ENTERPRISE MOBILITY EXCHANGE

LOOKING AHEAD TO 2016:
THE ENTERPRISE MOBILITY EXCHANGE ANALYST INSIGHT REPORT

DECEMBER 2015 MARKET REPORT

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ABOUT THE AUTHOR

David Krebs is the Vice President, Enterprise Mobility & Connected Devices at VDC Research. He has more than ten years of experience covering the markets for enterprise and government mobility solutions, wireless data communication technologies and automatic data-capture research and consulting. David focuses on identifying the key drivers and enablers in the adoption of mobile and wireless solutions among mobile workers in the extended enterprise.

His consulting and strategic advisory experience is far reaching and includes technology and market opportunity assessments, technology penetration and adoption enablers, partner profiling and development, new product development and M&A due diligence support. David has extensive primary market research management and execution experience to support market sizing and forecasting, total cost of ownership (TCO), comparative product performance evaluation, competitive benchmarking and end user requirements analysis.

FOREWORD

The global mobile workforce topped 1.3 billion workers in 2015, a year which also witnessed smartphone shipments in excess of 1.4 billion units. While ready access to highly functional mobile devices, comprehensive wireless network coverage and development of capable mobile applications is transforming how businesses operate, as we enter 2016 the enterprise mobility opportunity remains very ahead of us.

In fact, according to VDC's research, as of 2015 only one in three mobile workers have mobile access to enterprise applications (beyond email) or access to specialised mobile applications to support their workflows. This is beginning to change – albeit slowly – and for organisations able to properly harness this opportunity the benefits in increased productivity, improved customer service, optimised asset management, reduced cash cycles, and the like, will be immense.

For us at VDC Research, the mobile application represents the epi-center of digital transformation and in this report we will explore some of the key opportunities and requirements for organisations investing in enterprise mobility applications in 2016, as well as the challenges that lay ahead and how mobility leaders can overcome these.

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Most users were dissatisfied with the pace of their organisations' mobile initiatives and mobile application adoption in 2015 (exhibit 1). This comes as no surprise, as our research also showed that companies have yet to build a mobile-first business strategy. To do so, organisations must bridge the gap between their IT department and their lines-of-business (LOB); a problem that has existed for some time now. To do so, organisations should adopt an application-centric view of the world; this will help to open the dialogue between IT and LOBs.

EXHIBIT 1: USERS ARE DISSATISFIED WITH THE PACE OF THEIR ORGANISATION'S MOBILE INITIATIVES

MOBILE APPLICATIONS AT THE EPI-CENTER OF ENTERPRISE DIGITAL TRANSFORMATION

With mobile device penetration nearing saturation, enterprises are shifting their strategies towards creating greater value from and enhancing their applications. This means a fundamental shift towards more dynamic applications through greater contextual awareness and environmental sensing and measurement capabilities. For enterprises this will mean the development of multiple use cases and the integration with various backend systems and systems of records.

This coincides with a major trend – and challenge – that we predict will continue well into 2016. Namely, there has been a marked increase in the focus on the integration of mobile applications with backend applications creating opportunities for more flexible enterprise backend services.

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Internal development teams are experimenting with new platforms and tools to gain efficiencies as they create new backend services, connect to existing services, and create custom front ends for services. Organisations are keen on being able to save time in the coding and prototyping process and, predictably, are price-conscious. But organisations also place weight heavily on the maturity of the platform they choose (market penetration) as well as the size and level of engagement of the developer community.

These next generation mobile applications and use cases we see enterprises focusing on over the next year possess some fundamental characteristics in that they are becoming more intelligent with greater integration of contextual information.

Mobile applications will be designed to interact more fluidly with other applications and respond dynamically to the surrounding environmental data. What will this mean from a use case perspective?

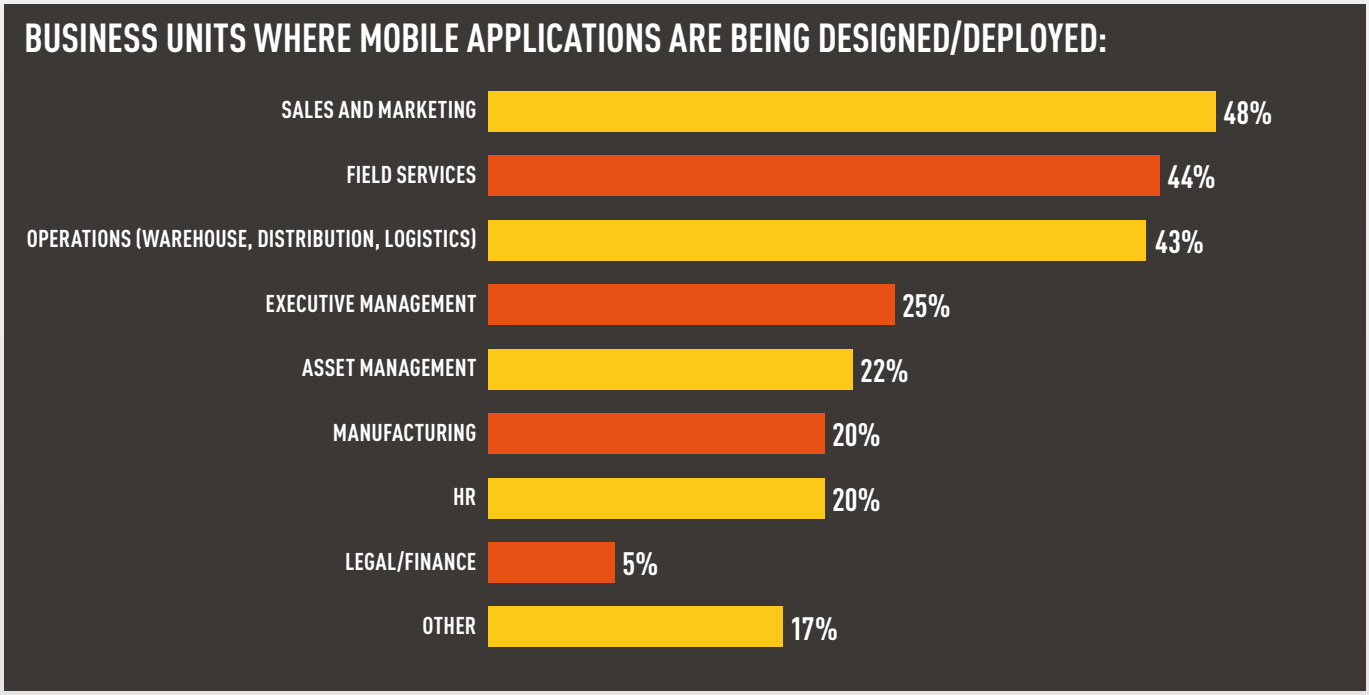
- Seamless integration of workflows and applications across multiple channels
- Autonomous interaction of field workers and their mobile solutions with surrounding assets to adapt their workflow from reactive data collection to interactive analysis
- Ability to react more intuitively in customer or asset facing interactions enabled by smart alerts and prompts being pushed to mobile workers based on environmental intelligence
- Greater levels of personalised services and interactions based on customer preferences and contextualised environmental intelligence

With mobile becoming business-critical and more strategic across all industry segments, investments in mobile applications that allow employees to be equally productive, whether they are at their desks or mobile, are inevitable.

These opportunities are being evidenced by mobile enablement occurring across a variety of roles that range from field technicians and maintenance engineers to warehouse staff and retail associates, who are benefitting from the ability to gain access to data quickly (and easily) as well as capture data while on the go.

Exhibit 2 shows the lines of business where organisations are deploying mobile applications and focusing their investments for 2016.

EXHIBIT 2: WHERE MOBILE APPLICATIONS ARE BEING DEPLOYED



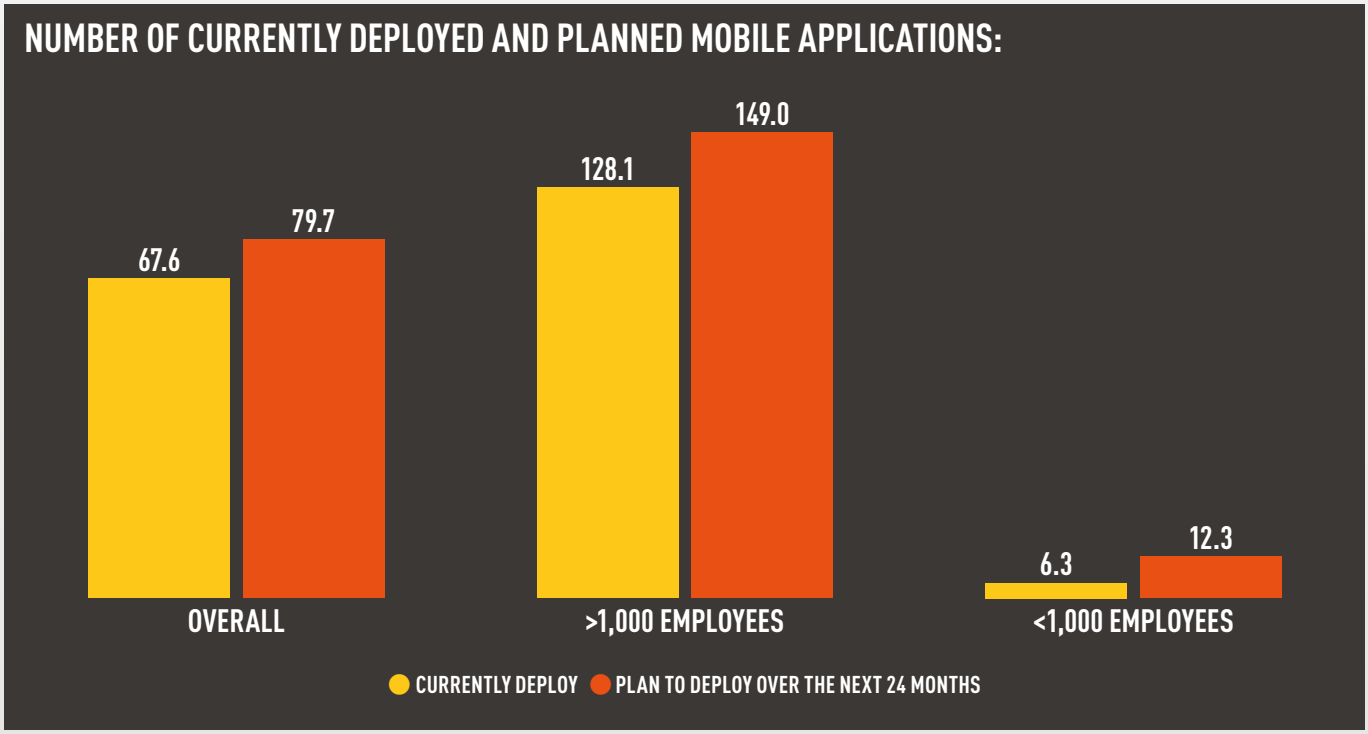
For mobile applications to become the new face of a business, organisations must be deliberate in choosing which applications to focus on, which application styles to utilise, and which development tools and/or platforms to take advantage of to build custom applications.

The mobile development and tools space is one of the most active in the ecosystem of mobile-first vendors. Whether native, hybrid, or HTML5 web applications, the number of mobile design and development tools available to developers continues to grow.

What decision makers have been realising is that there is no silver bullet and each approach comes with key benefits and challenges. Some of the key requirements as enterprises consider mobile application development in 2016 include:

- With businesses generating more data than ever before, there is an increasing demand for more agile mobile applications with faster response times
- Behind robust security, the most critical mobile application requirements include intuitive user interfaces and ease of data access. This will be critical especially with how enterprises handle offline support and more sophisticated data synchronisation requirements
- The volume of mobile applications developed and supported by enterprises continues to grow. According to VDC's research, large organisations have deployed an average of 128 mobile applications and are expecting their deployments to expand by 16.3per cent in the next 12-24 months (exhibit 3)

EXHIBIT 3: CURRENT/PLANNED MOBILE APPLICATIONS DEPLOYMENTS



2016 ENTERPRISE MOBILITY DEVELOPMENT TRENDS

RAPID MOBILE APP DEVELOPMENT AND MODERNISATION SOLUTIONS PROVE THEIR METTLE

Modifying legacy application code can be time-consuming and expensive. However, ultimately, the result will be a more powerful and flexible "modernised" application. A new class of powerful rapid application development and modernisation solutions for automated object-based transformation can take the pain out of manually modernising code, and result in more reliable, cost-effective and feature-rich mobile apps.

Just as mobile device proliferation spurred the BYOD movement, the growing appetite for mobile applications is driving another BYO trend: bring your own tools (BYOT).

Finding viable alternatives to source code transformation is largely dependent on an organisation's business objectives. If an organisation's primary objective in converting legacy code is risk reduction (reducing maintenance costs, downsizing, etc.), then recoding is likely the only option. However, if the motivation is to enable existing back-end systems to work with web applications, there exist a variety of viable alternatives to rebuilding applications from scratch.

User experience deficiencies have been a key challenge for rapid mobile development solution providers.

User experience deficiencies have been a key challenge for rapid mobile development solution providers. Many are addressing key pain points – for example around mouse support for touch centric devices – to more seamlessly bridge the performance gap. While these new virtualisation solutions offer enterprises a relatively quick way to mobilize existing windows applications, many of these solutions are still technically a compromise because they do not fully take advantage of mobility and may frustrate some users who wish to recreate a desktop experience on a mobile device.

VDC expects this category to flourish, particularly with midmarket and SMB organisations, which have no in-house development talent and small mobility budgets.

BYOT

Just as mobile device proliferation spurred the BYOD movement, the growing appetite for mobile applications is driving another BYO trend: bring your own tools (BYOT). BYOT has made supporting a wide assortment of tools and protocols a requirement for mobile application development platform vendors (just as organisations had to adapt BYOD, platform vendors must adapt for BYOT).

Not only does the approach cut down on the learning curve for an organisation's in-house developers, but it also makes it easier to bring in outside help when it's needed. Old-school development platforms took a stovepipe approach to creating software – the tools used in the process were established and developers had to accommodate the platform.

DEVELOPMENT MOVES TO THE CLOUD (LIKE EVERYTHING ELSE)

Cloud computing is fundamentally disruptive to the traditional models of the IT services industry and to product delivery – helping to empower new business models, allow enterprises to take a different view on IT costs, and spur more rapid innovation. A wide variety of traditionally asset-heavy industries have already been disrupted through the utilisation of cloud technology alongside the increased prevalence of mobile computing.

In our view, cloud computing's value is not solely related to the efficiency and cost gains offered by having hardware and software in the Cloud versus ownership on-premise, but increasingly its value

proposition extends further by offering users the ability to quickly launch new applications while being able to then dynamically change aspects of the service as the business demands.

The Cloud effectively enables the software vendor to focus on its core business, the application, and not on the back-office processes required to deliver it. We believe that, as a result, cloud computing can help to spur innovation and foster creativity by shifting developer attention to the end-user application while removing many of the cost, management, and infrastructure hurdles related to the development, testing, and launch of new services.

MOBILE BACKEND AS A SERVICE (MBAAS) TO THE RESCUE?

mBaaS solutions are attractive to large organisations as they can relieve developers of the need to code common functions in mobile applications. These solutions are also appealing to web developers as they enable them to utilise their existing skills for mobile application development. The mBaaS platform market has quickly become fragmented due to the functionality that some companies have begun offering. This has made vendor selection confusing and a challenge for prospective buyers of mobile development platform solutions.

VDC's data shows that integration with back-end systems and databases is consistently one of the most challenging elements of extending applications to mobile platforms. Mobile enterprise ROI and scope creep also remain as key challenges to development in addition to cost. End users revealed that one of the major challenges in mobile application development stems from the complex nature of the mobile ecosystem.

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Creating mobile applications that are well designed and work efficiently can be a complex task and a time-consuming process. Device management remained as a key challenge due to expanding device deployments and the enterprise-oriented updates to Apple's and Google's most recent OS releases.

THE CHALLENGES MOBILITY LEADERS WILL FACE IN 2016

There is no question that the influx of mobile devices into the workplace is creating significant challenges for IT from the management, security, and support perspectives, particularly once organisations expand their mobile application range beyond de facto horizontal mobile applications like email, messaging, and calendars.

Due to the rapid pace of change in regulatory and technology arenas, implementing stricter mobile data security is a critical requirement.

Governance and compliance remain as key pain points, as growing digital data regulations in various sectors, such as health care and government, mean that companies have to be sure they know exactly where their data is stored, who is transferring it, and what the level of encryption is for all of their content. Due to the rapid pace of change in regulatory and technology arenas, implementing stricter mobile data security is a critical requirement.

DO RUGGEDISED DEVICES STILL MATTER? YES. BUT WHICH OS TO TURN TO NEXT...

Dating back several decades now, ruggedised devices have been deployed to support some of the most critical operational workflows within today's organisations. These devices are ubiquitous in warehouses and distribution centers for inventory and material management applications to courier delivery drivers supporting parcel delivery verification and beverage distributors supporting digital exchange.

However, the dominant OS – Windows CE and Windows Embedded Handheld 6.5 – supporting these devices reached the end of its meaningful life at the beginning of 2015 and will reach the end of its service life (meaning no more security patch updates) by 2020. With applications lacking forward migratability to any platform, countless enterprises are on the hook to recode and modernise these legacy workhorses.

This represents both a massive challenge and an opportunity for mobile application development platform and tool vendors moving forward. However, given these solutions are tied to work flows that are business-critical; it is not a decision organisations should take lightly.

What is less clear is the direction to take in terms of next generation platforms. Options available to customers include Android, Windows Embedded Handheld 8.1, iOS, and eventually Windows 10. These decisions have also had a significant impact on existing Windows ISVs, a critical community supporting enterprise mobility solutions.

While these organisations are continuing to support legacy customers, the majority have focused their R&D resources towards developing next generation applications for their customers on Android and iOS. Momentum leading into 2016 is behind Android representing the next generation platform for ruggedised handheld devices with the window of opportunity for next generation Windows platforms rapidly closing.

2016: THE YEAR OF THE CONTEXTUAL MOBILE APPLICATION

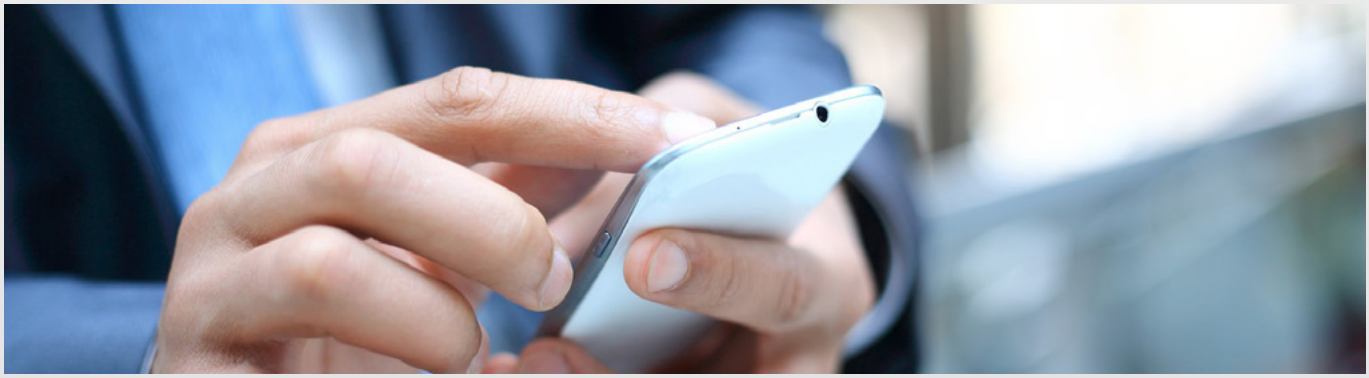
Businesses continue to be drawn to mobile applications as they look for inventive ways to minimise costs while simultaneously improving communication and collaboration across their organisations. Mobile enabling a workforce can bring immediate productivity gains, but streamlining workflows using mobile applications remains a complex and challenging endeavour.

We see enterprises making significant gains towards developing more immersive and functional applications to transform workflows and leverage the growing installed base of mobile devices and expanding mobile workforce.

Although the downside risks remain ever-present, the benefits of enterprise mobility are very real.

That said, these are challenging investments, often with difficult to measure returns on investment. Moreover, with a fragmented vendor landscape with many smaller specialised solution providers, oftentimes the prudent approach is to start small, fail fast and avoid getting locked into any single vendor's stack.

Although the downside risks remain ever-present, the benefits of enterprise mobility are very real.



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Mobile Labs provides enterprise-grade, next generation testing tools for mobile app testing, mobile device testing and mobile website testing. With a focus on security, agility and affordability, Mobile Labs delivers solutions to help enterprises deploy quality mobile apps for Android and iOS platforms while also securely managing mobile devices and test device access via private cloud.

Mobile Labs helps today's enterprise IT and QA teams improve mobile application testing management, minimize the number of mobile devices required for test and strengthen mobile device and mobile app security. To learn more about Mobile Labs, **visit: www.mobilelabsinc.com**

Panasonic Solutions for Business

For nearly two decades, enterprises and government agencies around the world have relied on Panasonic for mission-critical mobility deployments. The company's Toughbook and Toughpad mobile computers deliver reliability, productivity, functionality and connectivity in the most demanding markets. These attributes, combined with extensive vertical market expertise, a broad selection of service and support offerings, and a network of industry partnerships allow Panasonic to meet the needs of field workers, IT staff and the C-Suite. As the leading supplier of purpose-built, rugged mobility solutions to field service organisations, utilities, healthcare institutions and public safety agencies, Panasonic enables organisations to reduce the complexity of deploying, securing and managing mobility solutions, helping them achieve their objectives and drive innovation.

About Panasonic

Founded in 1918, Panasonic Corporation is a worldwide leader in the development and engineering of electronic technologies and solutions for customers in residential, non-residential, mobility and personal applications. Committed to pursuing new value through innovation across divisional lines, the company strives to create a better life and a better world for its customers. **Visit: http://us.panasonic.com/Toughbook**

WillowTree, Inc. is a mobile strategy, design and app development company whose focus is to bridge the highest level of consumer user experience (UX) with enterprise-grade deployments and security. Founded in 2007, WillowTree is a chosen partner of the world's leading companies including GE, Johnson & Johnson, Time Warner, AOL, AEG, and Harvard Business Publishing who trust WillowTree to guide and execute their powerful mobile solutions. For more information, visit **www.willowtreeapps.com**. We Take Mobile Personally™

ABOUT ENTERPRISE MOBILITY EXCHANGE

Enterprise Mobility Exchange is an online community for global mobility professionals and business leaders who are leveraging mobile technology and services to improve operational efficiency, increase customer acquisition and loyalty, and drive increased profits across the entire enterprise.

At Enterprise Mobility Exchange we're dedicated to providing members with an exclusive learning environment where you can share ideas, best practice and solutions for your greatest mobility challenges.

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