



Process Innovation and Corporate Agility

Balancing Efficiency and Adaptability

in a Knowledge-centric World

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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 organizes itself. This paper sets out to explore the 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 begins with a short discussion of the meaning of the words used around business processes before moving on to examine the increasing importance of knowledge workers in generating value for the firm. Focusing on the innovation imperative, it discusses service orientation as one component of corporate agility, before exploring how knowledge workers need the ability to exercise their judgment. We then delve into the potential implications for process architecture, organizational maturity and related management practices. Along the way 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 Suites in supporting 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 that you operate within 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 her judgment.

From a business process point of view, there are many subtle, but important, issues associated with these questions. On the one hand there is the efficiency objective, usually achieved through standardized procedures. Yet on the other hand, without mutation, there is only ever 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 firms 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). But in the end, customers are primarily concerned with the output—how well the organization understood their special needs and responded to them. It is these sorts of 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?

In the end, all sources of competitive advantage are temporary, and very few companies can create new sources of advantage after historic sources decline. Studies have shown 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.”¹ Or putting it another way, “nothing fails like success.”²

High performance usually implies process efficiency—where either superior value is generated from a given set of (human) resources, or the resources are reduced.³ 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 Business Process Management (BPM) technology is now emerging that enables firms to adapt their processes quickly to changing market demands while at the same time driving efficiency through standardized procedures.⁴ As a result, corporate agility is no longer just a pipe dream; leading enterprises are now experiencing the benefits of dramatic performance improvement, yet at the same time, they have the ability to turn on a dime and re-deploy 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 get 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 towards a goal.”

But when you hear business strategists suggesting 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—they exist 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*, deriving 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 org chart and functional silos), the steps and activities that go on within each department, and 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—we have a problem of dialect. In the abstract domain of business processes, unpicking exactly what people mean can be very difficult.

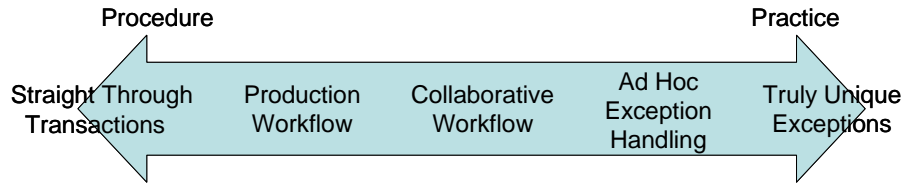


Figure 1 - Process as a Spectrum

It is best to think about process as a spectrum—at one end focused on efficiency (“Procedures”), at the other end 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 through the process is probably governed by a certain degree of procedure, elements of which will involve people making 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). In the end, the sales transactions involved in delivering the drug to market will be procedurally defined, as will the relationship between sales demand and production.

And if we look at 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 which can be usefully automated, and other activities that require judgment and practical reasoning of various kinds.”⁵ For example, the roles of business professionals (lawyer, accountant, architect, etc.), are often prescribed, yet the individual can sometimes override the standard operating procedures in order to drive the work forward (of course they are then answerable for their actions).

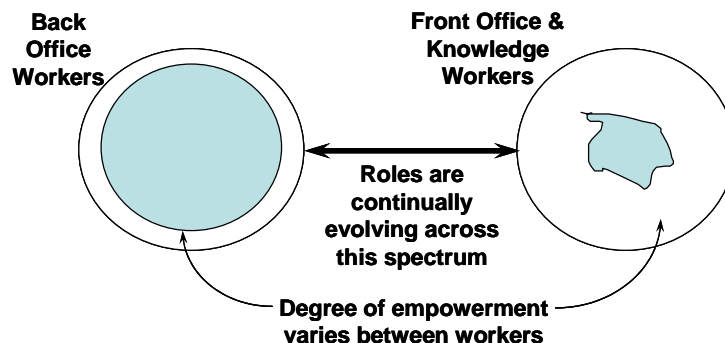


Figure 2 - Individuals within given roles continuously evolve across the empowerment process spectrum from procedural control to practice

This spectrum of process is even more complex when you look at how an individual builds experience over time, and the level of empowerment they enjoy. It does not matter which role one looks at; when someone starts in a new position, they tend to follow the rules.

After 3 months, they might have a good feel for those rules that are important and those rules that are safe to ignore or break. After 3 years of experience, they may even help establish the rules that govern their position (even though that individual has not changed jobs).

So how do you go about modeling and communicating degrees of empowerment? What is the best way of designing a process that caters to individual discretion yet delivers the efficiency required to compete effectively and scale? How will a BPM Suite know that this 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 supporting 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 destiny with regard to the way that work is managed. Where once the processes of the firm 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 detail. In a very real sense, the ability of the workers to innovate was suddenly 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 towards 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 understanding how they deliver “value” is no longer part of their job. 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.⁶

In his 2004 HBR article “Deep Change—How Operational Innovation Can Transform Your Company” Michael Hammer argued that breakthrough innovations in operations—not just steady improvement—can destroy competitors and shake up industries. He pointed 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.”⁷

Hammer went on to describe how firms such 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 to understand is that rather than blindly following existing procedures, coming up with entirely new ways of doing things is the realm of empowered knowledge workers, exercising their judgment and experimenting.

Surprisingly, the upper echelons of management are largely aware of the importance of knowledge workers. In a recent McKinsey survey, 76% of respondents felt developing knowledge was either very important or important. 81% felt 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.⁸

However, as the basis of competition shifts, it is necessary to learn and quickly develop new things rather than cling hopefully to the sources of past 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.⁹

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). And 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 liked and disliked? 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.¹⁰

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.”¹¹

It is these knowledge intensive processes that are most likely to benefit from innovation, yet are 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, with the ability to change the way work is handled to suit the needs of the case in hand.

So while BPM technology drives efficiency through standardized processes (reducing resources and lowering costs), the real benefits derive from enhanced corporate agility. But 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.¹²

As Lucy Suchman puts it: "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 in to 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 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 (sidebar)

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

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 both 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, but 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 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 (independently of each other).

Prior to the implementation of a BPM Support system, IDA employed 4 research assistants who did nothing but assess status of the work at hand. Since implementation, two of those research assistants have now become fulltime research staff members carrying out evaluations—i.e. their new jobs are 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, studying the process and analyzing 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

But 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, no matter how trivial they are, they are addressed quickly. If the solution to a particular problem generates new insights, these are deployed systemically. And managers constantly develop and encourage their subordinates’ to design, improve, and deploy such improvements.¹³

“It is what we think we know already that often prevents us from learning.”¹⁴

To understand why some companies are more adept than others it is useful to consider an organization’s business process maturity. Mature organizations, such as those promoted by Hammer, are able to adapt quickly. Take Dell for example, their ability to cut unnecessary cost from the supply chain is legendary. Another example is FedEx, who now know so much about their delivery process (logistics), that they can give a customer a choice of times when the package is to be delivered.¹⁵

An organization that does not yet have basic management controls in place to deliver products on time or achieve predictable quality will struggle to maintain its customers. Their 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.

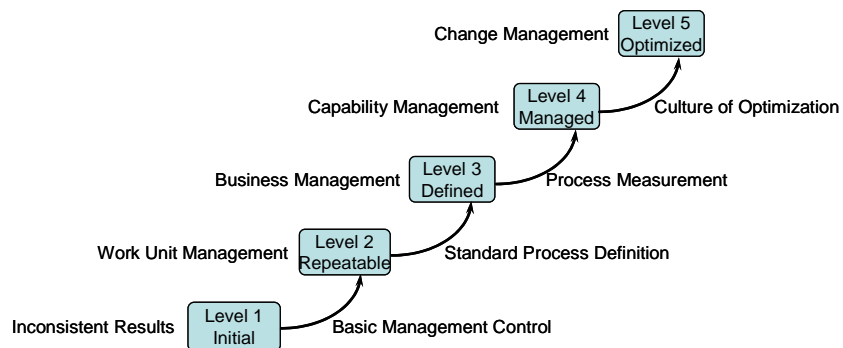


Figure 3 - The Capability Maturity Model is being adapted into a Business Process Maturity Model (BPMM) to explore organizational maturity around processes¹⁶

As an organization moves up the BPMM ladder it looks for the best practices (the one that produces the most consistent results), and stabilizes the way work is carried out around them (Level 3). This will help to achieve some sort of economy of scale and provide 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 improves 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 data on KPIs is so good 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 different 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 6 months then they 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 the New Product Creation process (their product portfolio was criticized by analysts for missing the trend towards clam-shell phones), the net result was a \$20 billion dollar 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, priorities, with changing missions and charters.¹⁷

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."¹⁸ 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.*¹⁹

Further, 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. 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.²⁰ 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 tease apart 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 of 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, over and above those possible with a traditional flow diagram.²¹

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 benefits from SOA thinking. On the other hand, SOA aspires to underpin business agility, yet it is fundamentally an approach to IT integration.²²

The BPMS 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 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 BPMS 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 BPMS products will provide the ability to pull all information related to the case, including analytical information about business execution (and exceptions²³), 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 them to exercise their 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 sub-processes 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 also given explicit guidance on how to tailor the process.²⁴ 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 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.²⁵ 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 the objectives of management. 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, outsourcings 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 become 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—especially when it comes to using BPM Suite technology. When one looks at the sort of approaches taken 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 (see sidebar) is an example of just 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 instantiated) 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 life.
- **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 an appropriate BPM Suite. Of course, participants need to be empowered to make opportunistic incremental improvements to suite the case in hand. With suitable review policies it becomes possible to continually improve the process 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 may make sense to re-use 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. Indeed, 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).²⁶ 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.²⁷ 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 run time; either by selecting them from a library, or by developing new ones. The idea is that empowered knowledge workers can then selectively over-ride 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 BPM 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. While this is fine for the 80% of cases that may follow the standard process, it means that all potential exceptions require definition a priori.

As process maturity increases, process modelers realize they have to find mechanisms for building in better run time 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 re-use 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 then enables the publishing and reuse of these components to ensure the services are discoverable. And from there, it is not such a big step to realize that these services need not always sit inside the corporate boundary. Web Services are facilitating this transition as they work over HTTP and therefore transparently allow service interactions to pass through an organization’s firewalls.

However, while this transition to outsourcing and service provision will help to drive innovation and long-term organizational agility, it 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 will become concerned about security. The challenge turns into minimizing the opportunity for fraud. Again, the BPM Suite provides 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 pre-conditions 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 process is 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 invention. 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).²⁸*
- ✓ *To generate radical or innovative processes, challenge employees to look beyond the conventional.*
- ✓ *Instead of seeing exceptions as problems, regard them as a way of managing the need for process change, handling new ways of doing things.*
- ✓ *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, when of work.²⁹ 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.³⁰*
- ✓ *BPM Suites are making the firms 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, re-usable 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.”³¹ Modeling processes as abstract role interactions helps to break the bounds with existing functional processes.³²*

Conclusion

While Business Process Management and Service Orientated Architectures have been touted as enabling corporate agility, there is a big difference between the hype and the 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 culture and the needs of the business, finding 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, however, 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.

About The 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, publishing a great many white papers and product assessments. Over the years, he has carried out a wide range of consulting roles 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, telecoms providers, commercial businesses, product vendors and governmental organizations.

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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 "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 p.m. 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.routhtype.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 focus on how things moving through the process change state.
- Capability models to look at the process as sets of re-usable 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 "swimlanes" 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 BPMS products, the underlying objective is to avoid 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>

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 take this a step further and pay 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.