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MOBILITY AND THE ENTERPRISE: THE TRANSFORMATION IS UNDERWAY

Mobility is the biggest shift that enterprise IT has faced for many years. It is of generational significance, and so it is perhaps not surprising that so many organizations are struggling with how to make it work efficiently and effectively for them. A recent study by 451 Research* found that while employees own 79% of all the smartphones used for work, a staggering 58% of those employees still believe that they would be more productive if they had access to corporate services using their own personal technologies. Despite this, 39% of all companies and 48% of larger companies still admit to finding it very difficult to distribute mobile applications to their workers' devices.

In a further study, Gartner** found that employees in today's digital workplace actually use an average of three different devices in their daily routines, which Gartner predicts will increase to five or six devices as technologies such as wearable devices and the Internet of Things (IoT) become mainstream. Many of these employees will have the autonomy to choose the devices, apps and even the processes that will be required to complete a specific task. This is placing increasing pressure on IT to develop a larger variety of mobile apps in far shorter time frames. Gartner predicts that this increase will mean that demand for enterprise mobile apps will outstrip available development capacity five to one.
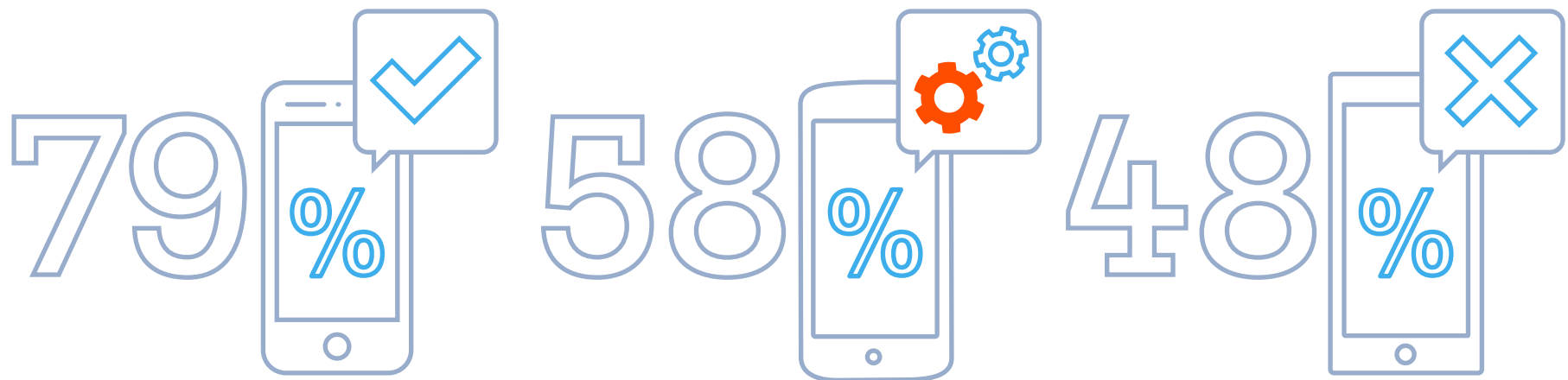
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No organization wants, nor can afford, to be left behind. But the reality is, beyond some initial use cases, mobility adoption is nascent—especially in the enterprise. Outside of email and messaging, most enterprise apps are generally limited to expense approval or apps that drive mobile professionals, particularly mobile sales forces. These apps have shown great promise and resulted in efficiency improvements, but they represent just the tip of the iceberg, with the global market for enterprise mobility expected to grow from $72 billion today to $284 billion by 2019, according to 451 Research.*

Our own studies here at Progress support these findings. When polled in June 2015, 3,000 developers, CEOs and IT professionals told us that that 57% of developers have never built a single mobile app. The survey also found that improved operational efficiency was most often cited as a key reason for building mobile apps. Other reasons include creating revenue opportunities (39%), increasing employee productivity (38%), improving customer service (35%) and engaging customers in a more meaningful way (34%).
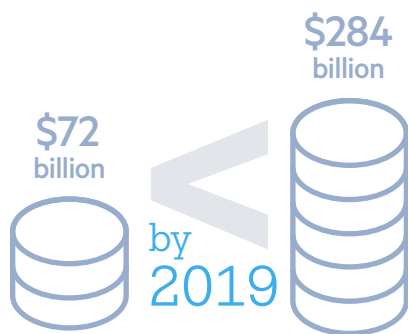
Whatever the reasons, the implications are clear. Demand from both employees and customers for access to corporate systems and services via mobile channels is increasing, yet for many organizations, the ability to meet these demands is lagging. These organizations risk missing out on the operational benefits and new market opportunities mobile offers.
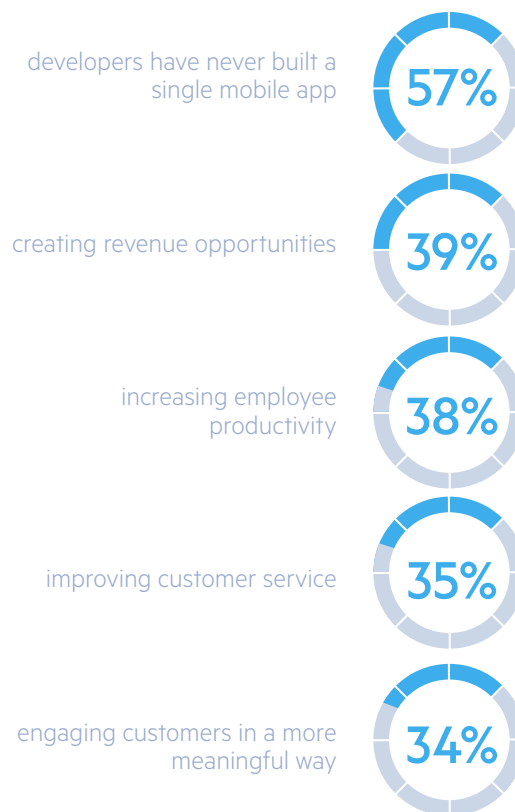
$72 billion

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by 2019

developers have never built a single mobile app **57%**

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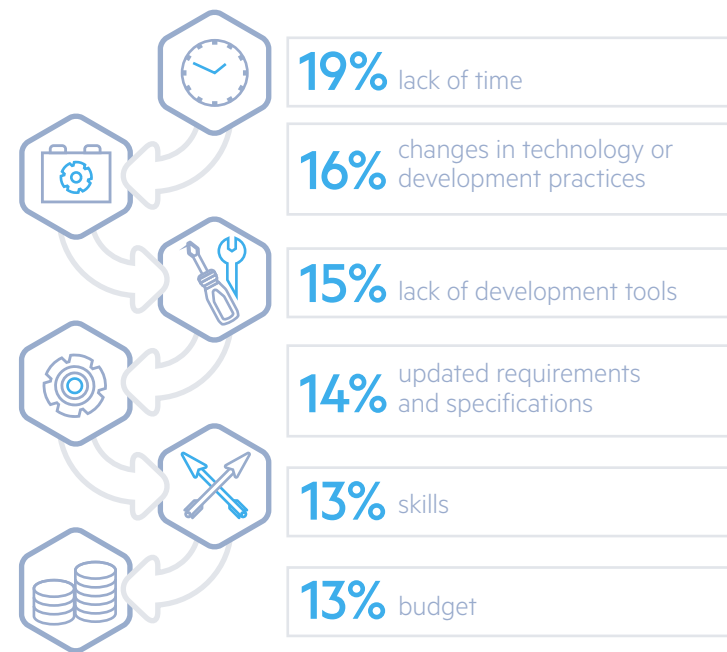engaging customers in a more meaningful way **34%**

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How to Overcome the Challenges

Developing mobile applications has always presented a unique set of challenges. Building mobile applications is unquestionably more difficult than building for traditional desktop or web environments. However, the opportunities afforded by mobility dictate that for most organizations it is a challenge they simply must overcome. The complexities of developing for multiple platforms across an ever increasing range of handsets and devices requires a developer skill set, our own research has shown, not readily available to most organizations.

That research points towards the reasons for the inability to deliver mobile apps, including a lack of time, cited by 19%; and changes in technology or development practices, cited by 16%. In addition, a lack of development tools to deal with multiple platforms and devices, detailed and updated requirements and specifications, skills and budget were cited by 15%, 14%, 13% and 13% respectively.

The reality is, however, that emerging mobile development platforms and tools have significantly reduced many of these technical challenges. Viable options are available that minimize the need for custom code for each device. Technology is available to push updates effectively out to users and run the entire supporting infrastructure in the cloud.

One could argue that the biggest hurdle to the widespread adoption of mobile is determining how best to use the technology and how to develop the critical thinking about mobile in the context of the enterprise. If an organization is merely looking to mobilize what it already did in a pre-mobile world, it may be missing the opportunity to let mobile lead it to new business opportunities, and may ultimately find itself playing catch-up.

19% lack of time

16% changes in technology or development practices

15% lack of development tools

14% updated requirements and specifications

13% skills

13% budget

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Determine Business Requirements

Like any application development process, the requirements of the business should drive the approach—and mobile, in this regard, is no different. The focus needs not to be on how to build the mobile app, but on what it is going to do for the organization. What metric on which dial is the project aiming to shift? Perhaps it's a modest one percent increase in productivity or a more aggressive $1 million increase in sales. Having clarity on project aims will also help the organization prioritize which apps to invest in and build now and which not to. According to a recent report by IDC*, mobile efforts are plagued by unrealized expectations, with 66% of development managers stating that meeting requirements of the line of business is a top challenge for them. Avoiding that "let's do mobile" mentality is critical to ensuring that investments are placed in areas that will drive the business value being sought.

Gartner has identified four best practices that organizations should consider in such circumstances to successfully overcome these app development challenges:

Prioritize app development

Because development teams are so overstretched and have difficulty effectively delivering the growing number of mobile apps in their queues, apps are often built on a first-come, first-served basis, with the line of business making the most noise having its needs met first. This lack of value-driven prioritization can lead to an inefficient use of IT resources and a degradation in the quality of apps delivered.

Adopt a bimodal IT approach

Integration is often the largest part of the effort of delivering an enterprise mobile app, with many app development teams underestimating the time and resources required for integration. Organizations need to replace traditional IT development approaches with a bimodal strategic approach that supports innovation and agility to deliver apps more efficiently and quickly. Bimodal approaches consist of two models; the first of which drives the creation of stable infrastructure and APIs to allow apps to retrieve and deliver data to backend systems without impacting those enterprise applications; while the second uses high-productivity, agile approaches to quickly deliver the front end mobile apps required by the business.
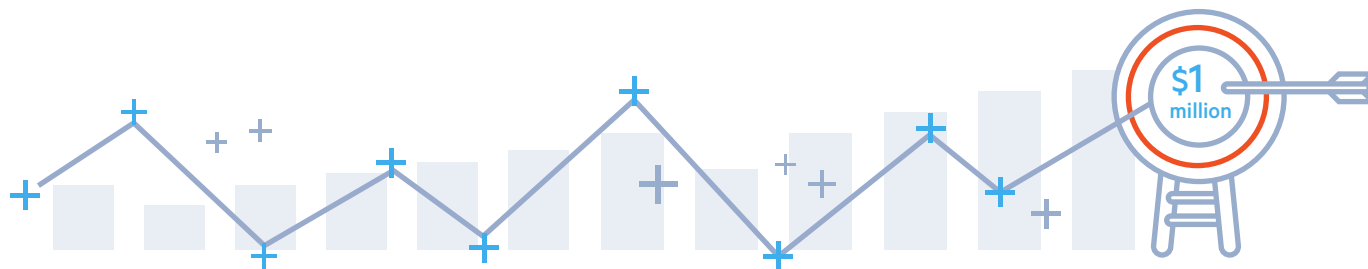
* IT Executive Research Findings on the State of Enterprise Mobility, IDC, December 2014.

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Use rapid mobile app development (RMAD) tools

Use development tools that can produce apps more rapidly or partner with third-party specialists that do. This is crucial for enterprises to help bridge the gap between mobile app demand and supply.

Adopt a mixed-sourcing approach

While many organizations want to have full control over their mobile app development initiatives, maintaining a pure in-house development environment is often difficult or impossible to achieve, given mobile is a relatively new competency to many developers. According to Gartner, organizations will improve their in-house mobile development skills over time, but currently only 26% of organizations are adopting an in-house-only development approach, while 55% are successfully delivering apps using mixed sourcing.

55% are successfully delivering apps using mixed sourcing

Adopting such advice and approach will maximize the chances of a successful outcome, but it is not a guarantee. The technology foundation is, of course, important, but it is also critical to manage the entire development and deployment process effectively. While most development organizations say that they have moved to an agile development process, the effectiveness of these efforts is often suspect. Even if they have transitioned the development process, they may still not have an efficient DevOps process or they may still find themselves stuck in a six-month development phase. Establishing Mobile Labs, or working with partners that adopt such an approach, can also speed time to value and reduce risk by supporting multiple ideas and projects simultaneously.
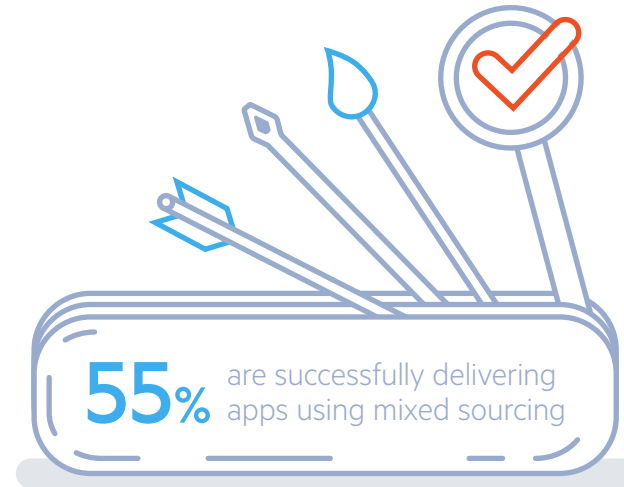
As mobility is about solving a specific use case, defining and delivering an initial minimum viable product (MVP) and then monitoring and tracking its success is a common approach. Once deployed, the organization then needs an effective way to monitor and analyze usage and user feedback to provide quick and continuous updates and development. User analytics, deployed as part of the app rollout, will ensure that the organization can monitor these usage statistics to measure and prove the benefits and initially sought aims. This is critical to ride the momentum of early quick wins that will support the initiation of future projects.

A look at a couple of different scenarios:

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Retail Mobilization

Successful retail efforts now require a customer experience that bridges the in-store and on-line experience. Studies, such as that undertaken by UK-based Juniper Research*, indicate that mobile phone and tablet users will make 195 billion mobile commerce transactions annually by 2019, up from 72 billion now. While the customers' mobile experience is a top priority, it is also important to consider how that will make the retailer more effective too—for both in-store staff as well as head office and operational personnel. Better-informed and empowered store personnel clearly contribute directly to a more engaging and effective customer experience. Consider the experience a buyer encounters in an Apple Store. Clearly informed and empowered sales staff, equipped with mobile devices, can transact orders anywhere, largely eliminating frustrating waits at the checkout while also being able to advise and suggest complementary additional purchases or upgrades.

But why stop in the traditional store environment? Consider what Amazon is doing with its Amazon Dash service, not empowering store staff but the actual consumer who, by pushing a Wi-Fi enabled button connected to a smartphone through Amazon's mobile application, can reorder certain products directly from Amazon for home delivery—presumably by drone in due course—at the push of a button.

Amazon's Dash service is also a great example of how the Internet of Things (IoT) can be used to effectively support new mobile solutions and services. Similar technologies such as iBeacons, when deployed with mobile applications, are becoming increasingly common in traditional store environments, helping to determine where a customer is in or near a store, how that consumer is engaging with the retailer and allowing for the timely delivery of push notifications containing contextual and relevant messaging or offers.

As well as these purchase-oriented examples, mobility moves way beyond the consumer in a retail context. It's entirely possible to gain efficiencies in corporate functions by using mobile solutions to take care of simple, but time-consuming tasks while employees are at home or in transit. Time recording, task management, expense reporting and others can be more effectively managed using mobile solutions while, more strategically, mobile can provide information more quickly and in such a way that it is always available to help employees make better decisions faster. Again, an IoT example of such technology might be the deployment of Radio Frequency Identification (RFID) tags to help retailers manage in-store or distribution center inventory levels to ensure that staff is able, via a mobile application, to proactively manage stock levels to avoid or minimize out-of-stock occurrences.

*Mobile Commerce Markets: Key Sector Strategies, Opportunities & Forecasts 2014-2019, Juniper Research, December 2014.

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Field Service

Recent research from Aberdeen Group* found that 82% of field service organizations identified mobility as a strategic initiative to empower the field with real-time intelligence to make decisions and resolve issues to improve customer service. They found that companies that strategically leverage mobility solutions stand to drive efficiencies, improve customer service and benefit from a more profitable bottom line.

With field-based work becoming increasingly complex and time-sensitive, more and more organizations are beginning to focus on the proliferation of mobile solutions, integrated with backend field service solutions, to help manage field operations and provide the mobile workforce with the real-time knowledge needed to make better, more intelligent decisions while in the field.

As in the retail sector, IoT offers huge potential for the field service industry, enabling devices that are equipped with sensors, hardware and software to be networked together through the Internet, where they can communicate with one another, and send and receive data. For example, IoT allows field service companies to gain greater insight into the status and health of their assets remotely, enabling a smarter approach to proactive and preventive maintenance.

Connected mobile applications support field operations across a range of disciplines, such as offering visibility into the status, location and performance of field assets (technicians, parts, equipment and the like), helping technicians get to the right place at the right time with the right assets and the right information to undertake the job correctly the first time.

*Empowering the Mobile Worker with Real-time Insight and Data Integration, IDC, December 2014.

Getting Started

Increasingly, enterprise IT executives are choosing to adopt cross-platform mobile app development solutions to create engaging user experiences. This means that the time to develop apps has decreased and the time to push updates has been streamlined; all of which has led to quicker app development, better user experiences and the ability for users to leverage their personal devices.

There are many different scenarios across many organizations that would clearly reflect the fact that there is no shortage of good mobile ideas. Phrases like, "we don't know what to mobilize," are uncommon in most organizations, but picking the right ideas to deliver the right priorities, supported by an effective plan are the keys that will lead to quick success. An entire mobility strategy can be at risk by developing applications that do not support organizational imperatives with quick and tangible wins, as management support for future developments will wane quickly. Mobile project selection comes down to business value and a solid technical approach. Select the business scenario that provides significant business value, and then leverage an approach that will deliver results quickly.

To avoid such risks, many organizations, in the first instance, select a simple business process to mobilize quickly, demonstrating value with a tangible ROI. For example, a simple app that manages and automates vacation approval can improve the experience of every single employee, be delivered quickly at minimal cost and demonstrate a clear financial as well as experiential benefit to the organization. With key stakeholders bought into the strategy, more challenging apps and processes can be addressed next.
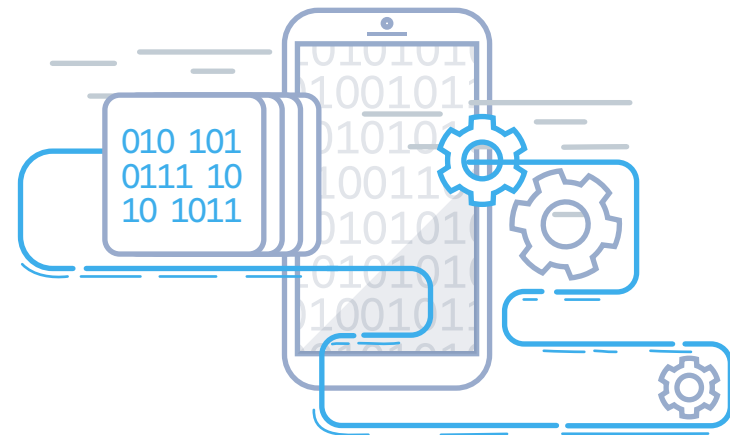
It is also right to consider an appropriate technology or partner strategy to deliver mobile applications. While there are many considerations, it's key to determine how the organization's plans to manage technical dependencies at the client and at the backend, designing an approach that ensures rapid, yet reliable applications.

- **On the client side:** Multi-channel apps, user-centric design, ability to manage initial app and enhancement delivery

- **On the backend:** Integration with backend systems and data sources, user security, administration, cloud, on-premise, or hybrid deployment

Managing business needs with IT resources, workflows and priorities is no easy feat, but it is achievable. Business agility actually starts with the methodologies used by corporate IT and extends throughout the enterprise. The definition of agile development as defined by the Agile Alliance is extremely relevant here: "A group of software development methods in which solutions evolve through collaboration between self-organizing, cross-functional teams. It promotes adaptive planning, evolutionary development, early delivery, continuous improvement and encourages rapid and flexible response to change." Embracing such a philosophy can certainly drive the adoption of mobility across the enterprise.

Top-10 Considerations For A Successful Mobile Strategy

1	Select mobile projects based on business value combined with technical feasibility
2	Run multiple streams of work in mobile to test and learn efficiently
3	Have a means to measure your mobile ROI to demonstrate business benefits
4	Embrace an agile development philosophy; deliver fast and measure results
5	While customer-facing scenarios are key, equally important is how mobility can drive process improvement
6	User experience (UX) is the path to successful app adoption; mobile represents a unique opportunity and simply porting desktop apps to mobile will result in failure
7	While technology is important, process considerations are key
8	IT needs to enable and embrace BYOT/BYOD as a multiplier and ensure proper governance
9	Business participation from the top down is a requirement for success
10	Take the entire application lifecycle into consideration

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Summary

Mobility represents one of the largest opportunities many organizations have before them, but it is perhaps the largest challenge enterprise IT has faced in years. Because of its significance, it is perhaps not particularly surprising that so many organizations are struggling with how to make it work efficiently and effectively for them. What is clear, however, is that no organization wants, nor can afford, to be left behind. But the reality is, beyond some of these initial use cases, mobility adoption is nascent—especially in the enterprise.

Developing mobile applications has always presented a unique set of challenges. It is unquestionably more difficult than building for traditional desktop or web environments, however, the opportunities offered by mobility dictate that for most organizations it is a challenge they simply must overcome. A way forward must be found.

The key to a successful strategy lies in the prioritization of the development process. Because development teams are so overstretched, a complete absence of value-driven prioritization can lead to an inefficient use of IT resources and a degradation in the quality of apps delivered.

Organizations also need to replace traditional IT development approaches with a two-speed strategic approach that supports innovation and agility to deliver apps more efficiently and quickly; the first of which drives the creation of a stable operating environment, while the second uses high-productivity, agile approaches to quickly deliver the front-end mobile apps required by the business. It is also vital to pick the right tools or right third-party partners that can produce apps more rapidly to help bridge the gap between mobile app demand and supply.

While many organizations also want to have full control over their mobile app development initiatives, maintaining a pure in-house development environment is often difficult or impossible to achieve given mobile is a relatively new competency to many developers. Most organizations are adopting a mixed sourcing approach to mobile development.

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About This Paper

This document was produced with the help and insight of James Leach, Sales Director at Chelsea Apps Factory, and Todd Anglin, Vice President of Developer Relations at Progress.

London headquartered; Chelsea Apps Factory has been mobilizing enterprises since before the launch of the iPad. The business enables enterprises to exploit and maximize the opportunity from the seismic change that smart devices have brought about. The organization excels in product innovation and handling the complex and varied challenges of enterprise mobilization. James leads the commercial team at Chelsea Apps Factory and through his role has worked with many leading UK and global enterprises to deliver intelligent solutions to complex and changing challenges.

About Progress

Progress (NASDAQ: PRGS) is a global leader in application development, empowering the digital transformation organizations need to create and sustain engaging user experiences in today's evolving marketplace. With offerings spanning web, mobile and data for on-premises and cloud environments, Progress powers startups and industry titans worldwide, promoting success one customer at a time. Learn about Progress at www.progress.com or 1-781-280-4000.

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