



The Rapid Evolution of Enterprise Mobile

Expanding complexity
marks each of three
milestone eras

Enterprises frequently ask a pivotal question: How did mobile get so complex so fast? While there are several factors contributing to mobile's "degree of difficulty," a quick historical review holds some revealing insights.

The Rapid Evolution of Enterprise Mobile traces mobile's progress through three distinct time periods:

1

The Era of Specialized Mobility – the debut of commercial mobile via specialized deployments of rugged devices.

2

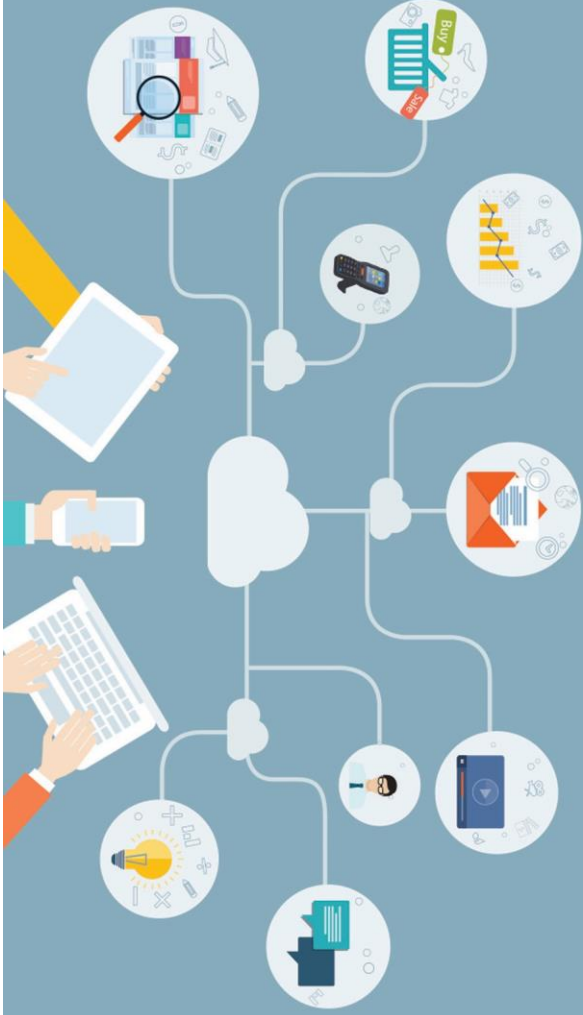
The Era of Enterprise-wide Growth – mobile begins to take shape as an enterprise-wide connectivity platform largely due to the proliferation of consumer devices that make their way into business settings.

3

The Era of Strategic Mobile – the technology emerges as tool for business transformation.

Looking Ahead: Predictions for Mobile's Future – how mobile innovation will continue to benefit the enterprise over time.

While each of these three eras has its own challenges and opportunities, one characteristic permeates each time period – an increasing and expanding complexity. As complexity continues to grow, enterprises must resolve the new issues that crop up in the planning, deployment and management of enterprise mobility.



Working exclusively in mobile for 34 years has given Stratix a "front row seat" to mobile's evolution – one of technology's most rapidly advancing innovations. Today, Stratix' unique perspective combines an understanding of the past, combined with the accumulated expertise needed to anticipate the future.

Era 1 Specialized Mobile (1980s to 1995)

Three key infrastructure-related milestones occurred between the mid-1970s and early 1990s to set the stage for specialized mobile:

1973 First call made with a mobile phone

1974 First SMS is sent

1991 GSM's initial rollout in selected geographies

With these key technology components in place, specialized mobile's first deployments could begin. In this era, mobility was used in highly specialized environments by a workforce that scanned bar codes to collect data about goods' movements through the supply chain.

"Rugged" devices,

which were specifically designed for use in harsh industrial settings, debuted. IT found itself in charge of mobile and took the lead in mobile decisions, managing deployments and offering support through established Help Desk operations. In this era, enterprise mobile was a "one size fits all" technology operating in a largely static environment. Changes to operating systems and the mobile infrastructure's underlying building blocks were few, minimizing disruption to corporate processes and procedures.

In addition to these specialized usages, the introduction of wireless standards, such as GSM and SMS, represented the first foray into creating a foundation for enterprise mobility that would enable rapid growth in subsequent eras.

Era 2 Enterprise-wide Growth (1996 – 2015)

In the second era, mobility leapfrogged, creating one of the largest and most compressed transformations ever seen in technology. Rugged devices took a back seat

to a whole new generation of "smart" phones and tablets. Unlike the majority of technologies that made their way into the enterprise via IT's sponsorship, enterprise workers were the ones who brought consumer devices through corporations' front doors. Mobility in this timeframe underwent one of the largest transformations of the high-tech industry as mobile devices moved into the hands of business professionals for the first time.

Consider these milestone introductions of the Enterprise-wide Growth Era:

- The Nokia 9000, perhaps the first smartphone (1996)
- The Palm Pilot, which put handheld devices into the hands of business professionals (1996)
- The debut of WiFi (1997)
- The standardization of high-speed cellular (HSDPA) (2005)
- The first iPhone (2007)
- The first iPad (2010)
- 4G Cellular (2011/2012)

These major technology achievements heralded an explosion in the demand for connected mobility. Corporate employees pushed for their devices to be able to access corporate backbone networks – unofficially at first and later as part of the BYOD movement. Even "grey collar" employees, who blur the distinction between Operations and Corporate staff, turned to mobile for "always on" access



to data in real-time. As a result, IT departments were quickly overrun with deployment and support demands for an increasingly complex array of mobile capabilities.

As “smart” phones and tablets joined the rugged devices already in place in the enterprise, the “hybrid” device environment was born, and it quickly became the norm. The demand for support exploded as users clamored for help with almost endless combinations of consumer devices, operating systems, applications and management platforms. The relatively straight forward support needs of desktop users paled in comparison to mobile’s proliferation of devices and device types, and the velocity of frequent updates.

To help cope with this burgeoning complexity, new mobile-specific offerings debuted. Mobile Device Management (MDM), Mobile Application Management, Telecom Expense Management (TEM) and Managed Mobility Services (MMS) augmented internal IT staff, bringing specialized mobile expertise to the enterprise. In addition to helping simplify the management of mobile in the enterprise, these offerings also provided a new platform from which to view, manage and control mobile’s performance – down to the individual device.

Era 3 Mobility as a Strategic Support for Business Transformation (2016 – present)

Unlike the previous era, when mobile success was defined in the tactical terms of completed deployments and satisfied users, mobile began morphing into a strategic asset capable of enabling business transformation in the third era.

Beginning in 2016, enterprise mobile began to replace the siloed approach that dominated previously with scalable, enterprise-wide deployments becoming the norm. Mobile began to be valued as a transformative catalyst for business. Enterprises combined mobile assets with cloud-based applications and business intelligence tools to pull from mobility previously hidden business insights.

With mobility becoming a strategic weapon in business transformation, 10 specific characteristics are converging to exponentially expand mobile’s complexity. These characteristics include:

1. Faster refreshes: In consumer mobile, users expect to see significant advances every 1 to 2 years, and they upgrade their personal devices accordingly. Enterprise users now expect the

same – even as Finance Departments struggle against declining device values. As a result, pressure is building to find new, innovative ways to finance mobile devices with guaranteed technology refreshes every 12 to 18 months.

2. Number and type of connected devices per user jumps by as much as 580%: Knowledge workers and front-line personnel, familiar with the convenience of phones, tablets and rugged devices, are taking a “more is more” approach to mobile. Today, the number of devices per employee is growing and the types of devices are expanding as well. Thanks to smart phones, convertible laptops and tablets, the average number of connected devices an enterprise needs to support has risen to 4.6 devices per user, up from 4.1 in 2015. With millennials, the number is even higher with 5.8 connected devices per user at the beginning of 2017.¹ In the past era, IT had to support only two device types – the desktop or the rugged mobile depending on job type. In this era, the number of devices and device types has increased substantially and can be expected to continue to rise. This proliferation of devices and device types just caused mobile complexity to take another big leap.

3. Velocity of mobile’s OS and app changes far outpaces desktop updates: Users are adding devices at a growth rate of as much as 580%, complicating speed of change. Not only do internal Help Desks have to support devices from previous eras, monthly Operating System and Application updates for mobile continue to stream in. The rapid frequency of these updates, which occur on a third party’s schedule, come with little advance notice. In the desktop environment, Operating System (OS) updates can be expected every two to three years, while mobile’s operating systems usually receive major updates every six to 12 months. In addition, minor OS refreshes take place in between these major updates.

4. Constant flow of OS upgrades distracts IT:

Compounding the fast-track pace of updates is the lack of tools to control users’ upgrading efforts. For example, each Android release is managed not through a central authority, but by each mobile operator.

This lack of synchronization often forces the enterprise and its users to manage a constant stream of updates by operator and device type over many months. In this era, the complexity of managing app and OS changes, while overseeing device upgrades and the proliferation of custom applications, escalated severely. As a result, the burgeoning demands of mobile and its users’ sky-high expectations have distracted IT staffs from their business-critical responsibilities.

5. Demand for 7x24x365 mobile connectivity:

Enterprises are being asked to support all of this mobile growth with traditional support options designed for desktop-based devices and applications. Simply put, mobile devices aren’t used like traditional desktops and mobile support doesn’t resemble



Help Desk-based troubleshooting for desktops. Additional pressure on the enterprise comes from the need to eliminate, or at least minimize, users’ downtime due to non-functioning mobile devices and applications. The majority of today’s mobile end users say customers (66%) and colleagues (70%) expect them to be available outside of traditional work hours, and mobile is how they maintain contact.² Mobility is becoming a 7x24x365 asset for most enterprises today, and the underlying support infrastructure has to be there to support always on availability.

6. IT staffing lacks deep mobile knowledge:

The impact on IT has been pronounced, especially in light of the fact that IT staffing has not been funded to hire enough expert staff to keep pace with increasingly sophisticated users' mobility demands. Only 16% of CIOs polled said they were adding positions in 2016. These same IT staffs are under pressure to support the latest-and-greatest iterations of mobile, while steadily advancing enterprise-wide strategic initiatives such as cloud computing, security and IoT.

7. Cost management concerns: A recent survey by IDG and CIO.com highlighted the concerns executives have over controlling mobile costs. In all, 44% of executives surveyed stated that cost management was the top challenge in meeting enterprise needs. Supporting multiple mobile device types was the top concern related to costs, with worries about time commitments and resource costs following closely. With the enterprises' acceptance of unlimited data plans, overages on data usage have largely been eliminated. However, the ongoing staff costs associated with having enough mobile resources to support a myriad of device types and user profiles continues to be a very real issue for CIOs.

8. Backlog of user applications growing, while number of deployed apps remains flat:

The resulting impact on enterprises' ability to "get things done" in mobility may be best reflected in mobile applications. While the demand for mobile applications to support business needs is rising, 91% of survey respondents pointed to an average growth of almost 26% in mobile app development spending. However, deployment of these apps is languishing.³ Year-over-year growth in deployed enterprise mobile apps has

remained flat from 2016 to 2017 with an average of eight mobile apps being developed and deployed, while the backlog of planned, but

not developed, applications have increased by 214%.⁴

9. Lines of Business taking over mobility: Due to these unmet needs, more Lines of Business (LOB) are taking over responsibility for mobility. In all, 74% of total mobility spending now happens outside of IT departments, up from 69% the prior year.⁵ Gartner expects that by 2020, 70% of all enterprise mobile apps will be developed or adopted without IT involvement.⁶

10. A lack of visibility into mobility management and performance: Most enterprises are struggling to maintain visibility across their mobile device deployments to understand which devices are in use, which are performing well, which need replacement, which apps are being used and how a myriad of other data points can be analyzed to determine enterprise mobility's overall performance. Complicating this need for aggregated performance reporting is a mix of different device types. The complexity of this multiple variables driving mobile performance either makes vendor-specific management platforms too myopic for the enterprise, or requires a myriad of management systems and tools to understand and manage mobility at the enterprise level.

Clearly, a seismic shift in enterprises' expectations for mobility and the internal resources needed to plan, deploy and support devices, users and applications occurred in this third era.

Looking Ahead: Predicting mobile's future

As we look at mobile's rapid evolution, two conclusions about the value of mobile can be made. First, mobile can inform and refine today's business strategies in real-time to help enterprises gain sustainable strategic advantages. However, enterprises continue to be challenged as to how to best realize those

advantages and how to gain maximum ROI from their mobile investments. Today's lack of visibility into enterprise mobile's transformative capabilities and results can be expected to create innovation in devices, operating system and management platforms. As a result, rapid innovation will layer on more complexity to an already difficult-to-manage mobile landscape.

Second, now that enterprises have seen mobile's ability to offer strategic business advantages, today's pace of mobile change and increasing complexity can be expected to accelerate. Market leaders now acknowledge the value of mobile initiatives to transform enterprises. As mobile begins to touch every operational facet of the enterprise, the demand for sophisticated mobile expertise quickly outpaces the ability of internal IT teams, already stretching to maintain business-critical systems, to meet scale and support requirements. Working against a backdrop of increasing complexity, enterprises frequently seek out an expert MMS provider with deep technical knowledge of devices, planning and deployment strategies, management platforms and 24x7x365 support. Collaborating with an

MMS provider delegates responsibility to a turnkey mobile specialist, freeing internal IT teams to focus on business-critical technical initiatives.

In the next few weeks, Stratix will publish a series of best practices-based information on how a MMS provider can solve one of mobile's toughest challenges – the need to support mobile users 24x7x365, while lowering mobile's total cost of ownership. In addition, Stratix will share proven ways to provision and deploy mobility, while meeting users' high expectations for always on connectivity. Finally, Stratix will conclude with an explanation of how a well-designed Mobile Center of Excellence can help market-leading enterprises transcend siloed line-of-business mobile projects with an enterprise-wide mobile strategy and execution plan.

For additional facts on **The Rapid Evolution of Enterprise Mobile**, check out the infographic [Growing Complexity of Enterprise Mobility](#).

Learn more about Stratix and Managed Mobile Services: [Contact Us](#)

Sources: ¹IT Staff Makeup Will Remain Consistent; Managed Services and Staff Augmentation Set to Increase. IT Hiring Forecast and Local Trends Report. Robert Half. 2017. ²Survey Reveals Skyrocketing Usage and Growing IT Maturity in Enterprise Mobility. CCS Insights, October 3, 2016 ³Red Hat Mobile Maturity Survey, 2016. ⁴Survey Analysis: The Mobile App Development Trends that will impact your Enterprise in 2017. Gartner, April 26, 2017. ⁵IT Buyer Survey Reveals Changes in Mobility and Digital Workplace. CCS Insight. December 14, 2016. ⁶Mobile App Development is Transforming Testing Processes Within Enterprises. Gartner Group. November 1, 2016.