



Research Agenda, Q1 2017

Enterprise Mobility

Covering the demand-side dynamics, supply-side technologies and disruptive trends shaping the future of business mobility.

The Enterprise Mobility Channel delivers market insight and strategic counsel to businesses deploying mobile technologies, vendors providing those technologies, and investors investing in them. Our team's overall focus is the impact of mobile technologies on businesses' digital transformation strategies. We believe the promise of mobility is that it frees data from the internal systems that house it, turning it into a core business inventory. The success in enriching this data inventory through the context and presence of the mobile user, understanding it through analytics, and managing and recycling it across infrastructure into continuously iterated mobile experiences is what will determine winners and losers among businesses utilizing mobile.

ABOUT 451 RESEARCH

451 Research is a preeminent information technology research and advisory company. With a core focus on technology innovation and market disruption, we provide essential insight for leaders of the digital economy. More than 100 analysts and consultants deliver that insight via syndicated research, advisory services and live events to over 1,000 client organizations in North America, Europe and around the world. Founded in 2000 and headquartered in New York, 451 Research is a division of The 451 Group.

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Overview

Our focus is on the demand-side dynamics, disruptive trends and supply-side technologies, which we believe will shape the near-term future for enterprise mobility:

Demand-side dynamics:

- The chicken-and-egg of organizational change and mobile technology adoption
- Best practices in forming and managing internal- and external-facing mobile strategies
- The impact of mobile on the extended supply and integrating demand chains
- The impact of mobile technologies on the software development, application lifecycle and associated roles and workflows
- The impact of mobile technologies on mobile end-user workflows, business processes and the digital experience
- The impact of mobile on line-of-business productivity, engagement and monetization strategies

Supply-side technologies:

- Mobility management infrastructure
- Mobile application lifecycle management
- Mobile applications and services
- Mobile payments and digital commerce

Disruptive trends:

- The intersections of mobile, 'legacy' technologies and the Internet of Things (IoT): Enterprise use cases for mobile and IoT as net new, replacement and complementary deployments.
- The digitization of the mobile user: The impact of mobile on user productivity among employees and the extended enterprise, changes to the functional definition of user roles (e.g., contractors, 'citizen' roles), and the overall impact of mobile on businesses ROI and concepts of technical debt.
- The intersection of mobile and data platforms: The role of data platforms and data management in the promise of mobility to flatten organizational silos and redefine outdated concepts of 'back office' and 'front office.'
- Market convergence, divergence and redundancy: The impact respectively from 'big IT' and other incumbents, and pure-play challengers on technology convergence, divergence and the redefinition of what white space means in the enterprise IT landscape.
- New emerging technologies: The impact of newly emerging technologies such as cognitive computing, virtual and augmented reality, and location-based services rendering mobile experiences more contextual and intelligent.

Despite significant hype around the promise and prospect for mobility in the business landscape, there has yet to be a mobile explosion beyond the adoption of consumer hardware in smartphones and tablets. What is clear is that the umbrella of mobile technologies does represent a sea change in how to think about technology as a driver of organizational strategy, business process, user engagement, and ultimately how business value is understood and created. The reality though is that most organizations are as technically unready for much of the 'mobile-first' and 'rip and replace' visions emanating from the supply side and mobility is overall still very niche when considering the full gamut of business process and workflow. Most companies are still in a very opportunistic phase of looking to pick off low-hanging fruit.

451 Research's IT Decision-Maker and Employee surveys shows that despite 64% of employees now saying they use a smartphone for work, neither the mobile proportion of the overall workforce nor the amount of time non-mobile workers are spending in mobile environments has changed significantly over the past five years. This is indicative of the lack of embeddedness of mobile hardware, software and services in core business processes and workflows.

The more populous mobile apps are still addressing either generic productivity tasks like email or sales and field-force employees. There is some evidence, however, that the focus is shifting as more companies begin to explore the potential for mobile technologies to change internal operations and workflows tied to business systems such as human capital management, extended supply chain management, and finance and marketing that have not traditionally been associated with mobility.

The shift will not happen overnight. The reality is that the mobile solution landscape for the business market is still very nascent and a number of challenges prevail. A hugely heterogeneous landscape of mobile devices, form factors and OSs, a lack of extensibility of legacy IT tools into the mobile domain, and a lack of build, integration, security and strategy skills suitable to making mobile technologies work have all made the solution landscape a very tricky one for enterprises to grasp.

Finally, significant fragmentation exists. We count more than 120 mobile application platform products, more than 90 mobile application back-end infrastructure products, more than 80 front-end tools and more than 100 enterprise mobility management (EMM) products targeting the business mobility market. This is in addition to hundreds of prebuilt applications, and plenty of other vendors across infrastructure, integration, monitoring, management and security markets, all looking for their share of slowly growing business budgets around mobile.

Although many of these challenges are stifling greater mobile maturity, supply-side innovation continues to accelerate. New developments in cognitive computing, virtual and augmented reality, location-based services and IoT, for example, are all stretching the parameters of how we can think about mobility impacting the way businesses organize themselves and interact with their employees, partners and customers. What businesses need is a way to think about cloud, mobile and total data as helping them gradually shift into their digital transformations.

To address this fast-moving landscape, the Enterprise Mobility Channel focuses on the following technologies.

Mobility Management

The inherent and ongoing complexity of mobile environments has given rise over recent years to plenty of different ways for businesses to think about how to provide access and apply policy, control and security to mobile hardware, software and service assets. EMM is an umbrella term that describes some of this management infrastructure and, in our definition, encompasses mobile device management (MDM), mobile application management (MAM), mobile content management (MCM), mobile security and a variety of dual persona and container methods for securing applications and data. We also include in this mobility management infrastructure technologies such as virtualization and application refactoring, along with single-pane-of-glass workspace aggregator technologies providing virtual environments for users to access their apps, content and data.

Mobile Application Lifecycle Management

Mobilizing business processes into new applications and workflows has its own very distinct challenges. Mobile has elevated the importance of building context, personalization and responsiveness into app experiences requiring greater flexibility and scalability in the underlying infrastructure, and new tooling to create to meet rising expectations. With new hardware and software threat vectors it also requires new thinking about security, risk management and response. The entire software development lifecycle is being impacted by mobile technologies. New blueprints for application integration have emerged, development platforms have gone through inverse cycles of functional integration and modularization, and there are specific requirements around certification, code signing, and the creation of key stores for mobile apps, along with other processes involved in getting apps deployed to public app stores. Mobile apps are typically tested on emulators and simulators or actually on physical devices; monitoring the performance of deployed applications and understanding them through analytics is all fundamentally different than what would be required for desktop applications. Having visibility and introducing automation across this tool chain can be hugely challenging. As tools change, so do roles across the pre- and post-production lifecycle.

Mobile Applications and Services

Alongside mobility management and mobile application lifecycle technologies, there are a plethora of off-the-shelf mobile applications, individual services and new technologies that enterprises build in or use in conjunction with their applications. No incumbent business application vendor has yet successfully found a way to just push a desktop application experience to mobile. In fact, many of the technologies we have already discussed have come about exactly because of the inappropriateness of thinking about mobile from a desktop mentality. This has led to business applications being re-envisioned and re-written specifically for mobile user cases. We will examine the state of current employee-facing mobile applications, including the adoption and usage of CRM, ERP, collaboration and analytics, and (as digital marketing shifts to mobile) the new entrants offering mobile-first digital marketing technologies to fill the gap of existing marketing automation technologies. We will also cover new cloud-based services such as voice, messaging, authentication, security and notifications that are integral to these new mobile experiences, and new ways of managing content and collaborating across mobile and desktop channels.

Mobile Payments and Digital Commerce

With commerce increasingly trending toward mobile, long-established dynamics surrounding payment acceptance are being disrupted. Magnetic stripe transactions are nearing the end of their shelf life, and the ensuing point-of-sale (PoS) 'reterminalization' spearheaded by the card networks over the next several years will present enterprises with a variety of challenges. On the upside, it will give businesses an unprecedented opportunity to begin to lay the foundation for a mobile payment infrastructure. Making forward-thinking investments today will pay dividends ahead of inevitable payment advancements such as tokenization, NFC and mobile card acceptance in coming years. The mobile payment ecosystem, however, remains in a state of flux with scores of vendors ranging from opportunistic upstarts to entrenched incumbents. We will be looking at the ongoing implications of the EMV liability shift, the maturation of the mobile and wider digital wallet platform space, the impact of mobility to the PoS, and the adoption of mobile commerce technologies by end users.

Note

In addition to the market dynamics listed above, the Enterprise Mobility Channel will continue to collaborate with fellow 451 Research analysts across other channels as we assess the wider implications of the increased industry focus on Enterprise Mobility. Numerous vendors overlap areas of our research, and some have multiple products in different technology domains.

Upcoming Research on Enterprise Mobility

Voice of the Connected User Landscape (VoCUL)

451 Research leverages its Leading Indicator panel of 25,000 business and technology professionals, who are vetted through an application process that admits those with the lifestyle and professional attributes that provide a forward-looking view of technologies, companies and the macro economy well in advance of other sources. These insights are analyzed against companion results from quarterly, population representative surveys of US consumers based on Census Bureau statistics, which confirm how the leading indicator trends are unfolding in the mass market. Together, they provide a multidimensional and comprehensive package of survey insights that is unique in the marketplace.

	Leading Indicator	Representative	Advisory
Corporate IT Spending	Quarterly		
Corporate Mobility & Digital Transformation		Q2, Q4	
Macroeconomic Outlook: US Consumer Spending	Quarterly	Quarterly	
Macroeconomic Outlook: Corporate Software Purchasing Trends	Quarterly		
Macroeconomic Outlook: Business Trends			
Digital Transformation			Q2, Q4

Supply-Side Research

Understanding the pace of growth and identifying the segments and industries driving value in the market is the focus of 451 Research's market tracking and forecasting methodologies. Through quarterly updates, 451 Research delivers its tracking and forecasting of the supply of key business application market indicators by region and country.

		Updates
Enterprise Market Monitor	Enterprise Mobility Management	Quarterly
Mobility Market Monitor & Forecast	M2M Cellular Connections Forecast	Quarterly
	Mobile Enterprise Forecast	Quarterly

Technology & Business Insight Reports

M&A Outlook 2017: Mobility and the Internet of Things

Analysts: Brian Partridge, Christian Renaud, Chris Marsh, Declan Lonergan, Brenon Daly

Publication Date: Q1 2017

Even after a recent record tech M&A run, dealmakers still had ambitious shopping plans in 2016. Across the globe, tech acquirers announced \$500bn worth of transactions in the just-completed year, ranking 2016 as the second-highest annual total since the internet bubble burst. More than any other year, 2016 saw an expansion of buyers beyond the 'usual suspects,' as old-line companies got caught up in transforming their businesses through M&A.

The Future of Business Communications Technologies

Analyst: Raúl Castañón-Martínez

Publication Date: Q2 2017

This report will focus on the evolution of and innovation in the Business Communications market. We will take as our premise the growing prominence of integrations across previously discrete messaging, Unified Communications, video, voice and bot services; and the infiltration of workflow-centric tooling and user experiences as drivers of this integration.

Market Map for Business Productivity Software

Analyst: Melissa Incera

Publication Date: Q3 2017

This report will provide a market map visualization of the array of business related productivity software outlining. It will examine the different segments of technologies, provide nomenclature and descriptors of each, and give forward looking projections on how the landscape will evolve over the near and medium term future.

Is 'Enterprise Mobility' a Thing Anymore?

Analyst: Chris Marsh

Publication Date: Q3 2017

This report will take a broad brush view across the enterprise mobility software landscape and seek to explore how much utility 'mobile-only', 'mobile-first' and mobile pure plays have in a world of digital transformation and connected solutions. Is mobile still the pointy tip of the spear when it comes to disruptive end user technologies?

Regional Approaches to Privacy Regulations: The Implications for Businesses Information Governance Programs

Analyst: Sean Doherty

Publication Date: Q4 2017

This report will evaluate and contrast different regional approaches to privacy regulations, it will examine the implications for businesses' Information Governance programs and their enabling technologies.

Preview: Trends in Enterprise Mobility 2018

Analyst: Chris Marsh

Publication Date: Q4 2017

This report provides a view of key trends that will affect the market in 2018. It details the top trends, likely impact and recommendations for each.