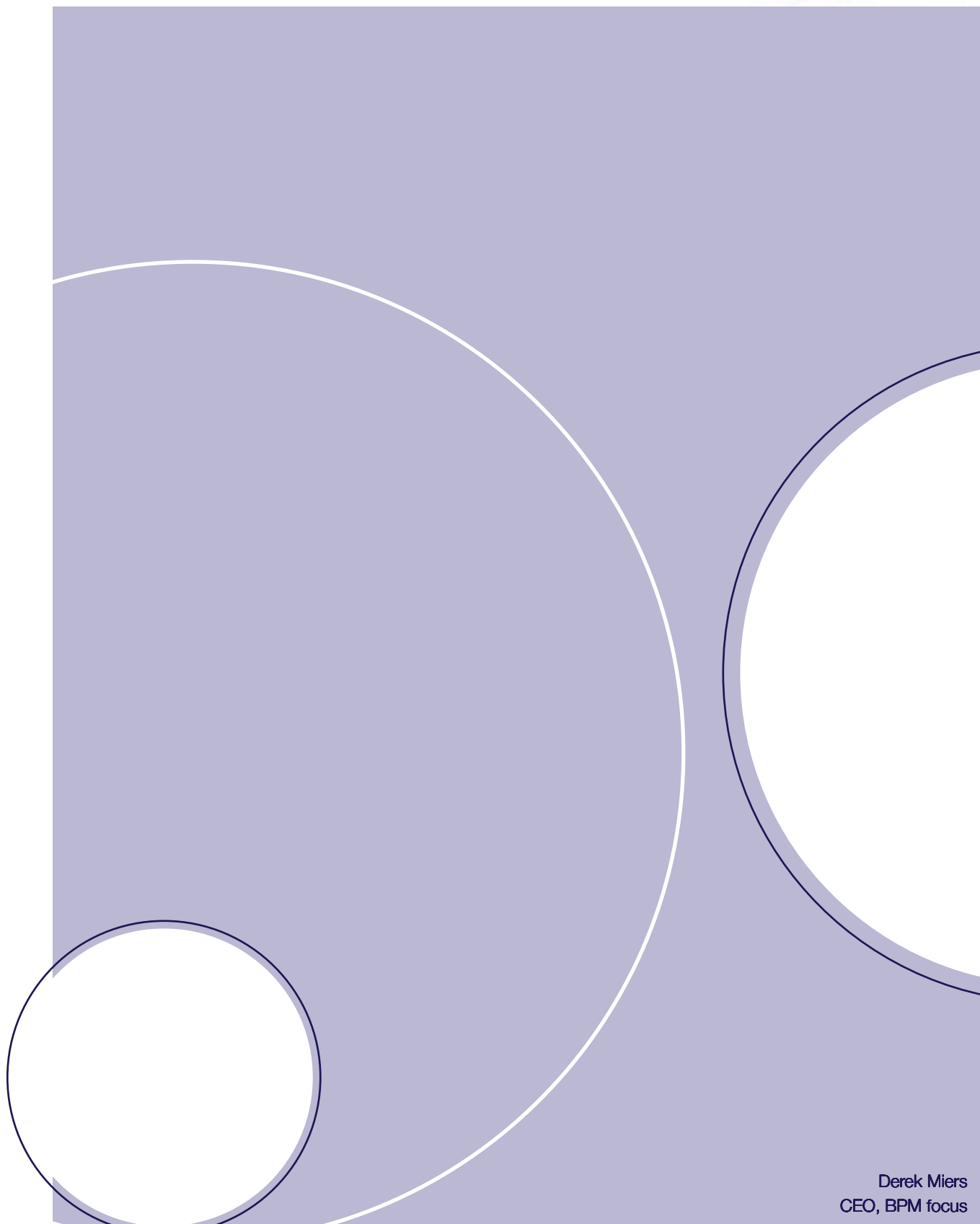

Business Processes and Customers - Difficult Domains to Integrate



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Introduction

Despite spending many billions of dollars on Customer Relationship Management projects, poor customer service is still pervasive. Those projects that have succeeded have recognized the central role of a process-oriented approach. By understanding and supporting both the processes within the organization and those that exist between the firm and its customers, the enterprise can reduce costs, take agility to the next level, and at the same time, build truly effective relationships that customer's value. (1) The net result is top line growth at the expense of competitors, all the while driving down costs.

With the advent of self-service digital channels (ATM machines, the Internet and mobile phones), the underlying nature of customer interaction management has changed. Successfully managing and integrating customer relationships into the processes of the firm, now implies much more than merely sifting through past interaction patterns or ensuring that every employee uses the same dumping ground for their customer notes. As customers take more and more control over their routine interactions (self-service), those situations that do require contact with humans increase in complexity.

By necessity, the processes associated with these interactions become far more sophisticated. And alongside them, the characteristics of customer contact-center applications have necessarily evolved. The best customer interaction applications deliver a blended environment that enables an agent to mix and match procedural fragments to suit the needs of the case in hand. Empowered employees exercise their judgment as necessary, yet they also benefit from process automation and rigorous oversight offered by a modern process enabled platform.

The Failure of CRM

CRM projects fail for all the usual reasons—lack of business ownership, bad project management, poor integration, unrealistic expectations, etc. Yet many firms are still in denial, as evidenced from a recent survey by Bain & Company of the customers of 362 major companies. Only 8% of them described the experience delivered as “superior,” yet 80% of the companies involved believed that the experience they provided was indeed superior. (2)

But CRM initiatives also fail because they address the wrong issues. For example, there is an assumption that merely gathering the history of customer interactions into a single system will help improve the relationships. Or that gathering notes about a customer will help employees

work out what to do next. Some analyze customer behavior patterns, in an attempt to maximize the share of wallet, yet individually, we hate being on the receiving end of the sort of push-based interactions that result (junk mail, spam, nuisance calls). Perhaps the firm does gain some benefit—if the starting point is the complete chaos that results from every customer-facing employee doing things their own way.

Of course, the only sustainable route to success involves getting to grips with the processes of the firm. The organization needs to first understand its processes, then actively support the customer and guide its employees. But the underlying nature of customer interaction requires a radically different approach to how we think about process. These processes are about rapidly evolving interactions rather than the nice, neat procedural forms that dominate transactional systems.

The real problem is that modern customer-facing workers need to capture the customer's intent; and then have systems that track and support problem resolution, applying constraints on their actions in a balanced way.

This presents a problem for the majority of CRM applications. These products are essentially monolithic applications with a fixed user interface and only a loose association with some back-office “process” capability. Moreover, to truly support the needs of a customer interaction agent requires facilities that go well beyond mere transactional automation. Traditional CRM systems provide negligible support for the processes of customer interaction—i.e. the dialogue with the customer is not model driven, the user interface is set in stone (code).

The point is that the business processes that exist between an organization and its customers are quite different from those that one finds in the transactional systems. Treating the customer interaction processes in the same way as transactional systems completely misconstrues the problem. It is simply not possible to develop end-to-end procedures that support the adaptability required at the coalface of customer interaction. When customers are involved, processes are no longer predictable. Instead, they unfold dynamically.

Neither is it merely a question of routing case documents to the right employees on the assumption that they will do the right things. All that is happening is that a workflow engine is managing a simple set of states. The user embeds any unhandled complexity in the documents themselves. Other workers must then deduce the context (by reading and interpreting). Other than at the

simplistic level, there is no visibility into the actual work process needed. As a result, employees must carry all of the idiosyncrasies of the process in their heads, leading to highly variable outcomes and user experience. Furthermore, new employees still have to go through a significant learning curve before they can handle complex cases.

Simple procedural automation and document management approaches fail to recognize the nature of the processes that exist between an organization and its customers; especially if those customers are consumers. Consumers seldom want to follow the prescribed path. If the bank will not deal with us as individuals, we are always free to take our business elsewhere. And increasingly, today's consumers are finding it easy to exercise that sort of freedom.

So in a sense, the whole notion of CRM is flawed (at least in the way that the technology support is usually implemented). It attempted to control customer relationships, when the reality is that customers are the ones in control. All a firm can do is facilitate the relationship, and hope those customers will value the ease of use and utility of its services, such that they return next time.

So in one sense at least, success is not so much a function of how well the firm manages its customers—rather it is based on how well they use technology to enable the customer to manage the relationship with them.

Outsourcing to the Customer

Successful customer interaction innovations spread like viruses. We now expect to be able to track our packages

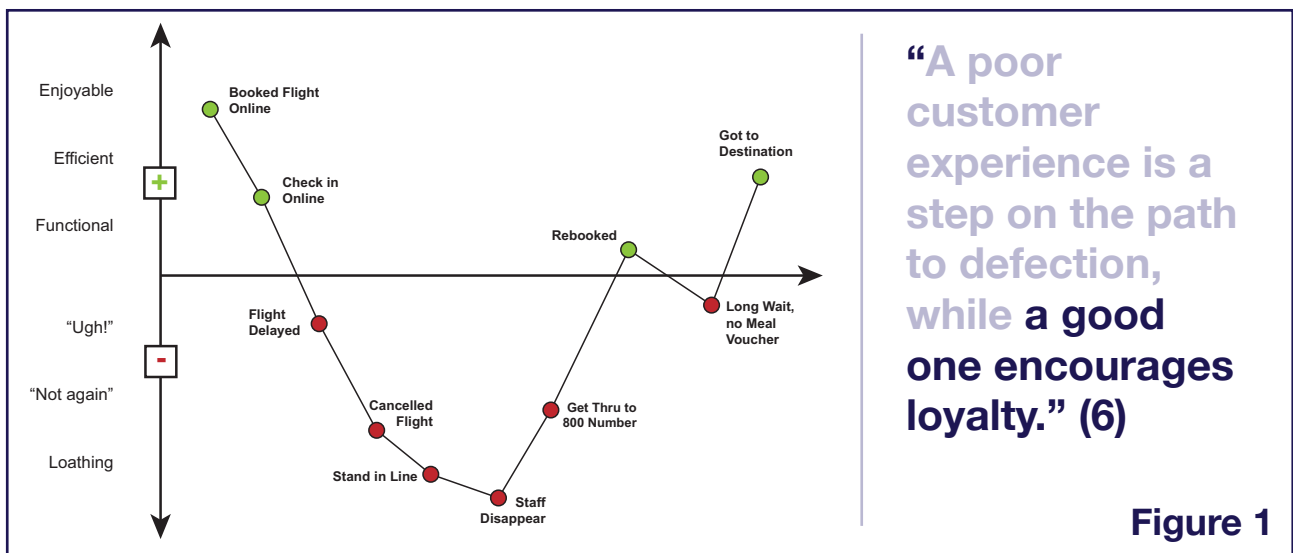
when we ship via FedEx (rather than having to ring and check). We take it for granted that organizations such as UPS, DHL, and even the US postal service enable us to track our parcels and packages. And each time a customer looks up the web, the firm saves money. Facilitated by the use of technology, they have modified customer behavior—it is now more convenient and accurate for us to track our own packages. Indeed, any competent logistics firm now “outsources” this service interaction to the customer. (4)

Of course, this sort of innovation is prevalent in lots of other industries—Dell saves the cost of handling the call every time a customer uses the Web. Those who have become comfortable with the Internet now prefer to book travel directly, and manage their funds at the bank. As consumers, we expect an online electronics store to provide an order status and delivery tracking capability.

At the heart of all of these sorts of digital innovations is a profound understanding of interaction processes and the needs of customers. But the customer is just not interested in hearing about our standard procedures; they want their problems and issues dealt with as quickly and efficiently as possible.

Figure 1 – A Flying Experience (5)

This observation points to the current state and direction of customer interaction management. Where possible, automate processes, giving the customer self-service options. As shown in Figure 1, the customer experience is positive when they are in control. But as any business traveler can attest, it is when things go wrong that firms really differentiate themselves—the airline could train its staff to avoid taking their coffee break in such circumstances, but rebooking 379 passengers and their



onward connections at the gate is just not effective. So there will always be a need to provide a balanced set of customer interaction channels.

“A poor customer experience is a step on the path to defection, while a good one encourages loyalty.”

In any large consumer oriented business, the call center is clearly a necessary part of the channel mix if one is to build and maintain customer satisfaction. While re-booking a complex flight schedule has its own complexity issues, these involve essentially straightforward changes to the underlying booking system. In the services sector however, rather than dealing with mundane repeatable transactions, the customer service representative is now handling increasingly sophisticated issues; issues that often have immediate importance to the customer. In the banking world, many of us find it easier to look up the account balance ourselves online (or at the ATM machine). But resolving a pension query requires more sophisticated support that only humans can provide.

The point is that, as customers take more control over routine interactions, the situations that do require human contact become more complex. They are now often exception based—i.e. no longer following some relatively predictable pattern and will often require specialist support. Coordinating the relevant resources to respond to the customer at the point of need becomes inordinately more difficult as the business scales.

It is worth noting that achieving the right channel mix can have a massive impact on the bottom line. For example, consider Sampo Bank in Finland. In January 2000 just 33% of their customers had used the Web to interact with the bank (which was advanced for that point in time). By August 2005, 85% of customers use the web. The self-service ratio is now approaching 99% for certain classes of transaction (by volume). Cost per transaction was down 79%. When considering the distribution of costs, the Web bank facilities consumed just 8% of the budget. Rather than closing branches, they nearly doubled the number of branches, while also increasing customer facing personnel where they were needed most (in the branch), leading to an increase in overall customer satisfaction. Yet, at the same time, Sampo still managed to reduce overall headcount by 22% (7). Achieving these figures involved developing a coherent customer interaction strategy that incorporated all relevant channels (see Figure 2). They also had to help their customers change their behavior.

Contrast this example with the efficiency driven tales of

woe that we have come to expect from most major banks. Many financial services firms see only the costs associated with their bricks and mortar branch network, without considering the implications on the wider customer experience.

But banking is not the only sector to have recognized the benefit of self service offerings. Take ScottishPower, one of the United Kingdom's “big six” energy providers. In 2005, the company deployed a BPM-based Online Energy system designed to enable its customers to better manage their energy accounts and reduce paper bills. Users enter their meter readings and can then access, pay and amend their bills online. Within a week of deployment, inbound telephone calls to the contact centre fell by 25% and inbound emails fell by 40%. The volume of completed customer applications increased by 22% and the volume of requests for bills to be issued decreased significantly. By 2007, an independent comparison site uSwitch.com had recognized ScottishPower as having the best online service of all the UK's energy providers.

Channel Hopping

As each aspect of customer interaction management is understood and resolved, new challenges appear. And the more one looks at these problems, the more complexity one encounters.

Consider the plethora of devices that enable access to Internet based services. We started with ATM machines and IVR mechanisms. Then along came the Internet with secure web sites, which has now expanded to include outbound email, Voice over IP integration, Instant Messaging and even mobile phone access. As firms start thinking about supporting this wider range of channels, so the complexity of process support goes up.

Quite naturally, customers want to hop from one channel to another within the context of a case. But the problem is that while focusing on processes is the right overall direction, few firms have successfully moved beyond simple account lookups, balance transfers and order tracking situations (see Figure 2).

Consider the scenario where a potential bank customer initiates a process on the firm's web site, follows it up with a telephone call to check status, and then wanders into a brick and mortar branch to deliver some related documents. She then wants status reports via text message to her mobile phone and later expects to check the transactions on her account from anywhere, anytime (browsing from the mobile phone or the web) and may want support from a suitably qualified specialist from

within the middle of one such a session.

So we now have a situation where the process engine needs to underpin the customer interaction portal, coordinate inbound calls, invoke an online chat (implying the assessment of skills of available workers in real time), right through to booking and supporting the face-to-face meeting inside the bank branch.

Empowering the Knowledge Worker

For increasingly knowledgeable workers dealing with ever more complex customer issues, the challenge is to capture the customer’s intent and deal with exceptions; all the while, moving across channels and proactively spotting potential problems and/or opportunities to add value.

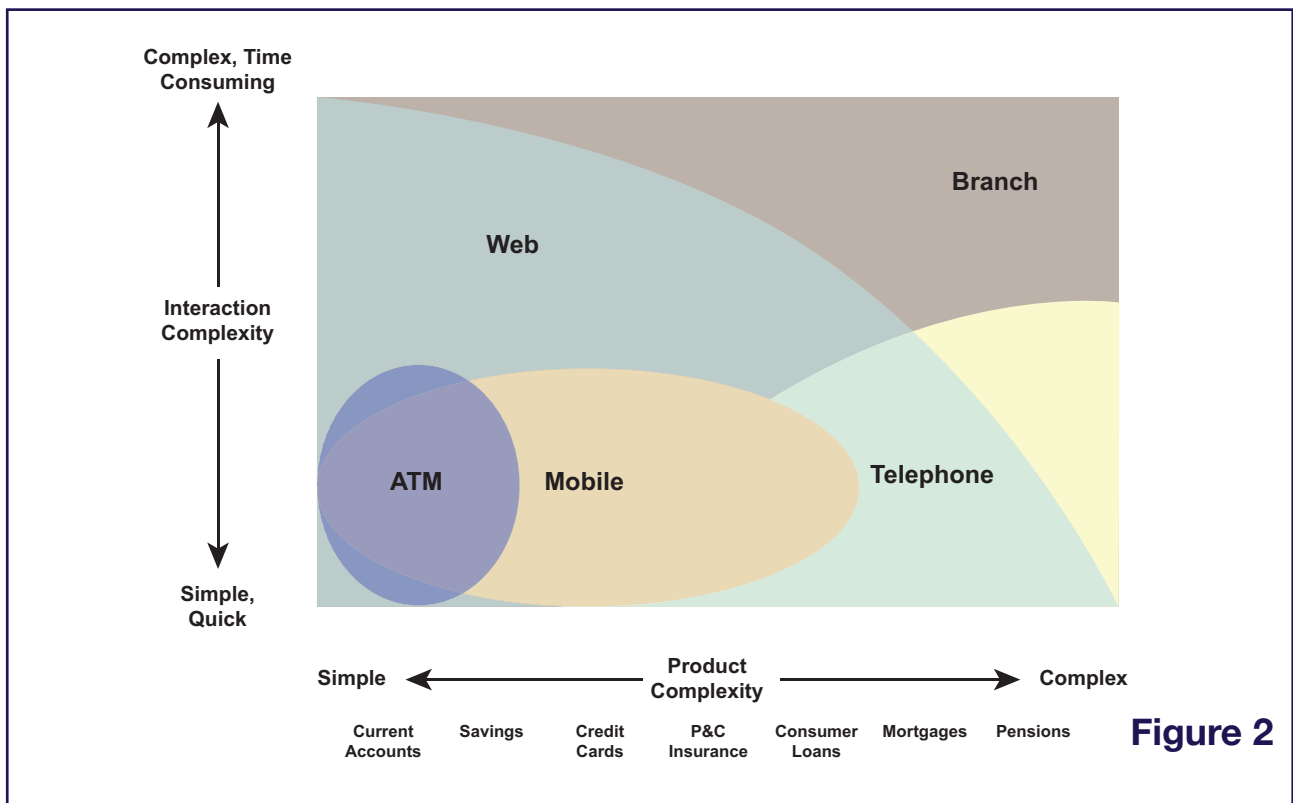


Figure 2 - Product and Interaction Complexity in Financial Services

Figure 2 depicts a (future) financial services company that has sensibly applied a channel reconstruction strategy to its customer relationships. Where possible, interactions are handled via digital channels (the Web, ATM, mobile device) but these are augmented and supported by humans in the call center and in person contacts within the branch.

Table 1 - Choosing the Right Channel

Clearly, it is no longer a question of being able to predict, or control, a customer’s desire to switch between channels. But one thing is certain—customers are becoming more mobile between channels. Furthermore, some will expect to switch products or services inside the context of a single thread or segment of the interaction process. Remember, it is the customer, not the company, who will seek to dictate when, and how, these changes occur.

Customer satisfaction is essentially the culmination of a series of customer experiences or, one could say, the net result of the good ones minus the bad ones (8). Yet many firms have little sense of the contributing factors that lead to lost customers (see Figure 1 – A Flying Experience.) Clearly, having empowered staff to handle the points of contact, there is a better chance of understanding their real issues and, in the end, retaining them.

But when thinking about how to respond, there are many issues to overcome. Some firms will struggle at the cultural level; their managers still see their role as directing the work of subordinates (micromanaging them), rather than trusting and empowering them to do what is necessary. Others will decide that it is just too difficult, seeing customer interaction as a cost (that is best outsourced to a specialist supplier). And as we have seen, when the customer takes more and more responsibility for their own

Branch	Telephone	ATM	Web	Mobile
Transactions of all kinds	Branch Support	High Volume	Wide range of Services	High Volume
Complex Products	Complex Products	Simple Products	Simple and Medium Complexity	Simple and Medium Complexity
Complex Transactions	Simple Transactions	Very Simple Transactions	Routine Transactions	Simple Transactions
Highest Cost	Medium Cost	Do Have Costs	Lowest Cost, Massive Scale	Lowest Cost, Leverages Web
Mortgage or Pension	Credit Card, Insurance	Withdrawals, Transfers	Account Management, Statements, Payments	Accounts, Transfers, Payments
Sales and Advice	Routine Queries	Routine Queries	Self-Service, Ad Hoc & Real Time Queries	Self-Service, Ad Hoc & Real Time Queries Anywhere
Deals with a knowledge worker	Deals with a customer service representative	Consumer does not trust unfamiliar promotions and services	Convenience & control, compliments all channels	Convenience independent of location, will take over eventually

Table 1

interactions with the firm, the nature of work carried out in the call center evolves. But the call center was originally set up to handle essentially mundane transactions. And yet the modern call center is now handling far more sophisticated problems—work that was once handled by some back office specialist.

For those firms that see the opportunities presented by effective customer interaction management, they must now start to think about how to make their employees as efficient and effective as possible. The core of this challenge is striking the right balance between on the one hand, prescriptive procedures and control, and on the other, flexible and adaptable work practices. Furthermore, while we tend to think of these processes as fixed input-output chains of activities, this represents just one side

of the coin. The other aspect is all about interaction—between the customer and firm; between the different elements of the system; between the employees; between the employees and their processes.(9)

Even understanding customer interaction processes presents a problem. Indeed, interaction processes present a quantum jump in complexity over the traditional notion of business process—see the note above (Number 9) and the side bar “Best Practice Observations in Customer Interaction”. When looking closely at the nature of work, one discovers that it is inherently distributed and collaborative.

As a result, the underlying sophistication required in any supporting technology is considerable; sophistication that most vendors in the BPM space barely recognize, let alone support adequately. The technology must now provide facilities for employees to exercise their judgment, empathizing with the customer and capturing the underlying issues that the customer cares about. Employees need the flexibility to handle the wide range of concerns that may present themselves (many of which are impossible to predict a priori), and then the technology should enable them to efficiently and effectively resolve those problems.

Where a customer has identified several issues that require resolution, these must be linked together to ensure that all are dealt with (before the case can be closed). While a bank may have a procedure for handling a change of address, closing an account and creating a trust fund, it probably has not developed a procedure that handles a customer letter describing a divorce settlement. This letter-from-hell (or phone call) scenario might include an outline of the change of circumstances, instructions on the change of address and closing the joint account held with the spouse, and asks for an educational trust fund created for each child. Of course, the letter forgot to mention the jointly held mortgage or the pension fund.

All of this sort of activity must happen within the bounds of defined business rules and prescribed procedures—i.e. there is a balance to be struck between control-centric procedures and evolving, adaptable “business practices” where the employee is in control. In this context, a business practice might be thought of as a guide to the employee, but without the rigid control that normally goes with such instructions in a workflow system.

Best Practice Observations in Customer Interaction

- Think about the customer’s usage of the products or services. Look for situations where the firm can help the customer solve a problem, achieve a goal or satisfy a need. Think about “designing” those experiences.(10)
 - Consider the life-time relationship as series of “touch points” between your organization and the customer (11). Each touch point could be thought of as an instance of contact (direct and indirect) between the customer and your organization.
 - Examine each touch point to identify those processes that lead to customer defection (12). This will help identify problem areas and processes that require knowledge worker assistance.
- Where possible, the objective should be to remove the

need to interact with humans for routine transactions and status enquiries (to reduce costs and the risk of error).

- If possible, enable customers to link their systems directly into the transactional component of your BPM Suite to increase efficiency. (13)
- Remember to listen to what customers want and need, and gear the systems to customers’ level of tech savvy (or lack of it).
- Treat each potential type of touch point as a unique “interaction process” and then dissect each as a set of potential conversations. (14)
 - Define each of these as abstract role interactions—between an abstract notion of customer and a defined organizational behavior or capability (i.e. not the static organizational structure role). (15)

This will later enable the dynamic binding of these abstract aggregations of responsibility to the individual carrying out the organizational roles (i.e. different people in different positions can assume the same organizational “hat”). It will also enable the reassignment of this responsibility to an external organizational role, should this become necessary.

- Where possible, look at supporting each of these conversations directly using the full range of digital channels available to the organization.
 - For most businesses, there will be a great many potential types of conversations and it is probably worthwhile taking some time to assess which are the most pressing. (16)
 - Consider each channel in the context of both “Inbound” and “Outbound” communication, and then assess the customer need in the context of both “Assisted” and “Unassisted.”
 - Treat each channel interaction as a distinct “interaction protocol” (effectively a “process object” or “process fragment”), integrating each of these into an overarching (end-to-end) process that supports the long running state of the case across all required channels.
 - Ensure that the BPM Suite captures and stores relevant events and milestones. Events act as triggers for interaction, while milestones can be used as points where you will provide updates to the customer (or allow a hop from one channel to another).
 - Explore the opportunity to personalize the user experience. Consider both “collaborative filtering”
-

approaches (to develop generic profiles) and then start using them to predict customer needs in real time (based on evolving profiles of the individual). Use these to adapt the user's capabilities.

Technology Support for Customer Interaction

So what combinations of technology features can support the modern knowledge worker in customer interaction? What sort of process architecture is required—delivering the right balance between adaptability and compliance, yet also providing the scalability needed? How do the vendors stack up?

There is a small subset of vendors who have developed effective platforms for customer interaction—factoring in support for the adaptability and volume handling aspects. But as discussed already, despite the claims of the CRM vendors, their products run out of steam when it comes to handling these customer interaction processes in any meaningful way. Similarly, the large majority of BPM Suites and Workflow vendors claim their product supports effective customer interaction, yet developing appropriate facilities is usually virtually impossible or requires significant design skill.

Before making a comprehensive assessment, it is useful to first examine the spectrum of functionality that is needed when supporting customer interaction. Here we are especially looking at the process oriented functionality required to support comprehensive customer interaction (referred to as “Case Handling”).

Collaboration

Employees need mechanisms to interact with their peers to resolve unforeseen exceptions (all of which will need to be captured and recorded for audit and regulatory purposes). Those involved in carrying out the work will often need to engage in ad hoc collaboration (potentially in real time). To meet this need, most people rely on email as it can easily accommodate the unfolding process. But with email, things can easily drop through the cracks. Moreover, email is lacking in traceability and visibility is only available to those who are directly involved. (19)

Of course, the individual charged with resolving the case at any point in time will need access to all the relevant information (the context of the case). Some of which may be shared with other cases. Hence, integrated document management becomes a necessary component. And for most firms, the shared repository of documents and email are the only mechanisms available for ad hoc collaboration—i.e. they rely on people to resolve issues

(outside the context of the process).

Alongside that document management system, several vendors provide threaded discussion groups. Employees access a free form discussion that captures the conversation (previously conducted via email). In this scenario, knowledge workers embed their interpretation of the context in the discussion thread, perhaps documenting the reasons for a particular decision.

There is another option for collaboration. Some firms are integrating Instant Messaging (IM) systems into their web infrastructure, enabling their customers to interact directly with the relevant individual who is available to handle a specific problem. But to achieve this implies use of “presence” detection technologies, crossed with accurate skills profiles for employees and the ability to assess the context and complexity level of the case in hand. In much the same way, employees might also seek help from specialist resources (who may be external to the organization).

Case Handling & Process Adaptability

Obviously, a successful customer interaction platform needs to provide support for employees interacting with customers at every touch point. It also needs to link back into every role and individual involved in delivering the product or service (right through into supplier organizations).

But perhaps more importantly, to meet the challenges of knowledge workers at the sharp end, it needs to deliver an evolving way of doing business; one that adapts over time in line with the needs of the user. Of course, it should drive efficiency, but at the same time, it should also have the underlying flexibility to enable the empowered worker to step outside of the boundaries of the prescribed process and go that extra mile for the customer (who is the one normally driving the exception). See the attached note for a wider discussion of common BPM Suite process support features.(20)

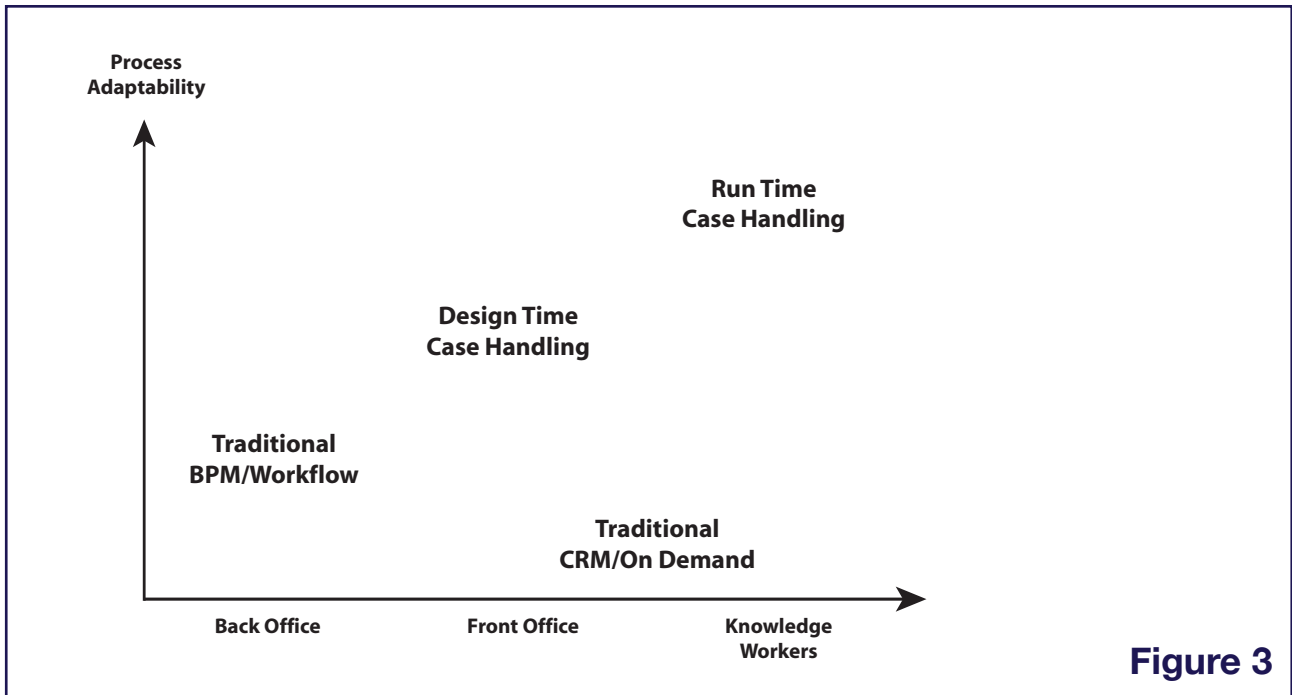
For Case Handling support, the key differentiating factor (of the BPM Suite) is the ability to link multiple processes to a given case of work—the primacy is with the case of work, rather than the processes that are used to support it. Each case is usually “managed” by a relatively loose (high-level) parent procedure, but the worker can then 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. (21)

Figure 3 - Different classes of user need differing levels of adaptability

In older products, this sort of facility is achieved through a set of sub-processes (sub-maps) embedded within the parent process. Such an approach is not as adaptable

Others might require goal seeking behavior (looping until a certain state or condition is met).

Exploring the way in which a process object is actually bound to the parent, there are two possible scenarios—



as the more modern design approach where distinct “process objects” are developed beforehand and combined at run time. Think of each process object as representing an independent business service (process service). We refer to this as “Design Time” Case Handling—each discrete process object is developed in advance and tested to ensure that it functions appropriately (usually by specialist process developers). Access control mechanisms are then used to control the degrees of flexibility delivered to end-users.

Constraints On Binding Process Objects

There may be constraints on how a process object or service is used. For example, the “Take a Witness Statement” process object may be invoked many times at virtually any point in the overall case for an insurance claim. On the other hand, the “Pay Claimant” process object can only run once. Other process objects may have a different type of constraint, in the sense of when they should be bound to the overarching case process—at design time, at case instantiation, or at execution time by the end-user. Some process objects may have timing issues associated with them—e.g. goods must be delivered between 10 and 11 am on the 1st of June.

synchronous (where the process object must complete before work can move on) and asynchronous (where other threads of activity can be spawned in parallel).

Another approach is to incorporate pre-condition functions such that they can act as “checks” to ensure corporate policies are enforced. For example, in an insurance claims situation, a pre-condition style approach could allow a customer service representative to follow any number of paths through the process, yet would still allow the firm to ensure that the claim went through appropriate approval before any claim payment.

To handle the real world will also require mechanisms to handle batching, and branching, associated with the content of the process itself. For example, establishing a budget for a number of business units will necessitate each submitting its numbers before the overall budget can be created. Of course, the CFO will want ways of bypassing the requirement to merge all threads back together when one business unit fails to get its numbers in on time.

Utilizing this Case Handling approach, the empowered

user is now able to interpret the task in hand, invoking private/public process objects to complete the subtleties of that piece of work.

In this way, most cases can easily follow the “happy path”, while those exceptional items of work are dealt with differently. The point is that empowered knowledge workers now have a way of exercising their judgment; using their discretion to respond to the needs of the customer (without having to revert to the IT department for support).

The highest level of adaptability in Case Handling is enabled when suitably authorized end-users are given the ability to create their own personal process objects (fragments of procedure), and then apply them as they see fit. Alternatively, they may adapt either the “managing process” or other process object templates that are bound to it. We refer to this as “Runtime” Case Handling—where the processes themselves are changeable at run time. (22)

In a sense, this could be thought of as a type of “Process Wiki”. A range of suitable process objects are presented to users, who then select those that seem most relevant to support their current context, and adapt them as necessary (within a set of established constraints). The rules for those constraints could be based on a variety of factors:

- **Current Role**—the system needs to be smart enough to understand the degrees of flexibility defined for this specific user based on the role they are carrying out for this process instance.
- **Customer Value**—to allow an experienced customer service representative greater flexibility to make wider decisions.
- **Skill Level**—in a business related discipline.
- **Milestone**—at different stages of the process (once certain thresholds are reached), new avenues of flexibility may open up.

Effectively, a range of different flexibility mechanisms are required in the underlying process support environment, enabling the user to adapt how work is managed at run time. Of course, the user interface also needs to adapt in real time, creating a seamless user experience.

Furthermore, using neural networks and expert systems techniques it becomes possible to provide automated support for this, offering the customer service representative the most appropriate mechanism (based on the context of the case in hand and the history of how such cases were handled in the past).

In a sense, this is taking Case Handling and Customer Interaction to an entirely new level. The process support environment itself is suggesting when, and where, a process should be varied (and by how much). But for that to happen, the system itself needs to derive the context automatically, and then suggest approaches that were used previously to handle similar situations.

Of course, such advanced ways of thinking about process also imply a related set of management practices and behaviors. These might include:

- In order to ensure that process templates are kept up to date and in line with need, it becomes necessary to review process usage and identify common patterns of how the process was adapted. Again neural networks could support this activity.
- Ensure that the constraints on knowledge worker activity have suitable checks and balances to counter potential fraud. For example, embedding a rule that ensures two different individuals review an insurance claim before it is settled (with the system automatically assigning the second user in another physical office). One should keep in mind that with the system automatically keeping a full audit trace of all activity, the opportunity for fraudulent activity is significantly reduced.
- Developing a richer and more comprehensive view of process measurement—one that links more directly to Key Business Objectives.

The key point to understand about the Case Handling design approach is that it offers users great flexibility, while also allowing the firm a high degree of control. Moreover, it also provides a way of testing out new ways of working (applying new process objects), allowing the firm to directly assess the benefits before widespread roll-out.

Scalability and the User Interface

Apart from the adaptability and user interface flexibility aspect, scalability issues are always going to be a problem for a large customer contact center—choosing the right platform is not as straightforward as it sounds. The data volumes involved are often quite staggering. Furthermore, ensuring that the appropriate information and images (i.e. the right context) arrives for the right worker, at the right point of customer interaction, is extremely challenging when sub-second response times are required.

Keep in mind that while delivering application functionality in a scalable way is relatively easy with rigid transactional systems, it becomes extremely challenging when knowledge workers are exercising their judgment at the practice end of the spectrum in a blended BPM/CRM environment.

Furthermore, while many BPM Suite vendors are interested in developing Case Handling capabilities, very few of them deliver anything meaningful out-of-the-box (although with careful and sophisticated design, Case Handling functionality is possible with some of these platforms). Since it is possible to do just about anything with computers as long as you write suitable programs, the core issue becomes how the product supports this type of functionality.

One of the key things we would look for is a dynamic user interface that enables suitably authorized users to add process objects, documents and other entities to a case. Think of it as a palette of things the user is likely to want to do. Dragging the process object onto the canvas binds it to the case and instantiates the process fragment with the correct context. This is not the same as launching the modeling tool and asking the user to manually bind a new sub-process to the parent (which is a less accessible way of achieving the result).

The user interface will also need to deliver a number of complementary views of the work in hand. For example, a single view of the case is certainly needed, along with product, process and customer-oriented views. Rather than interacting with a monolithic user interface layer that has some semblance of process underneath (old-style CRM products follow that pattern), a process driven user interface is needed to create a flexible and adaptable user environment. The old approach enabled the ability to transfer work between departments (through the workflow functionality), but did not allow process to drive the dialogue or the discussion with the customer. And of course, in a large customer interaction center, the platform needs to do this efficiently and effectively.

The point is that it is no longer good enough to deliver lists of discrete tasks and assume that the user will work out what the next piece of work is all about. The user interface itself should support the requirements of the user in the current context—i.e. based on the needs of the case in hand, and the degrees of flexibility extended to that individual operating in that role and in that context. Taking that only a little further, it is just a short intellectual step to dynamically generate the customer's interface to the firm directly (via the web site).

Vendors

When it comes to looking at the current crop of BPM/CRM vendors a few stand out from the crowd of workflow and document management tools. Although there is no defined "category" for these types of products, they deliver a blended BPM-CRM capability that the more traditional

BPM players only dream about.

To qualify for that blended BPM-CRM status, products need to provide robust support across the broad range of issues explored above. The factors are:

- A dynamically generated, process based user interface—in the customer interaction center and also the customers' portal on the Web (Extranet).
- Case Handling (dynamic process and rule binding)—with a balance between Design Time and sophisticated Run Time functionality.
- On the fly support for collaboration amongst employees, and between customers and employees (including skills profiling and presence detection).
- Scalability—delivering the functionality described above, but for very large numbers of users (and customers) in real time.

Vendors who differentiate themselves here include Graham Technology (ciboodle), PegaSystems (PegaRulesProcessCommander), and Chordiant (Customer Experience Cx™). Each of the products is interesting in its own way, with ciboodle the most tightly focused on this sort of high-end, customer interaction domain.

Many of the other BPM Suite vendors are interested in developing this sort of Case Handling functionality. However, their primary focus on standardized processes is also their undoing. They cannot handle the variability required at the sharp end.

Conclusion

The middle ground of CRM is morphing in two different directions at once—the first is toward automated self-service for customers; the second is around the expert knowledge workers applying Case Handling techniques to solve unique customer problems. While both ends of this spectrum are driven by process-based approaches, the established workflow and BPM-based approaches struggle to deliver on the dynamics and scalability issues that customer interaction presents. This has left the way open for the smaller, more agile process vendors who are concentrating on blending CRM and BPM to deliver the richness required for dynamic Case Handling in this demanding environment.

The more that the employee is constrained to simply follow a predefined procedure, the more likely they are to miss an opportunity to resolve a customer problem at a "moment of truth" (one that requires a variation in that procedure). At these points, the employee needs to respond to the customer intent, with a practice-based,

Case Handling approach.

This Case Handling style of process architecture is also applicable to a wide variety of other knowledge worker environments. Indeed, Case Handling represents a design pattern that can help organizations evolve and adapt more quickly than would otherwise have been possible (with procedural notions of process rigidly defined in advance). The point is that Case Handling may deliver the capability to serve a new or previously unattractive market — changing the dynamics of competition and potentially allowing the firm to disrupt another's value chain.

Given that the technology capabilities do exist (or at least are close to being resolved), what is needed is a sea change in thinking at the senior levels. But growing an organizational competence in process management is a long-term goal; it requires dedication and a certain degree of discipline. Factoring in customer interaction into such a transformation program is an essential component for long term success.

However, it is not enough merely to develop a technological solution, in the hope that customers will automatically use it. Changing customer behavior takes time. Success requires developing a comprehensive communication and engagement strategy to help customers make the jump. This will involve re-factoring corporate messaging, stressing the availability of these newly developed engagement options. And for those that invest in this direction, the long-term rewards are enormous.

Notes

(1) "Smart businesses have always realized that no matter how great their product is; customer loyalty depends heavily on the quality and outcomes of their contacts with the company. An approach that is customer-focused and responsive is still the bedrock of most successful companies." <http://knowledge.wpcarey.asu.edu/index.cfm?fa=viewArticle&ID=1307>

(2) Quoted in "Understanding Customer Experience" by Christopher Meyer and Andre Schwager in the February 07 issue of Harvard Business Review.

(3) From this point on we will refer to each customer interaction instance as a potential "Case" and go on to discuss the requirements for Case Handling.

(4) Some firms take this to another level. "... tells a similar take about shipper ABF. ABF allows their customers to reroute shipments enroute, if necessary.

The online application feeds directly into ABF's back-end shipping systems. Rather than sending a fax, or calling someone, ABF customers can manage their shipments themselves." http://www.windley.com/essays/2005/customer_starts_with_custom

(5) Adapted from a similar graphic in "State of the Nation IV: 2005" a five-year global study of how organizations manage their customers. Available from QCi Assessment Ltd at www.qci.co.uk.

(6) See "How to Approach Customer Experience Management" by Ed Thompson, Esteban Kolsky—Gartner Research, December 2004.

(7) Case study presentation by Risto Miettinen, Vice President, Sampo Bank – "The Sampo Bank Success Story" at The Future of Online Financial Services Conference & Expo 2005.

(8) Excerpt from "Understanding Customer Experience" by Christopher Meyer and Andre Schwager in the February 07 issue of Harvard Business Review.

(9) Think of a large system integration firm that often has literally thousands of associates working on a single client's problem (system) at once. In such scenarios, many things are happening in parallel. The point is how do you manage that (sort of problem)? Or, to put it another way, if your firm has literally hundreds of different functions that need to collaborate on major projects, just how can one coordinate the necessary resources. Clearly, process is the answer, yet most people still think of process purely in terms of input-output chains of activities (a concept borrowed from manufacturing). That notion of process doesn't help you too much when you are talking about the coordination of multiple actors, operating in parallel.

Indeed, any large business has similar challenges when attempting to deliver a consistent customer experience. Think of the challenges that an airline faces when trying to coordinate the various ground staff for your plane to take off on time. The baggage handlers have to be dispatched to the plane to unload the incoming baggage, then again with the outgoing bags. The operator of the jet way has to be there for docking and undocking of the plane, the tow wagon to maneuver the plane in and out of a tight gate, the gate staff to ensure that only the right passengers get on, the catering staff, the crew, etc. Now throw a spanner in the works with a last minute technical fault on the plane, which has to be fixed, validated and then signed off by the aviation authorities; all while the passengers are sitting comfortably yet becoming increasingly frustrated. And

that chain of actors is increasingly up and down the value chain, no longer constrained to the familiar boundaries of the organization where command and control principles apply.

Rather than purely input output chains of activities, one also needs to think about processes as composed of sets of “interactions.” This is the other side of the coin from the procedural notions of process that we are all so familiar with. Instead of focusing on the chains of activities with their (hopefully neat) sets of input-output documents, think about the protocols and agreements made between the actors. They represent the white space in between the functional silos, the hand-offs and commitments made from one party to another. Having understood the interface requirements for your process, you can start to explore how your part of the business (value chain) implements its portion of the process against that defined set of needs. Really we are talking here about the difference between “Process Orchestration” and “Process Choreography”

(10) It is probably worthwhile undertaking an analysis of the customer experience you currently deliver. One could consider developing a sort of “Maslow’s Hierarchy of Needs” as a way of understanding your customers’ motivations.

(11) The objective is to enable the customer to take control of each of these touch points, providing convenience and ease of use. The more seductive the processes at these touch points, the more likely the customer is to use them and as a result, the lower the cost to the business.

(12) These “moments of truth” are the critical impact points for customers. They can quickly become issues which, if not addressed, will grow into serious problems. See “How to Approach Customer Experience Management” by Ed Thompson, Esteban Kolsky—Gartner Research, December 2004.

“That spark and the emotionally driven behavior that creates it explain how great customer service companies earn trust and loyalty during “moments of truth”: those few interactions (for instance, a lost credit card, a canceled flight, a damaged piece of clothing, or investment advice) when customers invest a high amount of emotional energy in the outcome. Superb handling of these moments requires an instinctive frontline response that puts the customer’s emotional needs ahead of the company’s and the employee’s agendas.” See also “The Moment Of Truth In Customer Service” by Marc Beaujean, Jonathan Davidson, and Stacey Madge – McKinsey Quarterly 2006

(13) The BPM Suite should also provide adequate support for the Web Portal, and technologies do exist to enable secure, rich-client interaction via mobile phones (as well as SMS text commands). In the banking sector, the corporate ATM network can also be used to initiate processes (even if the customer cannot complete the transaction at that point).

(14) This notion of “Interaction Protocols” are consistent with choreography concepts at the core of the Business Process Description Metamodel (BPDM) being developed at the OMG. “Choreography describes the “Interactions” of collaborating entities, each of which may have their own internal orchestration processes. These Interactions are often structured into “Interaction Protocols” (in the sense that Interactions usually have an order) to represent the conversation between the parties. These protocols usually exist between both internal organizational roles and external stakeholders such as other departments, business units, as well as customers, suppliers and regulatory authorities.” From the BPDM Executive Overview.

(15) For more on the different types of roles, be they generic organizational roles, discrete jobs, and abstract “areas of responsibility” see Chapter 1 of Martyn Ould’s excellent book “Business Process Management – A Rigorous Approach”

(16) Of course, some of these digital channels will be inappropriate for the process or organization.

(17) Check BPMN 1.1 as it incorporates a “Signal Intermediate Event” which is ideal for this purpose.

(18) The core features explored in this section are those related to process and collaboration (facilitating both the channel-hopping customer and the empowered Customer Service Representative (CSR)). While our primary focus is on handling customer interaction, the techniques and approaches discussed are also widely relevant to all knowledge work (business practices) and sophisticated process architectures required in many businesses.

(19) It is worth noting that email and Microsoft Office in particular is the default mechanism used to support most knowledge worker activity. While this approach is very flexible, there is no central concept of process, repeatability or auditability. For this reason, we now discount it from our assessments of potential technologies.

(20) The vast majority of BPM Suites and Workflow tools

assume that all activities/tasks/steps (and the potential paths through them), are modeled a priori (beforehand). Putting that another way, they focus on driving work between employees based on a model that maintains the status of a case. The process model must exist up front, which presents the first hurdle of process discovery—i.e. ensuring those models are “correct.” Further, in most products, all cases of a given type share a common process description (rather than copying the model to support each case). In such situations, the engine will normally allow the end-user little or no choice but to follow the pre-defined procedure.

Of course, the challenge is then for process modelers to predict all possible permutations in advance—something that is virtually impossible to achieve in customer facing situations. To get around show stopping scenarios, a few products incorporate features that provide the ability to bypass, redo, and rollback steps, while most rely on re-assignment of work to the supervisor (who must then step outside the system to resolve the problem). It does not take long before the supervisor becomes the bottleneck as cases mount up (those that do not follow the “happy path”).

Change is only possible through re-development of the common process model. New cases of work then follow the modified process description (most products incorporate some form of version control). Change to an individual case requires the deletion of all threads of work and the case is then recreated under the new model (compromising any future audit). Alternatively, mechanisms must exist to move an existing case to the new model.

But these adaptability issues are not constrained to customer facing scenarios. For example, as government regulations change, the firm needs to revamp its process models to handle that change. There might be thousands of cases in the system, the vast majority of which will complete before the new regulations come into force. But imagine that there are still 100 cases outstanding at the point the new regulation comes into effect. For most products, it would simply be impossible for them to handle this problem in any sort of constructive fashion. Each of those cases would have to be manually stopped, and then restarted (somehow) under the new process definition that met the new government regulations. The only viable way of approaching the problem is to incorporate mechanisms to migrate individual instances to the new model.

(21) Of course, this sort of approach is reliant on a BPMS that can facilitate such modifications to work in flight. For most products, it will also require great care in the design

of the process architecture itself, and may involve the development of an external application.

(22) This level of sophistication in products is quite rare. Over the years we have been reviewing products, few products have provided true Run Time Case Handling functionality.

There are certain classes of applications that could only be supported by Runtime Case Handling. Most professional services scenarios fit into this category—the case unfolds and it is impossible to predict at the outset what might happen. For example, in large scale construction projects, the system would need to support interactions between the architect, customer, various engineers, construction teams, right through to the local planning authorities and building inspectors. In such scenarios, it just does not make sense to assume that the process model can be thrown away and restarted under a new version—for example when the customer asks for a swimming pool on the roof rather than next door to the hotel. Similarly, in the legal profession it is virtually impossible to predict the course of a case of work. Emergency response and investigation scenarios also have to deal with situations that unfold dynamically.

Potential Case Handling scenarios are virtually everywhere. In all these situations there are continually unfolding, evolving situations that are impossible to predict in advance. Examples include:

- Government—State and local government, NGOs, Police, Justice (investigations), Land management, Procurement, etc.
- Financial Services—Insurance (every claim is an exception), Banking (trade exception handling, premium account management).
- Healthcare—from clinical provision to administrative management and payment.
- Oil & Gas Exploration—where knowledge workers are spread thinly around the world making critical decisions over the deployment of very expensive assets.
- Pharmaceuticals—clinical trials, compound development, marketing campaigns, etc.
- Virtually every “profession” or consulting situation and most small businesses.

Although the evidence to support this claim is hard to gather, we believe it is a design pattern that is common amongst organisations that have achieved a higher order of business process maturity (as defined in the Business Process Maturity Model). It is also consistent with a Service Oriented Business Architecture.

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