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Before I look at what we can expect to happen in enterprise mobility in 2015, it is useful to look at where we currently are.

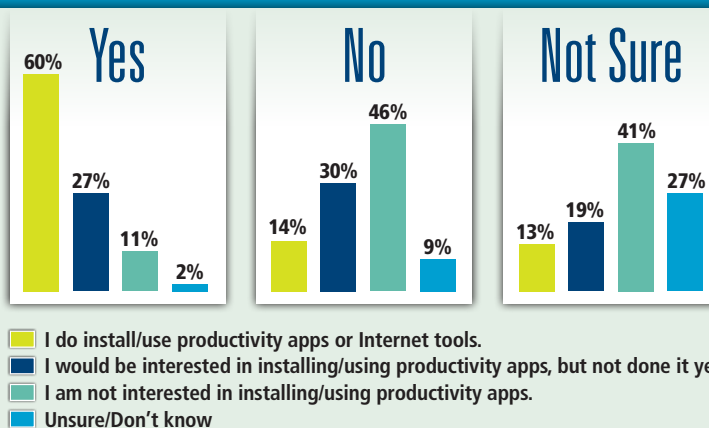
Earlier in the year, I wrote in 451 Research's annual enterprise mobility predictions report, how the progression of mobility in the enterprise so far is akin to a child entering its early awkward teenage years. By this I meant that mobile technologies have emerged, are growing rapidly along with a broad understanding of the potential and the challenges of making them work in the real world.

We are also beginning to realize that as the industry grows some of what pre-occupied us at the start — like whether to develop a native, HTML5 or hybrid app; whether and how to make BYOD work; and how and when to provide offline access for apps—we're all missing the point.

These issues are relevant, but are not in and of themselves at the root of how companies will become more mobile mature. In fact, this preoccupation has delayed consideration of a wider span of multi-disciplinary factors that will have a bigger impact.

In essence, the 80:20 has been the wrong way around; companies need to stop focusing on the 80% of what makes the 20% work and instead focus on the underlying process and architectural is-

FIGURE 1 IT allows me to install productivity apps or Internet tools. Source: 451 Research, 2014 US Enterprise Mobility: Employee Survey, September



sues which will drive most of the growth of new projects.

A set of strategies is beginning to emerge in terms of how not only the technologies, but people and process can come together to stimulate greater maturity. This report will focus on some of those strategies and look ahead to what we expect to happen around them in 2015.

➤ Consumerization continues. Our IT Decision-Maker and Empowered Employee September surveys show that consumerization is continuing apace in the enterprise with 58% of employees believing they would be more productive at work with access to personal technologies.

In actuality, 79% of the smartphones in the workplace are employee owned; 29% of employees are using consumer applications for work; and 14% of employees who know that their IT policy is that they should not be using consumer devices and applications for work, use them regardless. (See Figure 1.)

Companies may come to offer alternatives to consumer tools to employees around which there is enough of an incentive for adoption, but there is likely always going to be a lag in innovation between the consumer and enterprise technology. Certainly in 2015, we anticipate that consumerization will continue to drive the agenda.



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► Appetite, investments grow.

Despite this, around 60% of large enterprises are permissive to consumer mobile technologies being used by their employees. In addition, 63% of companies (and 76% of large enterprises) say they have a comprehensive mobile strategy (which even if mostly tactical, indicates a perception that one is needed), and 50% of companies (and 60% of large enterprises) will increase their investments in enterprise mobility solutions in 2015. In terms of the specific skills areas, companies will look to add the following:

- Mobile app development (24%)
- Mobile governance, risk and compliance (12%)
- Developing a more mobile-friendly IT architecture. (7%)

Plus, 22% will seek to add someone to head mobile strategy.

Tellingly, whereas 75% say that the IT department currently defines and sets spend around mobile projects now, 50% believe that lines of business will be doing this in two years. (See Figure 2.)

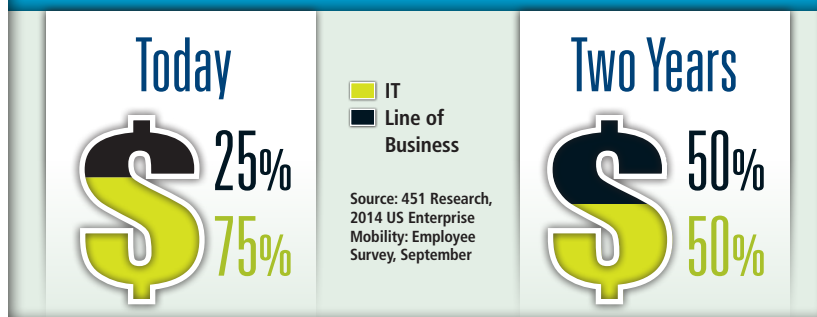
All in all, in 2015, the realization will continue to dawn on companies that locking down, waiting and dipping a toe in the water are not going to work as more of their peers jump in and work to make mobile a business driver, however slow and painful that may prove to be.

Of those companies that already have mobile application plans, around half (52%) plan to internally develop more than 15 mobile apps next year.

► MAM complement MDM.

An important stimuli for the gradual uplift in interest around enterprise mobile applications has been the emergence over the past few years of mobile application management (MAM) services—the ability to assert policy, security and

FIGURE 2 Who defines and sets our company's spend for mobile technology?



compliance around applications, and the data and content being consumed in those applications, rather than the devices they are being consumed on.

The goal with MAM is to give the requisite control to the IT department without compromising the end-user experience. Our data shows that in two years, 46% of the companies with any kind of mobility management tools deployed will have invested in MAM. The wider adoption of mobility management capabilities across companies will further commoditize services and consequently drive vendors to extend the reach of their tools to dodge the inevitable pressure on pricing.

Although it is very early days for companies looking at wearables and Internet of Things solutions for use among their employees, in 2015, EMM vendors will also look to further extend the utility of their platforms out to these nascent areas.

In addition, they will try to add more value by deepening the analytics that can be reaped from their platforms. Therefore, next year will see MAM become much more common in enterprise mobility management (EMM) deploy-

ments alongside mobile device management (MDM).

► Agile development will displace the "waterfall" approach.

As much as the enabling technologies are falling into place to make it more realistic for companies to break out the way they think about mobile from the silos in which it has traditionally resided, the process needs to support this.

Over the past year it has become clearer that traditional waterfall development across the software lifecycle is ill-suited to mobile and that agile methods are more applicable.

The traditional waterfall way of thinking about the application lifecycle is characteristically sequential and staggered, with project owners handing a business brief to designers, who hand over to developers etc.

In a mobile world, the complexities of getting the user experience right and ensuring applications are supported across multiple platforms has, in reality, often meant companies either compromise on the experience they release to users or undergo a tortuous process of back and forth—in particular between

designers and developers as they try to address defects in a retrograde way.

Compounding this has been a lack of integrated capabilities for technical and non-technical stakeholders to work in concert before deployment.

Many large enterprises are already outsourcing some of their development activities to design agencies, development houses or integrator partners. With 40% planning to increase this kind of outsourcing over the next year, there is a key need for collaboration across enterprise IT, lines of business and any external partners that may be involved. (See Figure 3.)

What is needed is a means of rapidly prototyping apps, opening them out to preview by all stakeholders and

“factory” process around gaining scale across the software development lifecycle. (See Figure 4.)

Factory describes a set of processes extending from opportunity identification and solution ideation to include a standardized set of processes and technologies behind the governance, build, distribution and post-production maintenance and support of chosen mobile projects.

The factory element itself is essentially a combination of process and the technical route to deliver on the solution that was chosen in the initial ideation phase, with multiple such factories able to be set up and disbanded as required.

The net result is that companies can get much closer to continuously innovat-

leverage using the agreed upon guidelines established in the factory processes.

» Developer will be redefined.

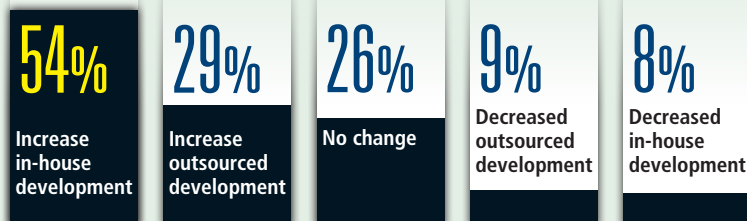
With companies turning to agile methods, factory processes and internal developer programs, the notion of what a developer is, will also continue to change in 2015. Of the 100s if not 1000s of workflows and processes that will be mobilized, there will be a combination of off-the-shelf prebuilt mobile SaaS applications, modifiable application templates and platforms and tooling for custom development.

The reality is that despite the huge commonalities in processes across companies, there will always be the need for custom specifications to make mobile apps fit more specific purposes. The bulk of mobile apps will therefore come from platforms and tooling allowing custom development.

One of the obstacles to greater custom app development in some of the early mobile enterprise application platforms (MEAPs) however, has been the onus on developers to learn new development languages and tooling. In response to this there has emerged, over the past few years a raft of new model-based tools and platform services leveraging different combinations of application templates, componentized modules, easy-to-use drag and drop visualization studios, internal application stores and cloud-based EMM services.

The levels of abstraction above the source code that has traditionally been the realm of the enterprise developer is allowing non-professional developers—whether they be a technical business analyst, citizen developer or even a non-technical team member—to compile, deploy and manage applications.

FIGURE 3 How will your mobile application development strategy change over the next 12 months?



Source: 451 Research, 2014 US Enterprise Mobility: IT Decision-Maker Survey, September

integrating testers’ real-time feedback from when the app is created to when it is deployed—essentially a compressed lifecycle where at all stages the stakeholders are as close as possible to what the end users will ultimately experience.

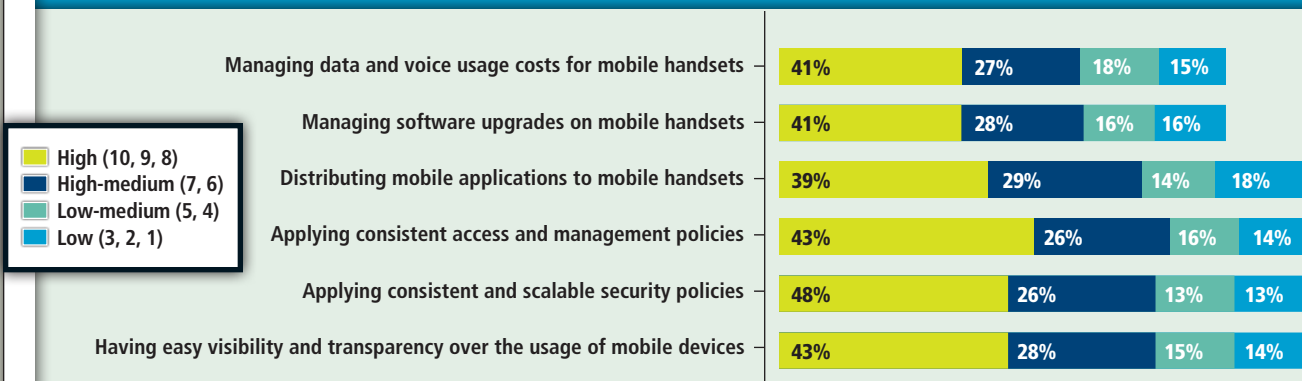
» App factories and internal developer programs will proliferate.

A growing number of companies in 2015 will turn to what is being described as a

ing in a flexible way and, in so doing, they give themselves a better chance of both keeping pace with and meeting user requirements.

Alongside the focus on agile methods and ‘factory’ processes, in 2015 we also anticipate that more companies will create internal developer programs. Internal enterprise data assets will be exposed for internal developers across business units and external development partners to

FIGURE 4 On a scale of 1 to 10, please rate the level of difficulty of managing the following items.



Source: 451 Research, 2014 US Enterprise Mobility: IT Decision-Maker Survey, September

Much of this tooling is still immature, but shows promise in democratizing development and hence, helping companies broaden their focus both in terms of use cases being mobilized but also in terms of the internal human resources they can leverage to deliver this.

» Mobile middleware emerges.

There is still no commonly accepted methodology by companies of how to integrate the looming number of mobile apps that will come on stream, with private and public data sources, and how to orchestrate that data while providing the required level of manageability, security and the aforementioned agility, across this whole lifecycle.

In 2015, we will see more vendors spin their own versions of what mobile middleware should look like. Already we see many visions of content-agnostic mobile platforms coming from aspirants like the traditional MEAPs and newer mobile application platforms (MAPs), mobile Backend-as-a-Service (MBaaS), business process management (BPM), mobile virtualization and mobile col-

laboration platforms, alongside existing integration solutions such as SOA frameworks and API management platforms—all of which have looked to extend their relevance to address mobile.

What almost all of these vendors have in common is the aspiration to become, if not the defacto, then a core part of the infrastructure supporting business mobile apps, as over time the balance of businesses' investments shift from desktop to mobile enablement.

To think that legacy integration methods will simply extend to address all of these eventualities is naïve given the fundamental differences that mobile represents, the pace of innovation being driven by mobile-born vendors and the history of legacy approaches ceding ground to new during major technology shifts.

» Recommendations

Up to recent times, much of the focus in terms of what and how companies are deploying mobile has been on the technology itself. However, broadly speaking, the majority of companies are still not much more mature in terms of their

actual deployments than they were a few years ago—certainly not in the context of the scope of what will become.

In 2015, we anticipate seeing more of the technology, people and process pieces of the jigsaw coming together as companies, by means of broader-based experimentation, look to grow how they use mobile as a more strategic driver within their business environment. Based on this we make the following recommendations to enterprises:

- **Test new solution implementations on the edge of your IT infrastructure.** As the technology, people and process elements begin to fall in place, companies should scenario plan what impact their growing deployments would have to avoid any unwanted surprises and delays when they go fully live.

They should also, however, think twice on waiting to deploy until they have "the perfect answer." Mobile moves too quickly for that to make sense, so companies should deploy new solutions sooner and plan on more frequent iterative updates to improve the experience as they go.

During the initial rollout, they should have metrics and performance monitoring in place in order to plan where updates and improvements should best be prioritized.

- **Get used to the idea of data as your inventory.** As deployments, users and the amount of mobile data grow, companies should rethink data not as something housed somewhere, but as something perpetually in transit.

Its value to your business depends on the degree to which you can understand it, use it and enhance it, in transit. In effect it becomes a core part of your inventory. This will impact your entire IT estate with any of the technology, people or process parts of the chain preventing the continuous flow of that data an obstacle that needs to be addressed.

- **Beware the marketing spiel, “end-to-end” falsities and look for openness, transportable IP and interoperability.** The immaturity of the enterprise mobility landscape has given rise to plenty of hype as vendors try to define the market in their favor.

Companies should carefully question prospective vendors around whether and how they can give you transportability of either your frontend IP or of any custom backend integration you have made. Likewise despite end-to-end claims, no one has integrated best-of-breed functionality at each stage of the lifecycle.

Vendors should know this and should be open to integrations with other popular (e.g. advanced power management (APM) and advanced lifecycle management (ALM) tools), and should either custom integrate or provide you with a means (e.g. through an open API) to make your own integrations with a vendor of choice where they are more specialist. //

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