

# The transition to agile - solving today's problems while creating a better tomorrow

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# 1. Introduction

With mainstream business media running stories daily on Big Data, the Internet of Things and an up and coming generation of digital natives, it is easy to think of IT's major challenges being disruptive future trends. However, research commissioned by Logicalis tells a different story. The major challenges for today's enterprise IT are familiar but more pressing than ever. Resources are few, existing infrastructure is increasingly inadequate for today's challenges, while the need for alignment between business needs and IT capabilities is recognised as critical.

Competitive pressure and a more connected, active consumer are increasing awareness of customer satisfaction as a major strategic driver for the business - alongside customer acquisition – and a realisation that IT has a vital role to play in both areas.

UK IT leaders have made this clear to us. Our recent research with them also revealed a growing awareness of the practical importance of cloud, mobile and agile approaches to business-driven IT challenges. Indeed, the prolonged economic slowdown combined with the move away from PC-based solutions has led to areas of enterprise infrastructure no longer being refreshed on the old 3-5 year cycle, with the focus falling by default on cloud service adoption and mobile, BYOD platforms as the primary delivery mechanism for new enterprise services.

Meanwhile, increased storage, networking and management demands are also stimulating a move to platform and infrastructure cloud services (PaaS and IaaS), with virtualisation and cloud service delivery in general filling in the gaps that in-house physical infrastructure can't meet. Even the hardware which businesses choose to keep in-house is being moved towards private and hybrid cloud architectures, building services that can integrate with and be managed alongside public offerings.

**“the need for alignment between business needs and IT capabilities is recognised as critical”**

## IT as enabler, innovation as second nature

There are two challenges for the IT department inherent in these trends. One is continuity of service in a shifting environment, maintaining existing capability and management commitments. The other, which has elements of turning challenge into opportunity, is using the drivers behind the changing relationship with the business - capex to opex, or cost reduction and increased flexibility - to drive a necessary yet exciting evolution to a mobile-first, DevOps / agile approach to enterprise IT.

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The DevOps / agile approach has much promise. It tackles the challenges seen in our survey - ever-tighter cost control and infrastructure lagging behind demand - with a clearer focus on the growing business priority for better business alignment and customer engagement. It clears the way for established enterprise IT to incorporate lessons from the headline success stories from the leaders in digital business - Amazon, Apple, Google, Netflix and others that are now part of all our lives and are setting our expectations of how IT is experienced and what it can deliver.

The headline figures from our survey underline these new IT realities. Ninety per cent of respondents identified budgets as the main challenge for 2014. Sixty per cent said that legacy technologies were the most prominent secondary challenge, while IT business models and alignment with corporate needs were consistently in third place for IT concerns.

With 70 per cent of replies indicating that IT does not have a sufficient influence on business strategy, this mismatch is not surprising. Likewise, when considering key IT priorities the data shows that cost-cutting is seen as IT's most pressing need, which does not sit well with IT showing strategic leadership.

**“although nearly 70 per cent of respondents indicated that infrastructure investment has previously provided the best ROI for their organisations, only a third said that their infrastructure was currently fit for purpose”**

The major paradox in our survey is that although nearly 70 per cent of respondents indicated that infrastructure investment has previously provided the best ROI for their organisations, only a third said that their infrastructure was currently fit for purpose. However, traditional infrastructure is not going to get major investment today - over half of primary investment is now going into private cloud and mobile, according to our survey.

This is a good match for customer and employee experience but won't fit comfortably with the way infrastructure and data is managed within the organisation today. The need for change that comes with increasing reliance on cloud-delivered services and user- or customer-focused service delivery is the opportunity to adopt agile processes that are a far better match to the dynamic information environment we all have learned to take for granted in our everyday lives. This is the arena in which the modern organisation must operate and in which enterprise IT must not only adapt but lead the way.

The benefits of moving data centre and infrastructure thinking forward are that IT stops being an afterthought to business strategy - or worse, a cost centre that adds inertia to a company's adaptability. Instead, it becomes an essential enabler that creates the environment where innovation is second nature.

Our survey shows UK IT at a transition point where multiple drivers are converging to give a clear picture of the way ahead. To illustrate how that way might work, here are two use cases that build on the trends from our survey to illustrate what becomes possible - and necessary - to move your organisation into the business-aligned IT world that awaits.

## 2. Next-generation retail

Bricks and mortar retailers face particular challenges today, with online-only companies such as Amazon able to adjust their mix of product promotions, special deals, bundles and range of offers at internet speed.

But traditional retailers have advantages: shopping on the high street and in retail-themed spaces provides sociability, the opportunity for discovery and a focused customer base intent on purchase. The question is: How can the best of the web retail experience, for both buyers and sellers, be melded with the unique pleasures of shopping in person? Customers want to experience variety, topicality and the impact of online visuals; retailers must have flexibility, metrics rapidly deployable, opportunistic channels for both goods and visual content for those customers.

This means exploiting all the tools available to pure online stores but tied to the physical presence of outlets. Traditional retail IT is far more hindrance than help here. It expects static logistics, slowly changing stock mixes and predictable flows of customers with predictable needs in predictable places - all driven by seasonal marketing through pre-internet channels.

So break that model by virtualising your outlets through cloud-based services. The ideal shop-in-a-box model is one that many all-in-one cloud service vendors are ardently promoting, promising a simple, scalable set of applications that cover everything. However IT departments should consider the implications of buying into single-vendor hype. The most important single factor that cloud-based systems provide is agile, effective response to demand - and that should be true for all aspects of a business, not just those that a particular vendor specialises in or in a way that it promotes.

The dream retailer should be able to set up shop anywhere with minimal delay, precisely matched to the retail opportunity at each location, at a low enough cost to encourage iterative, innovative experiments but with enough capacity and verve to compete with the best and fulfil rapidly changing demand.

The same technologies can provide an on-demand catalogue of IT services for marketing and retail executives to deploy business-enhancing capabilities: video demos streamed to digital signage and real-time stock management dashboards to help frontline managers optimise store promotions.

Business-driven information management demands precise and richly-detailed data from CRM, logistical systems and truthful, responsive reporting. Marketing needs engagement tools into and out of social media - to talk to customers, hear their replies and build deep insight - as well as creating strong messaging that matches the needs of each location and can be deployed instantly and flexibly.

All that should scale, whether from the back of a lorry at a music festival or at a flagship store.

The approach of the IT department in creating an infrastructure that can support all this cannot be to create a monolithic system. Instead, it must provide support and guidance for all departments in formulating their requirements through a framework for assessing potential solutions, ensuring interoperability and adhering to compliance and security needs without stifling choice. This requires a loosely-coupled IT infrastructure built to enable an agile, service-defined response to changing business demand.

It must decide to what extent it needs to own the relationships between cloud vendors and departments, how it will enforce integration and how it will support that, and what standards are essential. It must do all this in a vendor environment which is diverse, dynamic and full of conflicting claims - a quick look at just the SaaS CRM sector with claims to retailer relevance reveals headline alternatives from BigCommerce, BPMOnline CRM, Lightspeed, Maximizer CRM, NetSuite CRM+, Salesforce, SAP, Shopify, Volusion, Zoho and a mass of smaller but potentially more agile new contenders.

This isn't as different as it might seem from the IT department's traditional role of providing essential expertise and support - only with the key value provided through knowledge and skills in managing cloud-based infrastructure, in addition to a new breed of in-house services.

No company can hope to compete without considerable knowledge of the cloud market. And therein lies the future of corporate IT. It sets the ground rules, defining the best delivery model - whether private, public or a hybrid - deciding which APIs and standards are indispensable, ensuring that the underlying storage, network and security infrastructure is capable of supporting those standards while scaling on demand. Then it encourages as diverse a set of application and service options on top of that as is necessary.

One illustrative example is the selection of digital signage. Marketing will say it wants a flexible, attractive way to display in-store messaging; IT will advise that there is a selection of in-house and cloud-based solutions, some of which can mix video and static displays, pull in social media feeds, create video walls and so on. However IT should be going beyond that and helping marketing develop this into a fully repeatable, scalable service that can be implemented on-demand by the line of business teams with clear charge-back accountability. This not only makes this a more efficient and operationally sustainable initiative but also makes IT a valuable partner to the marketing team, contributing to the business value of the service, not just commenting on technology merits.

Taking this farther, there will be a need for content creation and management. This will also be integrated with a customer-facing website, to maximise resource use. Company retail messaging can react quickly to a YouTube video going viral that's relevant to a product or a media flurry about a competitor. If the customer-facing staff have tablets, they can draw on the same resources when demonstrating products and services to customers.

How can IT work with marketing on the possibilities for interaction with customer mobiles and location-based services?

Customers are behaving very differently today and no longer relying on learning from traditional ads and in-store marketing and sales staff. Instead, decisions are increasingly based on online product reviews, price comparisons, discount token offers and social media guidance.

Nurture-based marketing across these should be built into the business process. That kiosk browsed at the airport may not be the right time to buy but is an opportunity for a persuasive offer. And location-based services could reveal when a customer is looking at a product online while in a competitor's retail outlet - another chance for a killer proposition. This demands an IT organisation modelled on the ability to rapidly orchestrate services and connections across internal and external providers and across multiple locations.

Touch-enabled signage can offer possibilities for consumer data harvesting, product information browsing, delivering customised bundles and deals: how should this interface with CRM and BI? Can it scale between a kiosk catching the summer holiday traffic at an airport over a 4G link and a three-floor shop following the yearly cycle of demand? What are the true costs and what will the barriers be to moving to a different system if the business case would benefit from it? Understanding the issues, potential solutions and helping the business decision-makers evaluate the options is a capability which the IT department needs to offer. And that changes the skill sets required away from technology and into business analyst and enterprise architect.

This decision matrix is replicated across the retail enterprise, with the same factors that have changed consumer behaviour influencing how retail staff work. At the point of sale, what electronic tills provide the best information for BI? Or can the check-out be replaced altogether with portable devices? How will this work with the evolution of electronic wallets in customer devices? How quickly can buyers, stock management and supplier logistics react to a local or national surge in demand - and how quickly will a tail-off be managed?

Individual departments have never been and will not now be able to evaluate technology vendor offerings to this depth, nor deal with the many technical and practical issues of making things work. Managing reliability, security, privacy, compliance, storage requirements and network impact remain important no matter what the underlying infrastructure architecture. But departments, even individuals, can and will expect to say what they want and have that delivered not as a fixed capability for the next five years but as a service, pulled in as needed often in a self-service format. There is a clear need for an IT department supporting them in making it happen but it will need to be a very different department with deeper skills in analysis, architecture, service integration and service management.

The change required of the IT department is not just about capability. New forms of competitor seize market niches at a speed conventional business cannot match. Next-generation IT has to deliver new capability, from mobility to Big Data solutions, but the difference now is that it has to happen quickly.

Cloud service vendors promise near-instant deployment and very low cost of entry. Enterprise IT should help the business test those promises and specialise in being able to build applications and services to match demand just as quickly, involving the specifiers along the way.

Building a showcase outlet - a retail laboratory - is no longer a luxury for big companies with big budgets. It is vital for developing a competitive differentiation. Rapid innovation is going to define the competitive retail business in the coming years and IT should lead with both agile infrastructure and agile development approaches that flow seamlessly into production.

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This agile, iterative approach to development accelerates the time to a business outcome and kills the deadly habit of having project specifications change during the long implementation cycles, with IT struggling to keep the application relevant to the business but in budget. When the IT department then suggests future enhancements - facial recognition, say, or footfall mapping or deploying a product-specific customer service mobile phone app - there'll be a complete reversal of the old perceptions of IT departments of slow, restrictive and unresponsive.

It is then possible for the company to innovate with agility.

## 3. Next-generation financial services

Although it is possible - and often sensible - to adopt the new technologies of cloud, mobile and DevOps as and when they best address particular project objectives or specific problems, much greater business value can be unlocked by examining all the aspects of a business' operations that could be beneficially changed with a more wholesale embrace of these concepts.

With the fastest growing and most admired companies globally championing these approaches to build their competitive advantage just about every major technology vendor is now concentrating on providing solutions in this area. But when reviewing the experiences of these industry leaders it becomes clear that the key strategic insight is to not think first in terms of how to employ these technologies but to identify the business needs that, when met, promise the richest rewards. Only when this is clearly defined will you be in the right place to work out how and when to apply technologies to fit.

Take the example of an insurer, a financial services company whose success depends on both the accurate identification and quantification of risk and then identifying and communicating with potential customers who experience that risk and need protection. Large customers with specialist needs have always been best served by bespoke deals, where the margins on each deal justify close and continual customisation by specialist teams. The business opportunity here is in extending that sort of precision and customisation down to larger numbers of smaller customers hitherto sold standard products. The dual benefits are better matches to customer needs and better margins for the insurer, which can tune deals to better fit its own business model.

This requires greater awareness of client risk profile, which means obtaining more data, running much more intensive analytics more often, and being more immediate and flexible in communicating contract alternatives with customers.

Better contact with customers, these days, means identifying their preferred communications platform - which is mobile. Smartphones and tablets are the default way to get data and act on it and can be leveraged either through websites designed for mobile use or through apps - or, perhaps most potently, through a mix of the two. Websites are less intrusive but apps can deliver closer engagement and create new and attractive options for insurers such as letting them model the insurance cost of different ways a customer might set up a new business activity, perhaps as part of a broader business planning tool.

To create apps, especially ones that can go beyond one-size-fits-all to those that address fragmented markets in detail, requires an iterative experimental style of development where successful ideas are rapidly grown and those that fall flat can be allowed to fail early. A different mindset, tools and methodologies are needed from development team through to operations to succeed in this new, changing world of applications.

Application development, deployment and management are three distinct processes, each with its own specialist tools and staff with different skills. Likewise governance functions that surround IT such as security management have different tools and disciplines - to identify, authorise and protect customers, to protect data and to enforce governmental and company compliance and regulatory rules.

The traditional approach to development - using large, discrete projects with long requirement definition, development and test cycles that often take months or years before providing even a beta version of the application - do not lend themselves to this experimental style of business.



If each app - and each version of an app - were to be created through standard project management, it would take far too long, cost far too much and be unlikely to be a good match to conditions when it finally appeared. However, it is not just the development process that needs to change. There is no advantage gained in fast development when the demands of the security and operations teams mean the application cannot be easily released to production. Instead, the concept of DevOps is essential to glue all of the above together.

DevOps gives responsibility for the end-to-end lifecycle of an app to multi-functional groups of people who handle development, testing, deployment and in-use management through heavy dependence on automation.

The multi-functional team works on application components in short, focused sprints, wherever possible with cooperative and parallel working to create operations ready applications. This eliminates the sequential, batch working that normally occupied management and inter-team communication but rarely, if ever, encouraged innovation or timely deployment.

Enabling this is an ever-increasing number of automation tools - many themselves now available in as-a-service offerings from DevOps service companies – that streamline this process, for example creating virtualised copies of production systems to allow accurate application testing or automating the packaging and release to production of applications.

This approach produces and deploys end-user mobile apps that offer much better customer experience and can bring in much more data about customers and their behaviours. Combined with other market metrics, internal company financial indicators and other appropriate data, this can produce a model which can offer customer-tailored contractual options that accurately enumerate risk or inspire new and creative insurance offers while providing a cost base from which to plan revenues.

Processing this information in pre-cloud, pre-DevOps days would be a matter of parcelling up packages of tasks into large batches which would run during fallow periods on company infrastructure - overnight or at weekends - with attendant latency and a long turnaround time if iterative changes and what-if planning was needed. It would also have to fit around times when the infrastructure was needed for other tasks or for scheduled maintenance. This in turn would limit the range and quality of offers the insurer could make to its customers.

Cloud analytics and the DevOps agile process change this. Computing resource and database capacity can be dialled-in on demand, while the underlying models or applications that analyse the numbers can be rapidly changed, tested and released internally through automation and feedback. As with apps pushed to customers, application performance management deployed within an organisation identifies bottlenecks, user experience issues and changing resource requirements in ways that can be largely automated and swiftly acted upon.

**“The more data that is available about customers and their behaviour, the better the insurer can model risk - and spot developing areas that may not be covered at all under an existing policy, quickly reacting with new offers or other appropriate communication.”**

This whole approach creates a new way to drive new business opportunities. One example is the use of location data. If a customer makes a flight to a ski or dive resort, an offer can be made directly to the customer's phone for extra insurance cover at very low cost - the actual production of the offer is automated and the insurer's existing data on the customer's demographics and history can produce an accurate basis for the risk management.

Another location-based approach is if a natural or other event impacts a number of companies in a certain area - adverse weather, civil unrest or a major disaster. In such cases, the insurer can contact its clients who haven't yet made a claim, asking if there is any help they need or whether they need to initiate the claims process. This proactive service substantially improves the user experience and helps the insurer itself understand its exposure as well as plan and manage its own response.

The more data that is available about customers and their behaviour, the better the insurer can model risk - and spot developing areas that may not be covered at all under an existing policy, quickly reacting with new offers or other appropriate communication.

This approach needs automated rules working in conjunction with analytics - whether or not you call them Big Data isn't important. It certainly needs people who are skilled at configuring and understanding analytics.

## 4. Towards a DevOps, agile future?

The above scenarios don't have to involve lots of developers and managers tending a large analytics package. Instead an IT department capable of researching, assessing and orchestrating a wide range of cloud and internal services and running an application development programme can build a system precisely tailored to the business need.

Building an application that gathers data from end users and management systems, while automating as much of the process of updating an application as possible, brings differentiated customer experience, better operational efficiency and precise risk management. And because it doesn't have the costs and timescale of a large project team concerned with project milestones and detailed approval and release processes it can be done quickly and experimentally, allowing creative ideas to be tested on real customers.

**“Transitioning from existing methodologies, infrastructures and systems to a DevOps-centred agile development, management and deployment system does not need to happen all at once”**

Transitioning from existing methodologies, infrastructures and systems to a DevOps-centred agile development, management and deployment system does not need to happen all at once. Adoption of one or two components, where mandated by a real business need and with clear expectations of the benefits, is a perfectly sane way to proceed - and may be the most sensible path in larger companies with substantial existing systems that have more inertia and present more of a challenge to change.

Yet because the benefits of DevOps-style continuous development - backed by analytics, agile IT services, cloud-provisioned resources and mobile end-point apps - are such a good match to data-driven businesses, future competitive advantage can only lie along that path.

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Older systems now have a distinctly limited life, especially when deployed against competitors who have faster times to market, more flexibility in reacting to changing conditions and a lower fixed cost base to maintain.

Put the business case first and choose the technology accordingly - but don't be surprised where that process leads.