

A Forrester Consulting Thought Leadership Paper Commissioned By Blue Prism

The Role Of IT In Business-Driven Process Automation

Extend The Reach Of Process Automation — Allow The Business To Self-Serve

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FORRESTER

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Executive Summary

In today's rapidly evolving business climate, IT specialists are drowning in application improvement requests from their business colleagues. Every system ever developed needs tweaking in some way or another. The problem is that competition marches on, new regulations emerge, new products are needed to satisfy customers, users spot a useful extension to an existing application, or the business just figures out a better way of getting their stuff done. All of these requests go into a triage discussion where decisions are made to balance business benefit, costs associated with the change, available resources, and time frame.

In May 2011, Blue Prism commissioned Forrester Consulting to evaluate how business process management (BPM) integration really works when automating back-office processes. To explore this issue, Forrester hypothesized that with the right combination of methods and technology, large enterprises could enable business functions to self-serve, enabling the organization to deal with the "long tail" of change, leaving IT to focus instead on the delivery of major change programs.¹

IT specialists are drowning in application improvement requests.

In support of this research, Forrester conducted in-depth interviews with 15 major organizations from a variety of industries, including healthcare, financial services, banking, telecommunications, and utilities. In all cases, these companies were able to deal with significantly more process automation requests than those using traditional IT or BPM approaches. They do this by allowing business users to self-serve, reusing their existing applications through desktop level integration rather than requiring the development and testing of lower-level integration components.

Key Findings

Forrester's study yielded three key findings:

- **Opportunities for business process automation are often missed.** Given the scarcity of technology skills, business functions can struggle to lower their operating costs, often resorting to outsourced or offshore resources combined with lightweight tracking solutions based on products such as Microsoft Excel, Microsoft Access, or even pen and paper. As a result of the manual handovers, work falls through the gaps and customer outcomes are affected. Moreover, these arrangements never fully deliver the efficiencies sought.
- **Most large firms use thousands of spreadsheets and Access databases to track and coordinate work.** Coordinating work across roles implies process support and the manipulation of information. Comprehensive suites of tools empower businesspeople to accurately model their processes and build electronic forms for data capture, but because they generally lack suitably accessible integration methods to link with existing systems of record, they force businesspeople to implement manual workarounds.
- **With appropriate technology, the IT organizations can facilitate business self-service.** Rather than adding further integration complexity as business users attempt to adopt cloud-based solutions or continuing with the current laissez faire policy of Excel chaos, a combination of lightweight BPM technology and desktop-level application integration tooling enables businesspeople to deal with the bulk of their simple change requests. Most importantly, business users need the ability to easily reuse their existing applications. This allows CIOs to make better use of their own resources, focusing on core applications and long-term strategic issues.

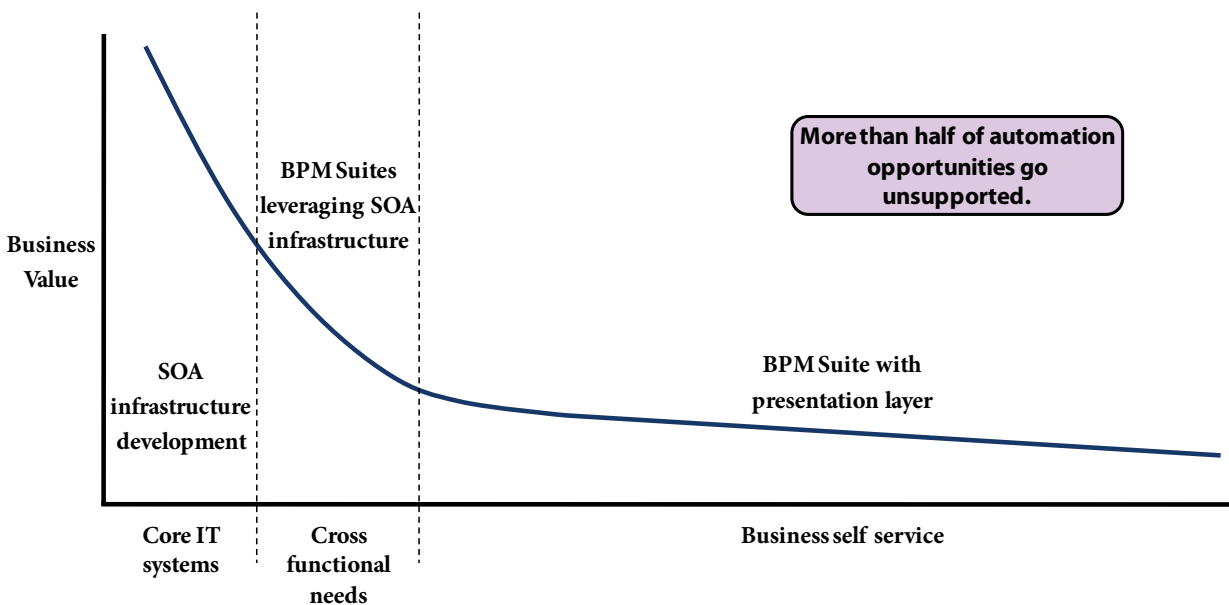
Consider The Long Tail Of Requirements

Given the shortage of IT resources and ever more strict budgets, there are lots of improvement possibilities that just don't make the cut. What's left represents the "long tail" of requirements — things that the business folks want done but never quite happen.

For example, in a major retail bank, the IT organization is currently focused on the long-term replacement of their core banking platform. That's mission-critical stuff and quite rightly appears high on the IT agenda. But that's left a large number of relatively small change requests.

They add up — in that organization alone, the long tail equates to more than 500 full-time equivalents (FTEs) of productivity improvements that will not get dealt with using traditional approaches. They're not alone — telcos, utilities, healthcare, government — it doesn't matter what sector; all firms are suffering from the same issue.

Figure 1: The Long Tail Of Change Challenges IT Professionals



In our interviews, all organizations estimated the numbers of spreadsheets and Access databases used to coordinate and track work in the thousands (in one case the tens of thousands). This highlights the long tail of change; in your own organization, contrast your estimate of the proliferation of these self-help approaches with the number of processes automated using traditional SOA and BPMS methods. From the perspective of the user, it's easy to cut and paste data from the back-end application into some other desktop application. But this approach is just not scalable. Each one of those situations represents an opportunity for process automation, as the cut-and-paste approach is fraught with potential problems — handoffs between roles allow work to slip through the cracks; only one user at a time can access the data; file duplication often leads to significant rework; backup and data security are poor while auditability is nonexistent.

“We have several thousand Excel spreadsheets used to support work. We had an old and complex IT architecture. So we did a review of Access database usage and found around 60 to 70 databases, of which nearly half were business-critical. We killed a load of them; migrating them into the legitimate IT-supported assets. For every 10 that business users would start, perhaps one would succeed and might end up with hundreds of people using them.” (Head of change and service improvement at a leading integrated energy company)

Consider scenarios where:

- **Business users want to make a simple extension to an existing application.** In this scenario, the business requirement involves taking some data that a user already has access to from an original system of record, copying that to another system or desktop application, carrying out some calculation, producing a quick report, and then putting the result back into another field of the original back-end system. While the user currently resorts to swivel chair integration (cutting and pasting), it’s not auditable or scalable. On the other hand, a businessperson using a classical BPM suite could model the simple process and probably format the report, but they would need significant help automatically extracting the relevant data, making the calculations, and inserting the result into the original system. Quite apart from the licensing costs, the cost of IT involvement would probably prohibit a more systematic approach in this scenario; cutting and pasting will continue till a more cost-effective solution presents itself.
- **There is a sudden change in the law, or new regulations emerge.** Let’s take that first scenario a bit further. In the UK high court, all the retail banks were found guilty of “professional misselling” of personal professional indemnity (PPI) insurance. Suddenly, all banks find themselves having to respond to hundreds of thousands of customer demands to provide a definitive account of the premiums paid under those schemes (and then prepare to refund the monies). This is a problem that will last perhaps nine months, but in the short term, each of the big banks needs hundreds of clerical staff to promptly respond to irate customers. And the regulator will want to make sure the banks make speedy reparations.
- **A competitor launches a new product or service.** In this scenario, a key competitor comes out with an exciting new product or service. The business scrambles to respond, as customers decamp to the new offering. However, inflexible existing systems hamper efforts to bring out a suitable response. Frustrated at a lack of IT resources, the sales group decides to ignore corporate IT policies and starts building an independent support system in the cloud. While the IT organization is happy to get the sales group off their backs, they worry about the long-term implications — especially how they will synchronize customer data across the two domains and how this will affect the single view of the customer strategy they have been following.

The question is what’s the point where firms move past cut-and-paste tactics into robust software development? In the second and third scenario, what’s needed is more akin to “a pontoon bridge — something that is erected almost immediately, can carry a tank across, and then [be] taken down just as quickly.” It’s not as though this will become a strategic IT platform. Usually, the applications already exist to deliver the relevant information to an army of clerical workers — what’s needed is the ability for the business to construct the pontoon bridge themselves — because they have the immediate need, the understanding of what’s required, and the desire to limit costs.

“What’s needed is akin to a pontoon bridge — something that is erected almost immediately, can carry a tank across, and then [be] taken down just as quickly”
(Deputy head of change, UK retail bank)

Integration Is Still A Problem With (Most) BPM Suites

Modern BPM suites provide sophisticated mechanisms to orchestrate applications together; leveraging a variety of integration approaches, they enable IT specialists to pass data between new applications and the back-end systems, bypassing the established user interfaces.² As a result, these applications require careful testing and validation before being taken into production.

Most BPM suites now make it relatively straightforward for business analysts and sophisticated end users to model their business processes and build usable forms. Compared with bespoke software development, this aspect of self-service lowers the cost of ownership for an application considerably — those with the need define their own solutions, and the models they produce become executable. Effectively, this lowers the bar for the economic calculation, significantly extending the reach of automation into the long tail. As more people get involved in creating a solution — i.e., further from the point of need and involving other organizational units — the long-term cost of ownership skyrockets.

But that's where the problems start. Pulling data from multiple systems of record, manipulating it, and getting it back again usually requires some pretty significant IT skills. Many of these applications were developed without the benefit of modern web service and XML approaches. They're proprietary in nature, yet they embed significant application logic. They also tend to incorporate sophisticated organizational checks and balances along with security and access controls. As a result, ensuring data integrity, overcoming audit issues, and guaranteeing security is not something that can be left to the business user or analyst. Moreover, without effective IT governance for audit and security, business-led initiatives can introduce further operational risk. Overall, it's having to maintain these skill sets that makes it uneconomic to deal with the long tail of change.

“As a leading provider of mobile services to consumers and businesses, new handsets and propositions are launching every month. The technology support is always trying to catch up with the business drive — there is only so much you can do without getting the technology in place. Whereas the wait for true automation could be a year or more away, we have developed a tactical approach that we can implement very quickly. As a result of the proof of concept alone, we reduced our manual transactions by 20%. We had been running at around 1 million transactions per month for the past three years . . . we've just reduced that by 200,000 per month.” (Head of back-office operations, international mobile service provider)

When It Comes To Integration, There's More Than One Way To Skin A Cat

In dealing with the integration challenge, the approach taken creates different results:

- **Data layer integration creates brittle interfaces between applications.** While fairly straightforward for the software engineer, this method bypasses any behavior programmed into the original application. Each integration point in a process must be developed, tested, and then assessed across the entire process or new application. With data used at most steps in a process, that means a great many separate integration points. In the end, this approach creates another level of brittle spaghetti on top of the original applications, driving long-term costs. It will only grow the long tail over time as applications become ever more complex and brittle.

- **Application layer integration is highly effective for mission-critical applications.** Adopting a combination of a service-orientated approach and XML-oriented standards (API, SOAP/REST/XML), developers can preserve application behaviors and data integrity. This approach allows them to bring together disparate business logic — potentially from several back-end applications — and publish it as a reusable component, making that component available to business process models.³ However, many legacy applications require further work in order to make them accessible in this way.⁴ While this approach represents the best approach for mission-critical and core applications, the costs and time associated with developing and maintaining those components make it prohibitive for the long tail.
- **Presentation layer integration reuses existing functionality.** Creating an effective “service interface” lies at the heart of the integration objective. Existing applications already have access permissions and safeguards built into them. They’ve already been tested and deployed.⁵ While techniques such as screen scraping are a last resort, those existing user interfaces also contain structure in the form of Java or HTML. With the right tooling, it becomes possible to introspect, access, extract, and transform data from virtually any existing application source. As a result, the reliance on deep technology skills associated with data layer or application layer integration disappears. This radically changes the economic argument, enabling the organization to address much more of the long tail. It also satisfies the granularity, security issues, and speed needed for viability across the long tail.

In the PPI miss-selling example, while it was possible to develop application-level service interfaces and then tie them into the simple process using the corporate BPM suite, it would have taken far too long to develop and test a robust application. The operational problem would have disappeared before the solution was ready. On the other hand, using a presentation layer approach, the bank was able to build an automated solution that went into full production within six weeks. By automating 40% of the process, the bank estimated that it saved around 100 FTEs.

“Combining presentation layer integration with process support allowed us to demonstrate succinctly what we meant by process automation — it helped us articulate what BPM means to the organization. We then used that as a vehicle to spark the conversation — to identify the low-hanging fruit — allowing us to help them cut costs and improve the patient experience.” (IS director at a major healthcare provider)

“We wanted to better support redemptions and sales, allowing customers to self-serve. We could support the web journey quite easily, but we didn’t have a service layer. That was going to be expensive and would have taken too long. Sure, we could have pushed it offshore to reduce costs, but that wouldn’t help with swivel chair integration. Using a presentation layer integration tool set, we found we could reuse the existing rules and screens. As a result, average work item processing costs have gone down from \$1.30 to under \$0.20; that’s a reduction of more than six times. But perhaps more importantly, the risk associated with the project was very low.” (Head of operational architecture at one of the world’s largest investment fund management organizations)

Deal With The Long Tail Through The Presentation Layer

When you're limited to traditional integration approaches, existing applications create the economic roadblock that drives long tail of change. However, when you can leverage presentation layer approaches, those same applications usually provide the underlying mechanisms that enable the business functions to meet their own needs.

With an accessible combination of presentation layer integration, process modeling, and data manipulation, business functions can usually develop their own application extensions. Where appropriate, expert IT resources can facilitate deeper integration needs. But it's the presentation layer integration mechanisms that deliver the business self-service capability. The benefits include:

- **Technology independence.** Presentation layer integration technology works across different application solutions independent of the underlying architectural approach used in their development. Whether a legacy system was developed around Java, .NET, or even COBOL, the user interface already contains everything needed to access the underlying data. While other integration options are more scalable and efficient, they require much higher levels of technology sophistication. As a byproduct, this type of integration protects core systems, as they now need fewer modifications.
- **Lower organizational risk.** With appropriate IT involvement, governance and security are guaranteed. As the business function is leveraging the underlying application logic already available, access authorization concepts are immediately inherited. These sorts of lightweight integration approaches also facilitate the testing of core systems. Moreover, the risk of noncompliance or unauthorized data access is significantly reduced.
- **Lower cost associated with process change.** Ultimately, the cost of doing business reduces. Through the extension and reuse of existing systems, the business unlocks its existing investments in process automation. As there's no need for deep technology expertise or sophisticated SOA technology, those with the need can usually develop their own solutions. Moreover, because the approach reuses existing application functionality, testing cycles are significantly reduced, meaning products get to market faster.
- **More effective engagement and solution fit.** Because the solution is built out by the business, there is a stronger sense of ownership of the resulting application. Furthermore, the functionality more closely reflects the underlying business need, as no information is lost in translation. It also disciplines the business functions to think about automation more clearly and to articulate their needs for core system requirements with new levels of insight.

KEY RECOMMENDATIONS

The economics of self-service are too compelling to ignore. Enabling business functions to self-serve through the presentation layer provides the fastest and most secure means for an organization to quickly develop a new business capability. Within a governance structure set up by IT, this approach offers a new dimension to the way in which business functions and IT can work together with a clear means of supporting each other. In responding to business change requests, IT execs should:

- **Undertake an analysis of the long tail.** Many organizations simply don't know how much improvement opportunity they're missing. Traditionally, firms have focused on the big rocks in the garden while ignoring all the weeds that choke growth. Survey the organization to assess the numbers of desktop artifacts used to coordinate work. These represent the biggest source of these improvement opportunities.
- **Assess the methods and technology required for business self-service.** Seek to empower the business users to help themselves by building a culture of IT and business collaboration. IT will continue to provide governance, reliability, and availability of services while the business side concentrates on the market and their needs.
- **First consider the presentation layer as the integration mechanism of choice.** With the primary goal of enabling maximum business configurability with the minimum IT involvement, this approach will help avoid breaking existing systems.

In the end, this all leads to lowering the bar on the long tail of change — more change requests get handled with fewer resources.

Appendix A: Endnotes

¹ In 2004, Chris Anderson wrote an article in *Wired* magazine titled “The Long Tail,” where he described the capabilities of media sales platforms such as Amazon.com Rhapsody and Netflix to economically serve user preferences in the very small segments. “. . . the potential book market may be twice as big as it appears to be, if only we can get over the economics of scarcity. Venture capitalist and former music industry consultant Kevin Laws puts it this way: “The biggest money is in the smallest sales.” His point was that “the market that lies outside the reach of the physical retailer is big and getting bigger.” The same is true for user needs for IT solutions and changes to them.

² This includes a variety of technology approaches such as data transformation, application adapters, low-level process automation, web services, XML translation, event triggering, routing, and messaging infrastructure.

³ Most BPM suites take this approach. Those components are published to the process modeling and forms interfaces, enabling the end user to access the functionality embedded in the component without caring about its internal construction.

⁴ This implies unraveling the existing code and ensuring that such new interfaces don’t break the integrity of the application.

⁵ Anecdotal evidence suggests that as much as 60% to 80% of the costs associated with developing these new applications are associated with ensuring appropriate access permissions and safeguards.