

Process On Demand - Building Agile Businesses with On Demand Process Applications

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Overview

July 10th 2008 was a watershed date in personal computing. On this date Apple launched the App Store marking the first time that software applications could be purchased and installed onto a mobile device without having to sync with a PC or laptop. The App Store, launched with 552 applications, has now over 1 million apps. However the launch of the App store was not only a key moment for personal computing but as we will see this event has also triggered fundamental changes in enterprise computing as well.

77% of business executives buy their own hardware and 45% self-provision software. By 2017 Gartner estimate that 25% of enterprises will have their own app stores. The perfect storm of consumerization, mobility and the cloud is changing how IT is acquired and consumed within the enterprise.

This Article explores the growth in enterprise business applications and looks in depth at the emergence of on demand process applications. We will see that business processes are not immune to this revolution in enterprise IT and that the bring your own, post PC generation of employees are also driving changes in how future business processes will be acquired and executed.

Introduction - The App. Internet

Our personal technology experience has changed our business IT expectations. The ability to download a game or a lifestyle software application in seconds and use it intuitively without recourse to a user guide is now taken for granted in our personal lives. When it comes to how we use software in our professional lives things have moved much slower. In the enterprise long software purchase lifecycles with large up front license and professional services costs still dominate. However this model is coming under pressure from employees frustrated with delays in software selection, approval, implementation and change timescales as well as business leaders determined to drive down upfront cost and total cost of ownership.

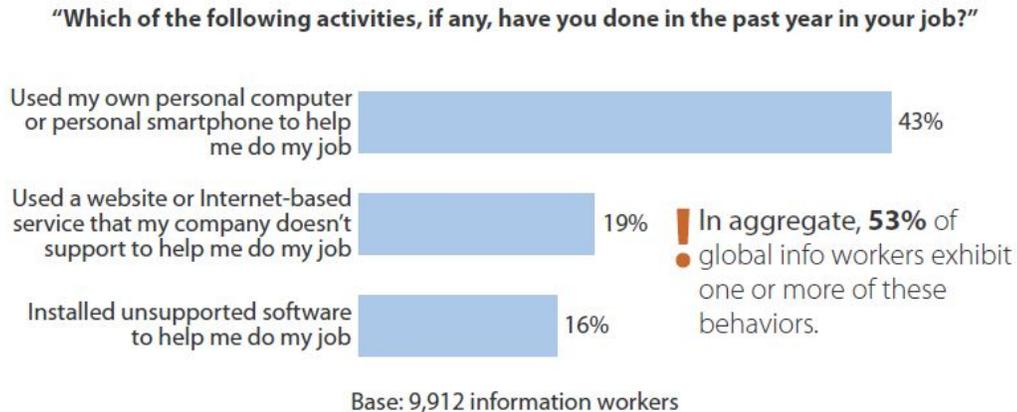
The app. internet model we have become familiar with in our personal lives is starting to take hold in business, changing not only how enterprises acquire business applications but also how they design and execute their business processes.

Bring Your Own Technology and the Consumerization of IT

The dividing line between IT used for business purposes and IT used for personal reasons has become blurred. An employee led revolution, sometimes referred to as the "Consumerization of IT" has led to the emergence of bring your own technology (BYOT) also referred to as Bring Your Own Device (BYOD) and Bring Your Own Software (BYOS).

According to a Forrester Survey in 2012 called "Charting The Rising Tide Of Bring-Your-Own Technology"¹ over half of information workers engage in BYOT.

Figure 1 Over Half Of Info Workers Engage In BYOT



Source: Forrsights Workforce Employee Survey, Q4 2011

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Source: Forrester Research, Inc.

Employees using their own technologies for business related tasks are the manifestation of employee desire to bring their personal IT experience into their working lives. BYOS reflects their frustration with the long approval, acquisition and delivery timescales of traditional business software purchases. Rather than experiencing a long delay for IT departments to come to the rescue, employees are increasingly creating their own technology solutions to address business problems.

Significantly Forrester also report that BYOT has been most aggressively adopted by senior executives and show that 77% of executives buy their own hardware and 45% self-provision software. With this senior level endorsement BYOT is a problem that's not going away for IT organizations.

Steve Jobs said in a 2003 interview with Rolling Stone magazine about the music piracy problem: "You'll never stop that. So what you have to do is compete with it." So it goes with BYOT.

The Enterprise App Market

Today over 1.5 million downloadable apps exist in the Apple App Store and in Google Play. The total market for paid application downloads reached approximately \$8 billion in 2012.² In addition to the consumer app market a second app market, the Enterprise App Market has now emerged. In Europe research by the Centre for Economics and Business Research shows the European enterprise cloud app market is set to generate £2.7 billion (\$4.2 billion) in revenue by 2018.³ Gartner expects that by 2017 25% of Enterprises will have their own Enterprise App Store.⁴ It's thus clear that despite a slow start the momentum for enterprise apps is starting to build.

As well as Apple and Google other established technology vendors such as Microsoft and Salesforce are establishing their own app stores targeted at the enterprise. Salesforce AppExchange is a marketplace for cloud computing Web applications which users can purchase and add to their Salesforce.com environment. Microsoft meanwhile offers enterprise apps via their Office Store Apps that extend what you can do with Office and SharePoint 2013.

Several consumer apps have already made the evolutionary leap from the mass consumer market to the enterprise. Skype, Gmail, SkyDrive and Dropbox are examples of consumer apps, brought into the organization by employees under IT radar that have now achieved broader

enterprise acceptance. Public social media applications like Facebook and Twitter have also spawned their enterprise equivalents such as Jive and Yammer.

While packaged applications like skype and dropbox have been pioneers within the enterprise app market they have a narrow focus with fixed use cases. As enterprises seek to move up the application value chain a market is emerging for business process applications that also deliver the simplicity, rapid deployment and mobile capabilities we associate with the rest of the app. market.

In the next section of the Article we will focus on business process applications.

The Evolution of Business Processes

Organizations have been automating business processes for decades using basic workflow tools for simple business processes and Business Process Management (BPM) applications for more complex processes. Historically BPM suites were used to optimize high volume, transactional, back office processes. In recent years however BPM based process applications have not only broken out of back office into front office processes they've escaped the boundaries of the organization entirely delivering business processes participation on mobile devices. As a consequence of cloud, mobile, consumerization and social megatrends the front office of the organization is no longer the bricks and mortar store or the call centre-- now it's the mobile device, the airport, the subway or the home. Process participants are no longer tied to back office systems and a gap has developed between the front and back office.



Historically Process Participants were tied to back office systems

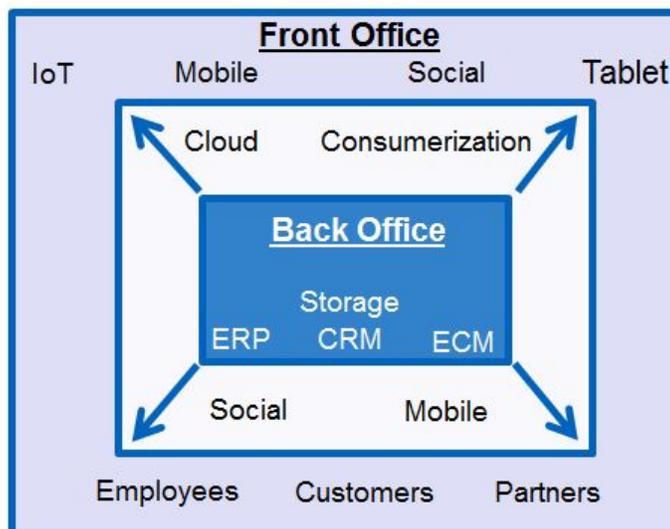
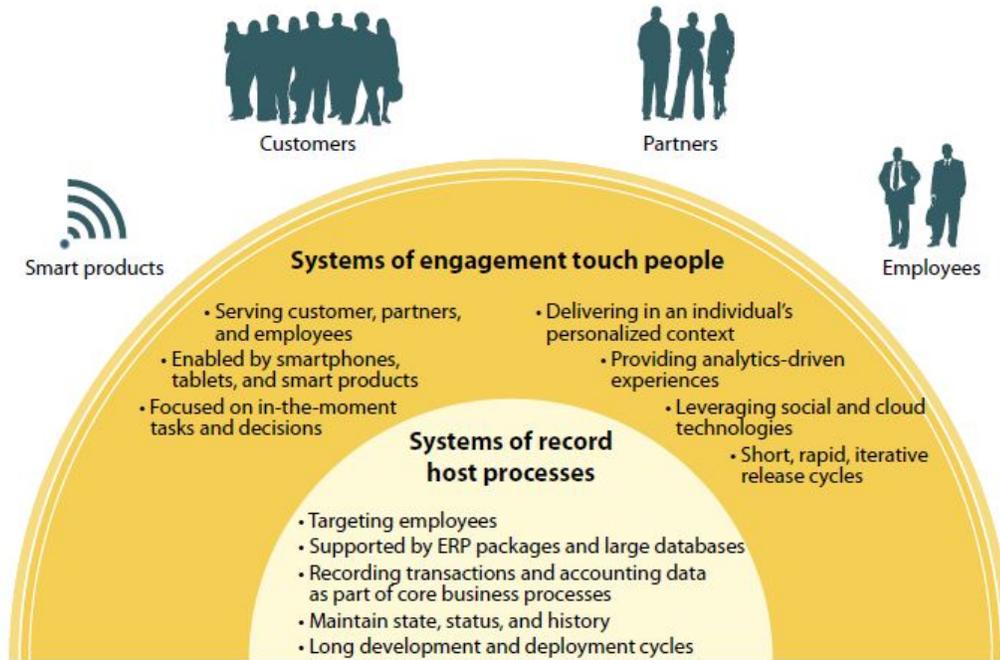


Fig2: Cloud, Consumerization, Mobile and Social Megatrends are extending the boundaries of the organization

This shift in business processes from the back office, to beyond the traditional boundaries of the organization has been described by Geoffrey Moore in terms of Systems of Engagement and Systems of Record.⁵ *Systems of Record* are the legacy tools, repositories, and systems upon which organizations have built their business processes for the last several decades while *Systems of Engagement* are the myriad of devices and applications triggered by the perfect storm of mobile, cloud, social and consumerization.

Figure 3 Systems Of Engagement Are The Future Of Technology-Led Business Innovation



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Source: Forrester Research, Inc.

Where previously customers and employees were tightly bound to legacy applications mobility, the cloud and consumerization has set them free. Rather than engaging with organizations via the bricks and mortar store or call center today's empowered customers and employees are calling the shots, engaging with organizations by their preferred channel. As shown in figure 4 increasingly business applications will fill the gap between the systems of engagement used by customers, employees and partners and the organization's systems of record.

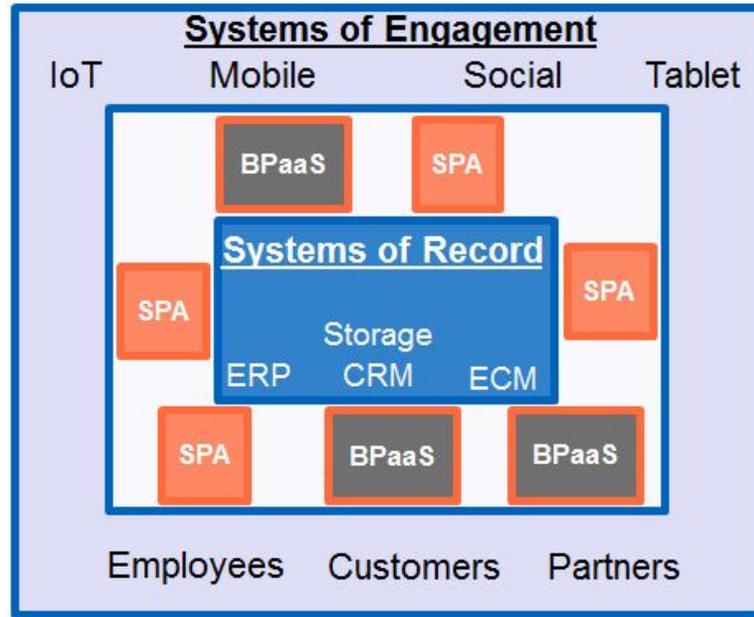


Fig4: Systems of Engagement and Systems of Record are connected by Business Applications

Business Process Applications

This changed IT landscape has triggered renewed interest in business process applications. Packaged or pre built business process applications have been in existence for a long time. Business Process Outsourcing (BPO) organizations have been delivering tailored and more standardized processes to clients for years. Delivered via the web services such as human resources, payroll, policy administration and insurance claims are those most commonly provided by BPO organizations today.

Along with the consumerization of IT, the availability of BPM platforms in the cloud and the extension of business process participation to mobile devices have been a catalyst for growth in on demand process applications transforming how future business processes will be packaged, priced and delivered.

A recent client engagement crystallized the trend towards on demand process applications. The organization was looking to optimize the delivery of its expense management business processes and was engaged in an internal organization debate about whether to choose a prebuilt, packaged, off-the-shelf application or whether to build its own bespoke in-house solution using a Business Process Management (BPM) suite. The accounting department, the solution users, recommended purchase of a pre-built, packaged application, emphasizing speed of deployment as their key motivating factor. The IT department, who held the budget, recommended the acquisition of a BPM suite, motivated by the classic BPM reasons of process flexibility and extensibility into other departmental processes. The accounting department was thus looking for a quick tactical play; the IT department looking for a longer term strategic play. The accounting department won.

BPM applications have for a long time been regarded as a strategic play. It's often said that successful BPM projects require both cultural and strategic change within organizations. Establishment of BPM centers of excellence, back office integration and the optimization of processes that cut across multiple departments all require that the organization and its

employees are in sync and are willing to review established practices. But all of this takes time, effort and significant cost, creating barriers for widespread BPM adoption, putting the BPM suite out of reach for many small and medium size businesses. The classic reasons for adopting a BPM platform thus contrasts greatly with the reasons driving the consumerization of IT.

Yet process improvement has not been immune to the consumerization of IT phenomenon. Business Process as a Service (BPaaS) and Smart Process Applications (SPAs) are emergent BPM trends that represent the evolution of enterprise app. market to encompass business processes. In the next section we will have a look at these on demand process definitions in more detail.

BPaaS and Smart Process Applications

The business taxonomy for on demand process applications is still evolving. Vendors regularly use terms such as solutions, frameworks and accelerators to describe pre-built process functionality aimed at providing clients with domain expertise and reduced implementation and professional services costs. As BPMS move to the cloud this taxonomy has expanded to include Business Process as a Service (BPaaS)⁶ and a newer Forrester category called Smart Process Applications (SPA)⁷.

BPaaS

BPaaS is similar to what we understand as Software as a Service (SaaS) but is focused on the cloud delivery of on demand business processes rather than business applications. BPaaS is the distribution of highly standardized end-to-end business processes delivered similar to SaaS via a pay-per-use, self-service consumption models. BPaaS applications are high volume, transactional highly standardized on-demand processes. Payroll, printing and ecommerce are all examples of BPaaS applications being delivered today where the process is highly automated, requiring little or no human intervention.

Smart Process Applications

Smart Process Applications (SPA) is a Forrester defined category of business process applications. While not necessarily cloud delivered SPAs Forrester expect the cloud to be the primary delivery infrastructure for SPAs making them easier to deploy, support and continuously improve. SPAs are packaged process apps that encompass many of the characteristics we associate with case management business processes and recognize the critical role of human interaction within business processes. To quote Forrester;

"In a transactional process app, the end goal is as little human involvement as possible, In a smart process app, people are an inherent and desired part of the process or activity."

*The Forrester Wave™: Smart Process Applications, Q2 2013*⁸

As shown in Figure 5, Forrester state that smart process apps include five key attributes: Awareness, Analysis, Collaboration, Capture and Output and BPM. SPAs recognize that many business processes go beyond simple, siloed, automated workflows and instead involve more complex human centric processes with multiple points of integration.



Fig5: Forrester Smart Process Applications

The difference between BPaaS and SPAs is similar to the difference between BPM and Case Management. Where BPaaS applications deliver the optimization of transactional, high volume, simple business processes SPA's optimize the delivery of more complex, multi-person, variable business processes. SPAs are thus closer in nature to what today we describe as case management business processes.

A value chain of cloud delivered processes is beginning to emerge from high volume, standardized transactional BPaaS processes to lower volume, variable SPA processes with higher levels of human involvement.

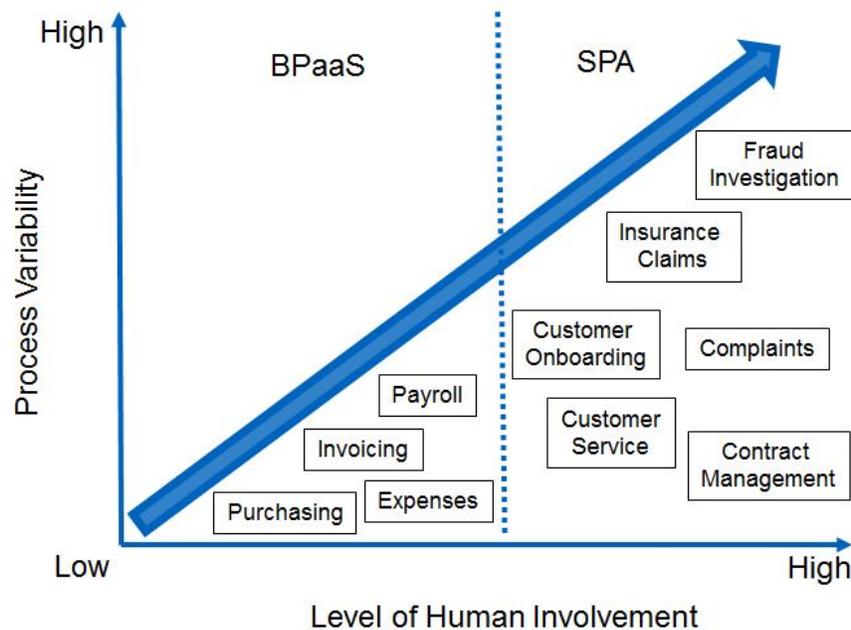


Fig6: Business Process Application Value Chain

In their research Forrester believe the smart process applications market will be a \$34Bn market by 2015⁹ while Gartner expect the business process as a service (BPaaS) market to have grown to \$84.2Bn in 2012¹⁰. It is thus clear that the market for on demand process applications is significant and growing rapidly.

The Benefits of On Demand Process Applications

The business benefits drawing organizations to BPO organizations apply equally to BPaaS and SPAs. BPaaS and SPAs allow organizations to outsource non-strategic back office functionality like payroll and expense management and focus on their core competencies and areas of differentiation.

Organizations choosing BPaaS and SPA applications benefit from the generic cloud benefits of low start off cost, reduced business risk and the ability to only pay for what you need with the reassurance of elasticity and scalability on demand.

The less tangible business benefits of on demand process applications are perhaps the most interesting. BPaaS and SPAs give small and medium size enterprises (SMEs) the opportunity to access business process solutions and industry best practice that either due to cost or skill availability, they would have been unable to develop in house. In addition process on demand has the potential to transform organizational agility. For non-core business processes many organizations will be happy to trade the restrictions of packaged applications in return for enhanced business agility. A perfect example of this is the "pop-up store" phenomenon where retailers sell seasonal goods or trial a concept for a short period of time, made possible with the availability of on demand point of sale, inventory and store operations solutions. In addition on demand process applications allow organizations to avoid lock in to specific vendor ecosystems and purchase best practice where ever it is located.

Challenges

A number of challenges however must be overcome on the road towards widespread adoption of on demand process applications.

BYOT Security

While the widespread adoption of cloud services by consumers such as email and storage has reduced concern of individuals about cloud security enterprises remain concerned about the security implications of BYOT. The sheer volume of potential applications and devices available to employees is such that IT departments are unable to keep up, making the potential leak of sensitive, corporate information by employees onto unsanctioned devices and applications in the cloud a very high risk.

As a result many enterprises are now looking at Enterprise App Stores to address many of these security concerns. Enterprise app stores have the potential to control the proliferation of software apps in use by employees and yet still provide employees with the software experience they are used to in their personal lives.

Integration

A second challenge for vendors and organizations considering the use of on demand process applications is integration. Many business processes cut horizontally across organizations and touch multiple departments. As a result business process applications must be able to integrate with 3rd party and in house applications and data repositories in use by other parts of the organization. Integration is already a challenge on-premise, in the cloud the difficulties increase with cloud to cloud and cloud to on-premise application integration required.

The cloud integration challenge has led to the growth of cloud services brokerage (CSB) service providers and the emergence of Integration Platform as a Service (iPaaS) suites which deliver as a cloud service a combination of capabilities typically found in ESBs (Enterprise Service Bus). In addition to address the integration challenge Smart Process Application vendors also have to provide extensive connectivity options, including off the shelf pre-built connectors, to relevant on-premise and cloud applications.

Legacy Applications

Despite the momentum of consumerization and the growth in enterprise and on demand business applications legacy applications will remain for some time. Enterprise applications will struggle to deliver the supply chain, CRM or ERP functionality necessary for large size organizations. The downside however is that large organizations are locked into legacy applications and are unable to benefit from newer enterprise apps and procurement options giving smaller and medium size organizations and agility advantage.

The Essential Capabilities for the Delivery of On Demand Process Applications

SPA and BPaaS application development platforms have a number of essential capabilities. Forrester's five key attributes of SPAs are included in the list below. Case Management, Multi-tenancy, Mobile support and Integration while embedded in Forrester's attributes are discussed separately.

Cloud Enabled BPM Platform

Cloud enabled BPM platforms (BPM PaaS or BPM Platform as a Service) underpin the delivery of BPaaS and SPAs. BPM PaaS is the delivery of BPM technology as a service via a cloud service provider. In order to be classified as a PaaS a BPM suite requires the following capabilities: the architecture should be multi-tenant, it should be hosted off premise and it should offer elasticity and metering by use capabilities.

Using a cloud enabled BPM platform any organization with a specific area of process expertise can now set themselves up as a business process outsourcer (BPO) and create their own process applications. BPaaS and SPAs extend the market for BPM tools from medium and large organizations to smaller organizations for whom the cost of a traditional BPM deployment may be prohibitive.

For larger organizations and for organizations with a specific area of process expertise the classic strategic reasons for deploying BPM suites will remain. BPM PaaS will be used by many organizations to develop and execute their own in house business processes. For multinationals it offers the ability to extend the capabilities and agility of their shared service centers to develop for example a human resources process or a sales process and roll it out rapidly and consistently across multiple jurisdictions.

Multi-tenancy

Multi tenancy is an often overlooked cloud capability where a single instance of a software application serves multiple customers. Many organizations who have not invested in development of their code to deliver multi tenancy attempt to diminish its importance by stating that the benefits are only obtained by the service provider in the form of reduced operational costs. However end customers also benefit from multi tenancy through its support for rapid service provisioning and the ability for service providers to rapidly roll out new features and bug fixes to all customers simultaneously. In a process application context multi-tenancy is a crucial capability.

Case Management

Not all business processes are predictable. Customers, competitors and the business environment are a volatile mix putting pressure on organizations to continuously adapt in order to survive. As a result customers require business process applications that are not

only available on demand but which can be modified rapidly in response to external market changes.

To deliver this flexibility, process applications must include those features we commonly associate with case management business applications. These features include the ability to perform ad hoc process change, expose business rules to participants for rapid modification, manage process artifacts e.g. unstructured content and allow process participants to choose alternate process paths or process fragments.

Mobile Support

The ubiquity of mobile and tablet hardware is such that the support for mobile applications is no longer a differentiator but a must have capability to even play in the game. In the consumerized IT landscape mobile is no longer an engagement channel but the platform.

Users must be able to engage with process applications from any device. Developers must be able to write the process application once and deliver it to desktops, smartphones or tablets without any additional work. In addition platforms for the creation of on demand process applications must be able to utilize the native capabilities of the device (camera, GPS etc.) to deliver context driven business processes.

Automatic Capture and Output

Many business processes are content rich environments. Business processes are often triggered by the receipt of a document, an email or a social media post. In addition many business processes require the generation and management of large amounts of business artifacts during their lifecycle e.g. customer onboarding, insurance claims, legal and medical investigations. For maximum business benefit SPA platforms must therefore be able to integrate the means of electronic document capture and generation directly with business processes.

Collaboration

It's impossible to automate all business processes. At some point employees and knowledge workers have to fill the gaps that processes can't reach. At these interstitial points within or between processes organizations rely on their employees to make decisions on behalf of the organization and its customers. Many business processes have multiple participants who are required to collaborate in order to move the process forward. As a result it must be possible to create process applications that facilitate easy collaboration between process participants either through email, instant messaging and content management platforms or increasingly via enterprise social networks. In addition it must be possible for records of these collaborative activities to be maintained and added to the process artifacts if necessary.

Analytics

Knowledge workers use three key inputs to make decisions; their own experience, the experience of others and data. The objective of data analytics in any organization is to facilitate better decision making. In an on demand process context embedded business intelligence and analytics tools, preconfigured for the specific process can be used to deliver the following business benefits:

- Deliver real time business intelligence and allow employees to make decisions based on data that is minutes rather than weeks old.
- Reduce process latency and take immediate process action directly from BI tools or automatically trigger processes based on analytics results.
- Guide employees to the best next action for a given context.
- Use analytics to improve the bottom line e.g. Deliver Upsell, Reduce Customer Churn or Detect Fraud

Integration

We have previously discussed the integration challenges that exist for cloud delivered process applications. To reduce these challenges SPA platform vendors must deliver extensive connectivity options to SaaS and on-premise third party applications and include pre-built connectors to applications critical to the business process being delivered. For customer service SPAs could include pre-built integration to CRM applications and ecommerce applications could include pre-built ERP application integration

Awareness

A business process starts with a trigger. In a traditional process context this trigger may be a customer call or the submission of an application form or email. However the point at which business processes originate is changing. Sources of awareness data and the trigger for business processes now include mobile devices and social media. Today we are seeing the first phase in the development of what is known as the "internet of things." Increasingly we will see processes triggered from radio frequency identification tags (RFID) on almost every type of consumer item. The SPA platform thus must have the ability to sense and trigger processes from a wider spectrum of inputs that exist outside the organization.

Conclusion

The consumerization of IT, the app internet, the cloud and mobile usage have created a perfect storm within the business environment. Established businesses are under pressure from their employees looking for faster solutions for business problems who are quite willing to circumvent business processes to obtain a solution. Cloud computing and the availability of on demand enterprise applications mean that it's never been cheaper to establish a new company and is fuelling a start-up boom that threatens the dominance of established organizations.

Rather than product or price, in the new millennium business agility and customer experience are the key competitive differentiators. Whether it's the pop-up store or Instagram, where a \$1Bn business was built on 13 people¹¹ and scaled to over 14M users in little over a year using a variety of cloud technologies, the ability to rapidly deliver service via any channel gives an organization the edge.

Business processes are not immune to this revolution in enterprise IT. The BYOT generation of employees who value speed, cost and simplicity over the bespoke functionality delivered through traditional software procurement are driving changes to how business processes are acquired and developed. A value chain of cloud delivered business processes is emerging, from BPaaS to SPA that will deliver business processes on demand, on any device, anywhere.

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