product design to the market, then a reduction to 18 months might feel like agility. On the other hand, if a start-up competitor takes an average of six months, then it may still be able to out-innovate the established incumbent. For example, think of the mobile phone industry where Chinese, Korean, and Taiwanese competitors shifted the bounds of competition as they produced new models more quickly than the industry giants (Nokia, Ericsson, and Motorola). When Nokia dropped the ball in its new product creation process (the product portfolio was criticized by analysts for missing the trend toward clam-shell phones), the net result was a \$20 billion drop in market cap.

Corporate agility implies the ability to move quickly, remaining both nimble and responsive. The term was first used in the 1990s to describe manufacturing organizations that could adapt quickly to changing customer needs. Agility within a governmental organization could be defined as the

ability to run within shifting policies, regulations, mandates, budgets, and priorities with changing missions and charters.^{xvii}

Industry analyst firm Gartner talks about agility in the context of rapidly accessing information. "Agility is defined as the ability of an organization to sense environmental change and to respond efficiently and effectively to that change....In practice, agility is about rapid access to information (both internal and external to the organization) that drives real-time actions. To gain access to such information, the management and organization of metadata – data about the needed data – are crucial to every process. This will also help put information in its appropriate context."^{xviii} It is worth noting that this sort of agility can mean being able to respond to a customer's desires in the context of a single telephone call – an entirely different scope from the product development examples given above.

There is a broad array of strategies available to the firm seeking agility, but underneath them all is a greater emphasis on business processes.

"Meticulously defined and managed processes continue to be a powerful source of competitive advantage for many companies. Look at Toyota, for instance. Its highly engineered manufacturing processes not only give it superior productivity but also provide a platform for constant learning and improvement. The formal structure, which is anything but democratic, spurs both efficiency and innovation – productive innovation – simultaneously. Structured, well-thought-out processes are also essential to most knowledge work, from product development to financial analysis to software engineering to sales and marketing. And the more complex the effort, the greater the need for clear processes. Far from making business less effective and agile, the increasing attention to process has increased effectiveness and agility."^{xix}

Furthermore, it is self-evident that businesses are constantly reorganizing, merging, and splitting their operations, resulting in continuous changes in the boundary between what is owned and who are collaborators in delivering value to customers. Even the role of the customer can change. Yet there is still a common process operating across the value chain.

In 1999, John Hagel suggested that firms should rethink the traditional organizational model by "unbundling their core processes." He suggested that firms should organize around Customer Relationship Management, Product Innovation, or Infrastructure Management, and then outsource all non-core processes.^{xx} Today, we see that vision playing out with the explosive growth of outsourcing and off-shoring firms.

At the core of these developments is a "business services oriented" paradigm (services at the organizational design level), which, if approached correctly, helps facilitate these sorts of interactions. It also helps when trying to understand the business interactions internally; in some large firms, internal interactions can appear much like an extended value chain.

This trend has major implications for how we model and communicate such processes. The challenges are subtly different when trying to understand the myriad interactions between the roles and the resulting behaviors. From a process scope point of view, the span is now up and down the value chain, rather than being confined to a single organization. Viewing a process as a set of interacting abstract roles provides new insights, above and beyond those possible with a traditional flow diagram.^{xxi}

Often, it is the established systems of a firm that constrain adaptability. This is where modern Service Oriented Architecture (SOA) comes into play. SOA is an approach to systems development that delivers applications through the composition and orchestration of discrete, independent components, or "services." While the design philosophy driving SOA is process-oriented, it can benefit from a formal orchestration layer that invokes (or calls) discrete services according to an explicit process model. That is where the BPM suite has an important role to play. BPM is about driving improvements in business performance, yet it benefits from SOA thinking. On the other hand, SOA aspires to underpin business agility, yet it is fundamentally an approach to IT integration.^{xxii}

The BPM Suite Driving Transformation

A BPM suite provides the plumbing that allows an organization to accelerate the way that it moves up the Business Process Maturity ladder. The BPM suite is driven by a model based view of how work is achieved; change the model, and the way work moves through the business also changes. Over time, as models are executed and improved, the BPM suite supports the creation of a set of valuable organizational assets.

For most organizations, the first step is to implement standard procedures that support the process (Level 2 or Level 3). The BPM suite provides the plumbing that enables managed change in an iterative fashion. As needs arise, the BPM team can reconfigure the process model, allowing the firm to change the way in which it does business. Moreover, these changes can happen much more quickly than was previously the case (an iteration cycle of a few weeks is common).

The modern BPM suite also provides built in facilities to capture process performance metrics, usually related to resource utilization (Level 4). But Level 4 is more than just average cycle times of cases; the business user will also want to assess performance at the level of the business problem. For example, rather than the average cycle time for processing loans, the manager is probably more interested in those cases that relate to the Jumbo loan from the Independent Financial Advisor channel (since they are the ones most at risk).

Moreover, information about the process helps manage the process. The best BPM suite products will provide the ability to pull all information related to the case, including analytical information about business execution (and exceptions^{xxiii}), into a human decision making context – delivering the right information to the right individual at the right time. In this scenario, all the relevant facets (the context of the case) are made available to the user, allowing him or her to exercise judgment (but still within the confines of the prescribed process).

There is also a high correlation between the level of business process maturity and the sophistication of process models used in the BPM Suite. At Level 2, they are relatively simplistic – probably using one process with a few embedded subprocesses to support a given business problem. As the organization gains experience and understanding, the flexibility and adaptability of related process models also increases. A Level 3 organization has standardized processes, and the majority of its employees understand how those processes operate. As part of that understanding, employees are given explicit guidance on how to tailor the process.^{xxiv} This change would probably be applied to the standard process and would likely only affect new cases (rather than the case in hand).

At Level 4, the process architecture itself is more sophisticated, allowing the defined processes to handle most situations without modification. The process architecture is by now based on a set of interacting process models, insulating change in one part of the model from others. And where change is required to support the case in hand, the guidance provided would be facilitated by the BPM suite.

At Level 5, process improvement efforts split into two complementary directions. On the one hand, the proactive improvement initiatives that target the wider **organization** continue. On the other hand, innovation is encouraged at the **individual level** as employees make opportunistic improvements. Although not obvious at the outset, as the organization progresses past Level 3, empowerment grows dramatically.^{xxv} Employees are encouraged to look for new ways to work better – i.e., individuals continuously apply their knowledge to improve performance. Rather than setting out to control their activities, the management emphasis changes to understanding and measuring the effectiveness of the changes made.

But one cannot assume that the sum of those opportunistic individual improvements will be good enough to meet management objectives. The organization has to look for ways to drive toward the required improvements, whether that is technologically driven (via the BPM Suite) or through other methods such as surgery on the value chain (partnering, outsourcing, or off-shoring). The key point to understand about Level 5 is that to deliver the desired change requires a combination of the opportunistic efforts of knowledge workers and proactive efforts driven top down.

It is when the organization is ready to move to Level 5 on the Business Process Maturity ladder that it really needs to start balancing issues of organizational control with individual process adaptability. In order to attain the benefits of Level 5, the management of an organization must be comfortable with the notion of trusting their employees to do the right thing. This allows workers to react more quickly and flexibly. Having empowered individuals to make these sorts of changes, management review practices are required to capture and share new process innovations.

While some organizations are not ready to make the long-term commitment to a transformational approach, such as that implied by the Business Process Maturity Model, implementing a BPM suite will inevitably start them on the journey. Over time, their process models will become more and more sophisticated; the degree of support for empowered users will also increase, and the measurement and analytics capabilities that they seek will evolve.

The point is that, as this sophistication increases, the BPM suite itself needs to start supporting more and more of the Process Spectrum (see Figure 1). Putting it another way, to derive the maximum benefits of a BPM suite requires a certain degree of business process maturity. Without it, the best tools will add little value. Indeed, they may create a bigger mess, faster.

Enabling Agility – A Range of Possibilities

Balancing adaptability with control is not easy – with any technology (although with a good BPM Suite it is possible). When looking at the sort of approaches taken in BPM to support knowledge-centric processes, there is a further level of categorization possible. They generally fall into one of the following groupings (many business scenarios incorporate aspects of each):

- **Complex Content Development** – involves managing the lifecycle of critical documents where the routing, participants, and results are not predictable a priori. The IDA case is an example of such a scenario, where evaluations may go through many different reviews, involving many different experts. On average, the underlying process model of one case or another changes every day, and the template process (used as a reference when new cases are initiated) changes every month. The key point here is that the process description ensures that the right workers have access to the right elements of content, and that robust content versioning manages the documents through their respective lifetime values.
- **Ad Hoc Collaboration** – to support the requirements of these workers, BPM suites need to incorporate threaded discussion groups, shared white boards, content management capabilities, and an independent security model that enables users to browse content independently (of any a priori designed process model). Often it is necessary to support this sort of ad hoc collaboration within the context of a wider, longer running process, where the participants are usually discussing some aspect of the current case. Ad hoc processes involving high degrees of knowledge worker collaboration can benefit greatly from the use of an appropriate BPM suite. Of course, participants need to be empowered to make opportunistic incremental improvements to suit the case in hand. With suitable review policies, it becomes possible to continually improve processes over time.
- **Project Collaboration** – one-off projects are good examples of situations where a group of knowledge workers are working toward a common goal, yet the processes they use are completely ad hoc; they have not been (and could not be) designed in advance. If the style of project becomes repeatable, it makes sense to reuse some of the processes that supported previous projects. However, invariably these processes require subtle adaptation to support the needs of the current project.
- **Contact Center** – when customer interactions drive the process, the opportunities to prescribe work processes are limited. While 80% of calls are WISMO (“What Is The Status of My Order”), the degree of variance is so significant that standardized procedures are just not possible. Indeed, customers are not interested in hearing about standard procedures; they want their problems and issues dealt with as quickly and efficiently as possible. Moreover, it is those situations where the Customer Service Representative goes that extra mile in resolving whatever problem the customer has that

satisfaction increases dramatically (leading to longer life-time value).^{xxvi} To facilitate the needs of the worker dealing with complex sources of information and long-running customer relationship processes, a mix of both synchronous and asynchronous process models is required.

- Case Handling – effectively, this is a more general blend of the two ends of the process spectrum, and incorporates many aspects of the categories above.^{xxvii} Most companies have both procedures and free form practices (their soft techniques and methods of doing things). Firms want to be able to somehow record those practices, build them up in a library, and then reuse them to support work. The key differentiating factor (of the BPM suite environment) is the ability to run multiple procedures against a given case of work – the primacy is with the case, rather than the process that is used to support a work item. On the other hand, each case is usually “managed” by a relatively loose (high-level) parent procedure, but the worker can add new procedural fragments to handle each different requirement of the work in hand. Effectively, the user is binding new procedural fragments to the case at runtime, either by selecting them from a library or by developing new ones. The idea is that empowered knowledge workers can then selectively override the constraints implied in these practices, yet they can rely on the procedural efficiency to drive low-value repetitive tasks. Again, an independent security model is required to facilitate Case Handling.

The Implications for Process Architecture

Organizations engaged in a transformational journey (as outlined in the BPMM model) recognize the importance of learning through iteration and experience, which helps them to develop more sophisticated process designs. Initial attempts at process design tend to deliver end-to-end amorphous process models that are designed to drive efficiency, but at the expense of adaptability. Although this is fine for the 80% of cases that may follow the standard process, it means all potential exceptions require definition a priori.

As process maturity increases, process modelers realize they have to find mechanisms for building in better runtime adaptability. They usually resort to ever more complex decision rules within a process (often separating these out into a separate rules library). But the reality is that rather than increasing the complexity, developers should be concentrating on simplifying their process architectures. They need to split them apart into efficient “service components” (procedural fragments) that carry out discrete tasks in the process, enabling their reuse across a number of different invoking processes.

The BPM suite then provides the needed “loose coupling” by orchestrating and managing the interactions between the parent process and the invoked service. Moreover, the BPM suite enables the publishing and reuse of these components to ensure the services are discoverable. From there, it is not such a big step to realize these services need not always sit inside the corporate boundary. Web Services are facilitating this transition as they work over HTTP, transparently allowing service interactions to pass through an organization’s firewalls.

While this will help to drive innovation and long-term organizational agility, this transition to outsourcing and service provision also requires a change in thinking within the business itself. To remain competitive, managers need to recognize the importance of unbundling the organization into its constituent services. Alongside this imperative, it becomes increasingly important to focus on evolving the organization’s culture alongside its processes, increasing autonomy for essential knowledge workers, and encouraging a certain degree of diversity.

But as managers move toward enabling this higher degree of freedom, they can become concerned about security. The challenge becomes how to minimize the opportunity for fraud. Again, the BPM suite has the key. It provides a comprehensive audit trail of everything that happens in a case, down to and including who changed what at what time and to what effect. With appropriate sampling mechanisms and review practices in place, potential fraudsters are soon identified. Indeed, the BPM suite acts as deterrent — if you know you will get caught, you don’t do it. Moreover, if the BPM suite has an appropriate security infrastructure, it is possible to

lock down certain parts of the process. For example, in designing a claims management system, it is possible to set up the process such that the payment phase requires certain preconditions to be met, yet still allows employees to carry out work in virtually any order.

From an organizational point of view, it becomes necessary to develop and manage a portfolio of improvement initiatives – think of them as organizational experiments. With appropriate monitoring of these experiments (and on the fly changes to existing cases of work), the employees can start to manage the process of making changes themselves! Having identified innovations, the BPM suite provides the capability to exploit them more easily. The new process model can be instantly deployed as the new “standard” approach.

In a sense, what we are arguing for here is a sort of “process wiki.” There is a standard way of doing things, but employed knowledge workers have the trust of management to override its controls in certain areas as they respond to the needs of the case in hand. Departmental standards are taken, adapted, and applied to cases. Through review and iteration, the standard processes are continuously improved. Rather than relying on a perfect up-front design, the best process emerges from the many cycles of iteration. Taken to the ultimate degree, individual knowledge professionals could have their own standard ways of carrying out certain tasks, sometimes based on the departmental standard but at other times based on their own inventions. With intelligent design, these personal “macros” could align with the service components of longer running business processes.

But this requires an advanced BPM suite platform that hides the complexity and seamlessly integrates applications and services together as directed by educated knowledge workers (exercising their judgment). It will not be good enough to give all workers in a given role carte blanche over all aspects of the process; a sophisticated security model is needed to ensure that the degree of change an individual can exercise is within a given scope.

Best Practice Observations on Developing New Capabilities

- ✓ *Convince senior management that process adaptability and innovation are key organizational goals.*
- ✓ *Look for external references (outside your own industry).^{xxviii}*
- ✓ *Challenge employees to look beyond the conventional to generate radical or innovative processes.*
- ✓ *Regard exceptions as a way of managing the need for process change and handling new ways of doing things (rather than seeing them as problems).*
- ✓ *Identify assumptions that constrain how work is carried out:*
 - *Make the special case the norm – the exception can become part of the new reference process model.*
 - *Rethink the who, what, where, and when of work.^{xxix} Apply different modeling paradigms to help people step outside the box, and see the process from the customer point of view.*
 - *Regard Data and Documents as implementation details for the process.^{xxx}*

- ✓ *BPM Suites are making the firm's business processes more modular and configurable:*
 - *Avoid hierarchical structures in process models; instead, focus on invoking discrete service-oriented components. Processes should be composed from individual service components, rather than "decomposed" from parent activities.*
 - *Develop encapsulated, reusable services that relate to a given issue; publish the interfaces, and empower the workforce to own their own processes. Identify who will manage which processes and rules post implementation and how they will access their subset.*
- ✓ *Focusing on the outcomes the customer is trying to achieve may reveal a nested set of "related" problems. Leaving it to the worker to decide on which elements are important to the current case in hand enables a more fluid and dynamic process architecture.*
- ✓ *Remember, "mental models become more rigid, more **locked in**, and more averse to novelty as we gain experience."^{xxx1} Modeling processes as abstract role interactions helps to break the bounds with existing functional processes.^{xxx2}*

Conclusion

While Business Process Management and Service Orientated Architectures have been touted as enabling corporate agility, there is a big difference between hype and reality. It is best to think about business processes as a spectrum running from rigidly defined transactions and procedures through more flexible and adaptive business practices. Most BPM- and SOA-based approaches are still stuck at the procedural end.

When defining business processes, organizations need to take into account their cultures and the needs of the business and find a balance between efficiency and control at one end of the spectrum and adaptability and innovation at the other.

Understanding this spectrum is particularly important when using BPM suites to drive process improvement and process change. Initially, organizations will inevitably use BPM suites to implement highly standardized processes. Over time, as the organization's sophistication increases, so do the process models used and the level of adaptability required in the underlying BPM suite. This increasing process maturity is an inevitable result of implementing process support within the organization. The benefits are not just in short-term process performance measures and flexibility, but also in overall corporate agility while enabling the organization to develop new sources of competitive advantage, ensuring its longevity.

He can be reached via email at miers@bpmfocus.org or by phone at +44-20-8742 8500. Other research papers and training course outlines are available on the BPM Focus Web site at www.bpmfocus.org.

Notes

1. "The Adaptable Corporation" by Eric D. Beinhocker, McKinsey Quarterly 2006 Number 2. In this insightful article, Beinhocker explores the observation that to survive, organizations must execute in the present and adapt to the future. Few of them manage to do both well.
2. Variously attributed to Gerald Nachman, Richard T. Pascale, Kenneth Boudling, but in the end probably all rewriting the words of Alexandre Dumas "nothing succeeds like success."
3. Optimizing the long-term performance of an organization necessarily requires work on the culture, which is as much about ongoing education and growing the business acumen of employees and

- management. When productivity is measured as a function of value divided by the resources that were used, it is easy to get project funding when the resources are reduced, much harder when one is looking to increase the value delivered (which is usually intangible).
4. Business Process Management (BPM) technology is a relatively new category of software that uses process models to drive work through the organization by routing tasks to the relevant employee (usually by role). A BPM Suite includes a range of software components such as process modeling interface, process engine, business rules engine, activity monitoring, and analytics.
 5. Lucy Suchman is now Professor of Sociology at Lancaster University. Before moving to Lancaster, she held the positions of Principal Scientist and Manager of Work Practice and Technology at Xerox's PARC where she conducted several seminal studies into the way work is organized. She played a critical role in developing my own thinking in this area while I was working with Xerox's Grenoble research labs in the mid-90s.
 6. "Funding Growth in an Age of Austerity" – Gary Hamel and Gary Getz, HBR – July 2004.
 7. "Deep Change – How Operational Innovation Can Transform Your Company," Michael Hammer, HBR – April 2004.
 8. "An Executive Take On The Top Business Trends: A McKinsey Global Survey." Executives report an accelerating pace of change in an increasingly competitive business environment, driven by knowledge and information trends and the forces of globalization. McKinsey Web exclusive, April 2006. The McKinsey Quarterly conducted the survey in March 2006 and received 3,470 responses from a worldwide representative sample of business executives, 44 percent of whom are CEOs or other C-level executives.
 9. ¹ "The Innovators Solution," Clayton Christensen and Michael Raynor.
 10. See "The Sales Learning Curve" by Mark Leslie and Charles A. Holloway, HBR – July-August 2006.
 11. "Can the Flow of Knowledge Be Captured in a Business-Process Rubric?" Kulkarni and Ipe, May 2006. <http://knowledge.wpcarey.asu.edu/index.cfm?fa=viewArticle&id=1252>
 12. Especially when you consider that professionals make up a third of the U.S. workforce (and take home nearly half of all wages and salaries). See "Managing for Creativity" by Richard Florida and Jim Goodnight, HBR July 2005.
 13. "Fixing Healthcare From the Inside, Today" by Steven J. Spear, HBR – Sept 2005.
 14. French Physiologist, Claude Bernard quoted in "Funding Growth in an Age of Austerity" by Gary Hamel and Gary Getz, HBR July 2004.
 15. "Surface Expedite Network is a time-definite service utilizing the operational excellence of FedEx Freight and the customer service expertise of FedEx Custom Critical ... choose the hour the shipment must deliver by (by 2 p.m., for example) or a one-hour delivery window (i.e., between 2 and 3 p.m.)" www.fedex.com.
 16. I am indebted to Dr. John Alden and Bill Curtis of Capability Management for helping me to clarify my thinking in this area during a recent BPMI-Steering Committee meeting at the OMG. Bill Curtis was Chief Process Officer at Borland, a former Director of the Software Process Program in the Software Engineering Institute at Carnegie Mellon University, and a co-author of the Capability Maturity Model for Software. Alden and Curtis were founders of TeraQuest and are

- co-authors of the BP Maturity Model (currently going through a standardization process at the OMG).
17. Tom Debevoise blog <http://www.tomdebevoise.com/blog/?p=42>
 18. “Achieving Agility: SOA Will Build Organizational Agility, but Watch the Hype,” Gartner Research, by Charles Abrams, Janelle B. Hill - 17 April 2006
 19. Nicholas Carr (of “IT Doesn’t Matter” fame)
http://www.roughtype.com/archives/2005/11/process_matters.php
 20. “Unbundling the Corporation” by John Hagel III and Marc Singer, HBR March 1999. Hagel was putting his own spin on the an earlier book, “The Discipline of Market Leaders” by Michael Treacy and Fred Wiersema, which also encouraged firms to focus their strategies around either Product Leadership, Operational Excellence or Customer Intimacy.
 21. To achieve a rich appreciation of the process it is necessary to model the process at a high level, from a number of different, complementary perspectives. Assessing the business situation using a complementary set of modeling techniques allows people to better comprehend the fundamentals of the process. The ideal techniques for this phase are:
 - Flow diagrams to look at the order of activities (BPMN) usually incorporating work assignment.
 - Role Activity Diagrams to focus attention on role interactions and desired behavior of the various actors.
 - Object State Transition Network models to focus on how things moving through the process change state.
 - Capability models to look at the process as sets of reusable business components. (A capability may be composed of other capabilities or implemented by a procedure – BPMN style model).
- BPMN does provide a modeling style called a Collaboration Diagram that incorporates “swim lanes” to show how roles can collaborate. Effectively, it is showing how the responsibility for action moves across roles. Indeed, using a flow diagram as the modeling metaphor is never going to provide an abstract representation of such processes –every time an organizational boundary changes (the responsibility for work), so the model would need to be adapted.
- On the other hand, Role Activity Diagrams provide a more sophisticated approach for modeling the interactions between abstract roles (whether they are inside the firm or external). Quite apart from being a much more compact notation, they also support multiple threads of interaction within the same model.
22. See “Issues and Best Practices for the BPM and SOA Journey” by Derek Miers, available at www.bpmfocus.org.
 23. John Seely Brown and John Hagel point out that while 95% of IT investment goes to support business process (to drive down costs), most employee time is not spent on process, but exceptions to process. Further, competitive advantage comes from how we innovate in handling exceptions. When something fails, informed and empowered employees turn to their social network.
 24. Further, there are issues where the “knowledge intensity” of the process is high, it is often impossible to adopt a single “standard” set of procedures to control all work. Employees would now have sophisticated guidance on how and where to exercise their judgment.

25. Of course, this also requires a level of maturity in the management culture to empower people to take these sorts of initiatives. From the management point of view, there are several prerequisites. First of all, management needs confidence that the group of workers is capable of handling the volume of work (they need to see that an effective process is in place). Secondly, individuals must be educated such that they would make the same sort of improvement decisions (as the manager would) based on the input data. There also has to be alignment around the objectives.
26. The loyalty and satisfaction of that customer suddenly rockets when they effectively resolve a complex issue. The fact that it might have cost slightly more is almost irrelevant, as now that customer is there for life. They become a net recommender. But this requires management to empower people to do whatever is necessary to resolve the customer problem. Handling exceptions differentiates the firm in the eyes of the customer. Yet in the majority of BPM Suites, the underlying objective is to avoid these sorts of exceptions at all costs.
27. I started highlighting the benefits of this approach in 1997. See the Business Case For Case Handling at <http://www.enix.co.uk/caseman.htm> BPMS products; the underlying objective is to avoid exceptions at all costs.
28. For example, Southwest Airlines looked at Formula 1 pit stops when studying how to turn around their planes more quickly.
29. "In 2002, Shell Lubricants reinvented its order fulfillment process by replacing a group of people who handled different parts of an order with one individual who does it all. As a result, Shell has cut the cycle time of turning an order into cash by 75%, reduced operating expenses by 45%, and boosted customer satisfaction 105% – all by introducing a new way of handling orders." Hammer, "Deep Organisational Change," HBR April 2004.
30. Too often, we think of the process as existing to support the document and data that are used already. In reality, these are merely the historic implementation details of some higher purpose process. For example, the "Ford Case" in the days of BPR where they realized that they could pay suppliers based on purchase orders that are delivered rather than invoice. Toyota takes this a step further and pays suppliers when they make cars (removing the purchase order from the equation).
31. "The Adaptable Corporation" by Eric D. Beinhocker, McKinsey Quarterly, 2006 Number 2
32. Use Role Activity Diagrams to model the process roles as areas of responsibility (abstract roles) rather than the discrete organizational posts involved. An abstract role has nothing to say about the post that fulfills that responsibility. For example, the Customer Service Representative might choose how that responsibility is allocated at run time.

Author

Derek Miers is CEO of BPM-Focus, following the recent merger of Enix Consulting Limited and WARIA. He is a well-known independent industry analyst and technology strategist who has published a number of white papers and product assessments. Over the years, he has carried out a wide range of consulting roles that have involved the provision of strategic consulting advice – from facilitating board-level conversations around BPM initiatives through establishing effective BPM Project and Expertise Centers to helping clients develop new business models that leverage business process strategies. Clients have included many of the world's largest and well-known financial services companies (banks, building societies, and insurers), pharmaceutical companies, telecom providers, commercial businesses, product vendors, and governmental organizations.