A Forrester Consulting
Thought Leadership Paper
Commissioned By New Relic

November 2013

Mobile Success: Defined By Great Experiences, Driven By Great Performance

Continuous Application Monitoring Delivers Business Insight And Value

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Executive Summary

Mobile and web apps comprise virtually 100% of the primary brand touchpoint for customers — they are well beyond their early days of being a "nice-to-have" feature of your corporate digital strategy. The customer experience mobile and web apps provide determines your chances of success, but mobile adds some new wrinkles. We measure mobile app delivery cycles in days or weeks — that stands in stark contrast to traditional waterfall delivery cycles that could span several months to more than a year. Mobile and web customers are a fickle bunch — they simply don't tolerate applications that provide clumsy, slow customer experiences.

Speed kills firms that do not provide it as a given application performance trait — speed and application availability are table-stakes for today's applications.

In May 2013, New Relic commissioned Forrester Consulting to evaluate how firms avoid poor mobile and web customer experiences. The survey of 152 business/IT professionals confirmed a base assumption: When it comes to application performance and availability, speed kills firms that do not provide it as a given application performance trait — speed and application availability are table-stakes for today's applications. The survey went on to examine the application monitoring techniques and organizational structures of successful firms for practices that reduce risk and bolster the success rates of firms that attempt to build high-performing mobile applications.

KEY FINDINGS

Forrester's study yielded these key findings:

- **Firms that fail to offer minimum, table-stakes features risk commercial failure.** Mobile and web apps that perform poorly are a clear and present danger — they risk damage to your firm's brand, loss of mobile transactions and associated revenues, and for customers that don't abandon the interactions entirely — increased volume of customer-support calls, support effort, and cost.
- **Successful firms monitor applications more often, and in more ways.** Every interaction with a customer is an opportunity to delight, and a threat to repeat business — customers will use their mobile experience to continually form opinions about your company and decide whether to interact/continue to interact with the brand. If you aren't monitoring everything, you should be — how will you prevent their first or fiftieth experience from being the one that ends the relationship?
- **Prior results (web) can be a predictor of future (mobile) performance.** Mobile is very different, in many substantive ways — but that doesn't mean you throw out the web playbook. The survey results show that successful firms that employed good habits around development, monitoring, and management of their web apps are significantly more successful with mobile apps. Many of the lessons learned deploying websites are applicable to mobile.
- **As firms scale beyond their first few applications, they outgrow business-unit governance.** As your mobile presence and capacity grows beyond your first few applications — the loose and innovative approaches that gave you your start become problematic. Maintaining a consistent, high-quality product is more difficult when each business unit is managing its own offering using different tools and resources. Centralized management helps successful firms scale by providing a firm and unified direction and oversight of web and mobile endeavors so all can succeed in a uniform and complementary way.

To Drive Mobile Success, Build Great Customer Experiences

Mobile phones debuted 30 years ago, "smartphones" 20 years ago, but many people point to June 29, 2007 as the creation of the current mobile explosion — the iPhone introduction date. What was different about the iPhone that made it stand out against its predecessors from Palm, RIM, Microsoft, and Nokia? Its customer experience was superlative — a natural, effortless, intuitive, and consistent experience. Clumsy devices that required user manuals and different experiences for each app paled in comparison.

GREAT CUSTOMER EXPERIENCES BLEND INNOVATION WITH PEAK PERFORMANCE

Apple provided a great mobile customer experience that re-launched the mobile industry — so what makes a great mobile experience?

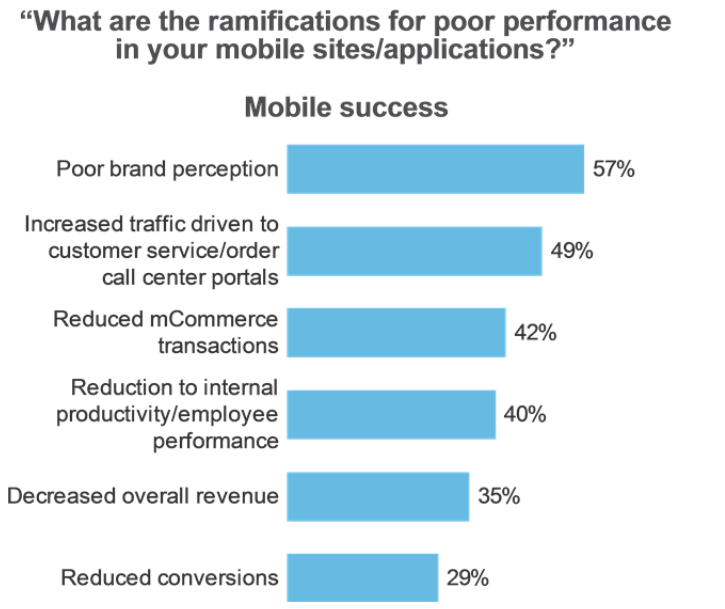
- **Innovative user interfaces capture your attention.** Five-star mobile apps have innovative user interfaces (UIs) that engage us in new and compelling ways, while enabling — not preventing — the intended task. For instance, people have been booking travel for years via phone and web reservations through various service providers that list flight and hotel options — tedium personified for road-warriors who are the industry's most lucrative customers. Enter Hipmunk — an overnight success in the travel industry that applies a simple, intuitive, innovative Gantt chart UI to the tedium.
- **Responsive performance solidifies the engagement.** Data shows that 3 out of 4 people will abandon a mobile website if it takes longer than 5 seconds to load, and 50% of people will exit an app.[i] We have become a world full of people with very short attention spans, and the proliferation of choice afforded by web and mobile channels represents high risk of customer churn. No matter how amazing the user interface, if it performs poorly, your customers will run into the arms of your competitors.

Virtually all mobile development shops focus intensely on the UI — designing cool, innovative applications can be fun, but it is a small, albeit crucially important part of the total assignment. Great mobile development and design also includes performance — and that means optimizing performance through the entire software stack. There might be demons for the inexperienced developer — opportunities for performance failure in the mobile client, through the cloud delivery layer, throughout the enterprise infrastructure, and in third-party services over which you have no control. External forces such as network bandwidth, capacity, and traffic patterns can also impact app performance. In total, these performance demons represent formidable risk — successful developers focus on performance from day one.

POOR CUSTOMER EXPERIENCES WILL COST YOU A LOT MORE THAN CUSTOMERS

Anybody who has been frustrated by slow, poorly designed UIs has had the urge to leave that app and go elsewhere — so we all have firsthand experience that proves the risk of customer loss. The most successful firms in our survey know that as damaging as customer loss can be, it is only the tip of the iceberg of the potential impact a poor-performing mobile application can cause (see Figure 1). Firms without enough mobile experience to know need look no further than their own history with websites — the web and mobile survey results for this question are virtually identical.

FIGURE 1
Poor-Performing Mobile Apps Cause A Lot Of Damage



Base: 147 line-of-business leaders — manager and above, IT professionals (includes IT operations managers, directors, and VPs and business analysts)

Source: A commissioned study conducted by Forrester Consulting on behalf of New Relic, August 2013

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Converting visitors to customers is a key metric for any business — how does performance impact that metric? Nineteen percent of successful firms cite reduced customer conversions as a ramification of poor app performance — nearly 1 in 5. The percentage more than doubles in our less successful firms — 42% cite reduced conversions as a ramification of poor-performing apps — in which group would you rather be counted?

Speed Without Guidance Is A Recipe For Disaster

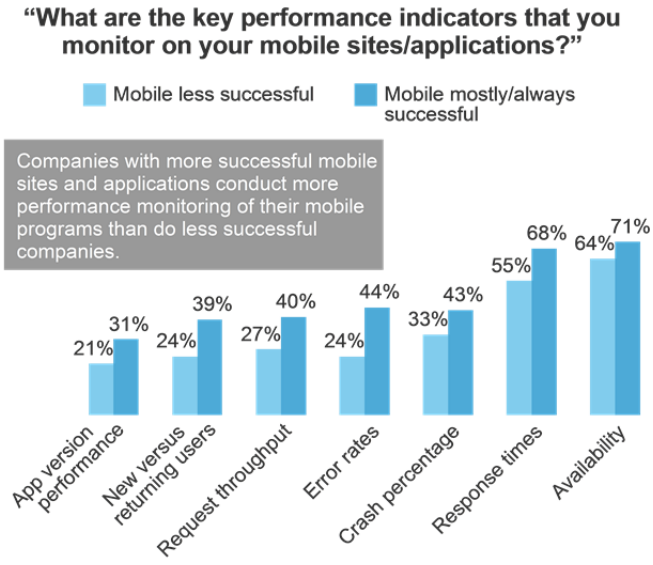
With the importance of the table-stakes metrics of speedy response times and constant availability firmly established, it's safe to say that firms building successful mobile apps monitor a lot more metrics and a lot more often. Mobile apps will push you like never before to increase the cadence of your delivery cycles. You may not strive for *continuous delivery* — but you will certainly head in that direction and it is a virtual certainty your delivery cycle times will get faster and faster as you gain experience. The increased cadence of delivery cycles demands automated monitoring for guidance.

HIGH-FLYING MOBILE APPS REQUIRE INSTRUMENTATION AND MONITORING

To understand why, consider an aeronautical example: A pilot can successfully operate a simple aircraft such as a crop-duster from unmanned airfields with only rudimentary instrumentation — altimeters, fuel and oil-pressure gauges using visual flight rules (VFR) in good weather during daylight hours. Those highly constrained conditions have analogs to the ecosystems that surround systems-of-record (SoRs). They will perform well, but only in very specific environments.

Modern-day travelers expect more — to be able to travel in virtually any weather, 24 hours a day, as fast as possible. These higher expectations call for automation and instrumentation — unmanned airfields give way to aircraft transponders sending data to air traffic control networks strung around the globe with standards and protocols for efficient operation. VFR give way to instrument flight rules (IFR) which enable pilots to fly in virtually any weather, day or night, at greatly increased speeds. Massive instrumentation panels in modern aircraft replace the simple cockpit gauges.

FIGURE 2
KPIs Guide Mobile App Design And Delivery



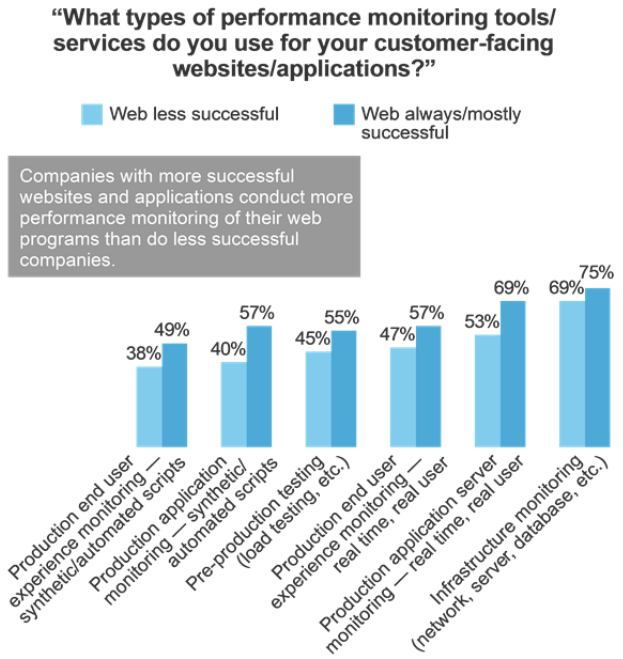
Base: 152 line-of-business leaders — manager and above, IT professionals (includes IT operations managers, directors, and VPs and business analysts)

Source: A commissioned study conducted by Forrester Consulting on behalf of New Relic, August 2013

Your mobile apps will follow suit — just as modern aircrafts need increased cockpit instrumentation, firms instrument their mobile apps for more metrics such as throughput, error-rates, repeat usage, etc. Successful firms deploy and monitor metrics significantly more than unsuccessful firms (see Figure 2). Response times and site availability are strong leaders for web metrics monitored by these successful firms.

A single aircraft is part of an ecosystem that includes ground crew, air traffic control, and a host of functions that contribute to the end-to-end experience. Mobile apps are part of a similar ecosystem — and successful firms employ a combination of tools and services to instrument and monitor all of the parts of the infrastructure and SDLC that contribute to mobile and web customer experiences (see Figure 3). The metrics monitored by firms successful in mobility follow suit with the Web — response times and site (or service) availability.

FIGURE 3
Monitoring Tools And Services Enable Success



Base: 148 line-of-business leaders — manager and above, IT professionals (includes IT operations managers, directors, and VPs and business analysts)

Source: A commissioned study conducted by Forrester Consulting on behalf of New Relic, August 2013

CONTINUOUS MONITORING PROVIDES GUIDANCE THAT MAKES A BIG DIFFERENCE IN SUCCESS RATES

Collecting metrics is a start, but if you never look at them, you've wasted the effort. Building on that theme — feedback loops drive mobile development success and instrumented apps provide data about application performance and customer-usage patterns. How often we monitor the sources of that data for insight determines how quickly we can pivot to head off technical issues and pivot to leverage a new business opportunity. So once again, cadence enters the picture — this time in terms of how often we monitor. The survey data clearly shows that continuous monitoring is a key contributor to success: 54% of the more successful firms in the survey said that they monitor their websites *continuously*, yet only half as many monitor continuously in the less successful group. Alternatively, nearly half of the less successful firms monitor only monthly — once again proving that metrics collection is good, but monitoring them frequently is the dividing line between success and failure.

Scaling Past Experimentation Demands Centralization

Nobody builds a 5-star mobile application as their very first foray into mobile — more often they are the product of repeated attempts at innovative product development. Innovation means freedom to brainstorm a problem set and attack it with a no-holds-barred sort of mindset. The scientific method advances a theory, designs tests to prove/disprove the theory through experimentation. Failed experiments are not actually failure — they are lessons learned that feed into the next iteration of innovation and experimentation.

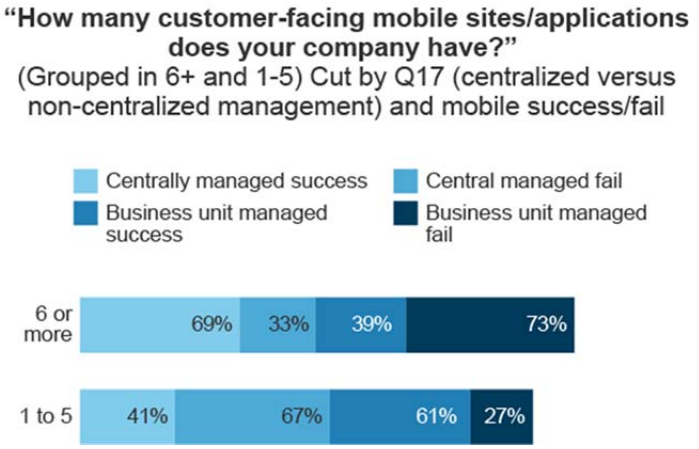
But at some point, as more and more groups begin to develop mobile applications, the free reign of innovation gives way to standardization (on tools, methods, processes) and centralization to avoid mismatched technical environments and the cost and complexity they create. Getting the timing of centralization and standardization takes a deft hand — do it too soon and you will stifle the very innovation you seek to promote.

As firms built their first few mobile applications, 61% of respondents cited that the mobile efforts run by business units were successful most or all of the time — while 67% of centrally managed efforts were far less successful/unsuccessful. However, the survey data shows an obvious tipping point where local control begins to fail. Once firms hit several mobile applications, the success ratios flip — successful business unit run efforts drop to 39%, while successful centrally managed efforts reach the 69% level (see Figure 4).

The success rate of centralized management is even sharper as an aggregate — 75% of successful firms centrally manage their mobile efforts, while just 23% permit local business-unit control.

FIGURE 4

To Scale Beyond Experimentation: Centralize Control



Base: 145 line-of-business leaders — manager and above, IT professionals (includes IT operations managers, directors, and VPs and business analysts)

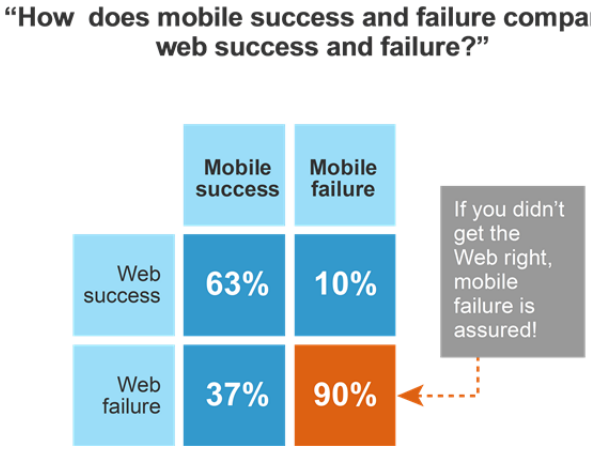
Source: A commissioned study conducted by Forrester Consulting on behalf of New Relic, August 2013

Past Results Are A Predictor Of Future Performance

The admonition on every investment-related piece of guidance — that prior results are no guarantee of future performance does not apply to mobile and web applications. Nearly two-thirds of firms in the survey that mostly/always succeeded with web apps are also successful with mobile applications — only 10% reported failed mobile efforts. Clearly, they formed good habits with web apps that carried over into mobile development. The survey data also holds a dire warning for firms that weren't particularly successful with web apps — their bad habits carrying over into mobile efforts yields a 90% failure rate (see Figure 5).

FIGURE 5

Web Success Rates Predict Mobile Success



Base: 152 line-of-business leaders — manager and above, IT professionals (includes IT operations managers, directors, and VPs and business analysts)

Source: A commissioned study conducted by Forrester Consulting on behalf of New Relic, August 2013

Firms that never got their web development right are virtually guaranteed to fail at mobile.

"YOU GET WHAT YOU PAY FOR . . ." AND OTHER PLATITUDES APPLY LIBERALLY TO MONITORING

Why do high web failure rates in this group correlate so strongly to mobile failure rates? A number of reasons standout — 56% noted that their lack of a single web performance monitoring solution creates challenges. It is highly likely that their mobile efforts used no tooling or simply added to the mix of tools used. The group also reported that the total cost of ownership is very high. That makes sense — multiple tools are likely wholly or partially redundant and may not integrate well with other tools in the ecosystem. They also report difficulty isolating root problem cause — the quality-death-spiral begins. The more disturbing implication though is that the perceived value it delivers doesn't warrant the cost. Given the damage to brand, revenues, customer loss, etc. — it brings to mind the phrase, "If you think education is expensive, try ignorance."

If you think education is expensive, try ignorance.

Key Recommendations

If you want to put a price on ignorance — try this on for size: Just 16% of firms in our survey believed that their websites very successfully represent their brand. Given that web success is a significant predictor of mobile success, it is clear we have a lot of work to do to catch up to the 16 percenters — are you one of them, or are you competing against them? Forrester's in-depth surveys with business/IT executives yielded several important observations:

- **Table-stakes are for laggards — measure more, and more often for greater insight.** Fast response times and constant availability in an application with an uninspired, unengaging UI design still makes for a poor user experience. So yes, make sure your applications perform well — but realize that good performance is one of many characteristics you'll have to monitor and adjust to build and maintain applications with 5-star ratings.
- **Continuous monitoring is a means to an end — continuous improvement and business agility!** There may be no more overused term than "business agility" these days, but here it fits technically, culturally, and as a mindset. Mobile development means Agile development, means small batches of work-in-progress so that when (not if) business conditions change, the pivot spawns minimal waste. If you aren't monitoring technical and business conditions continuously — your competitors will sense the change and pivot before you can blink — nudging you back toward the trailing edge of laggards.
- **Make the investments you need to scale beyond mobile experimentation, or remain a laggard forever.** Past the experimental level, centralization of certain processes and functions engenders success. Disparate monitoring processes that can't see past traditional technical boundaries form an impenetrable boundary that foils end-to-end insight. Without end-to-end insight, you'll be groping in the dark to pinpoint root cause, lamenting the high cost of disjointed solutions, and wondering how your competitors thrive where your firm merely survives.

Appendix A: Methodology

In this study, Forrester conducted an online survey of 152 organizations across all industries in North America to evaluate web and mobile development, management, and performance monitoring. Survey participants included decision-makers in IT operations managers, directors, and VPs, and business analysts. Questions provided to the participants asked about company's use of web and mobile performance monitoring and management. Respondents were offered an incentive through a panel provider as a thank you for time spent on the survey. The study began in May 2013 and was completed in October 2013.[2]

Appendix B: Supplemental Material

RELATED FORRESTER RESEARCH

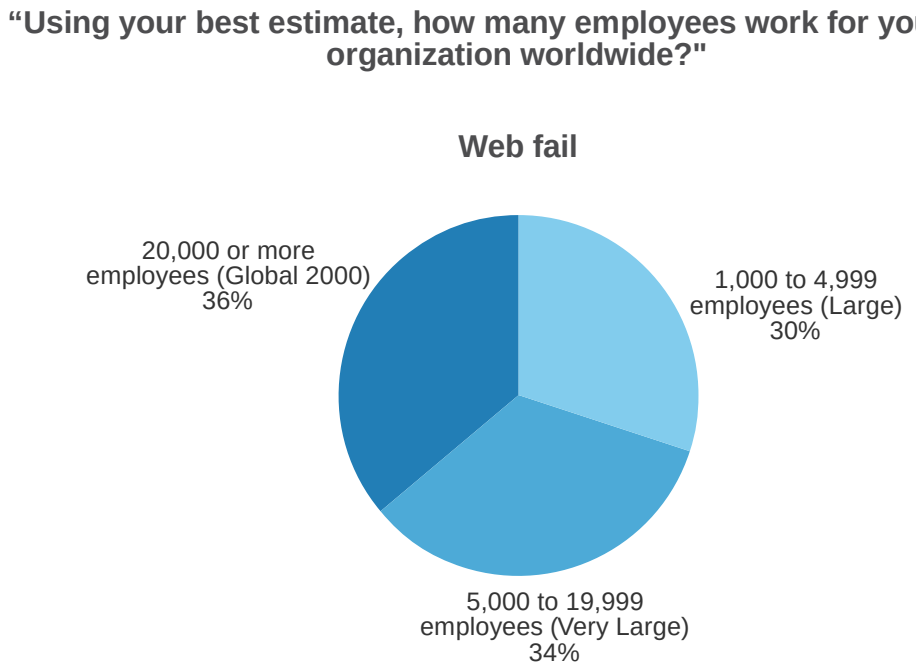
"Measuring Mobile Apps," Forrester Research, Inc., November 18, 2013

ONLINE RESOURCES

More information about mobile usage and expectations is available at ReadWrite (http://readwrite.com/2012/07/24/infographic-what-is-slowing-down-your-mobile-apps).

Appendix C: Demographics/Data

FIGURE 6
Company Size By Employee Population



Base: 147 line-of-business leaders — manager and above, IT professionals (includes IT operations managers, directors, and VPs and business analysts)
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FIGURE 7
Industry

"Which of the following best describes the industry to which your company belongs?"

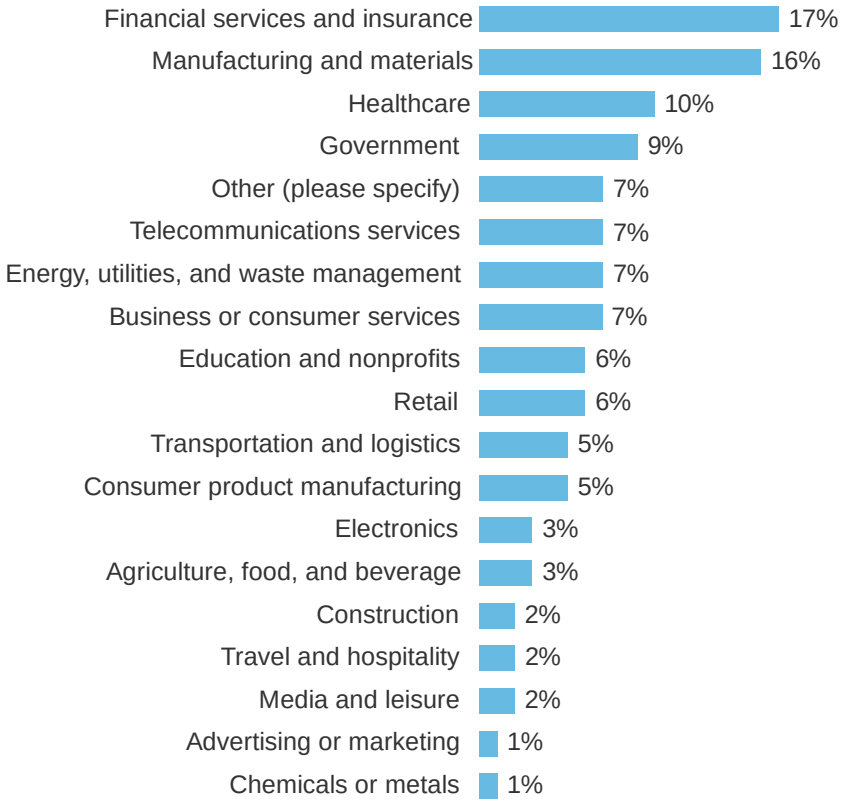

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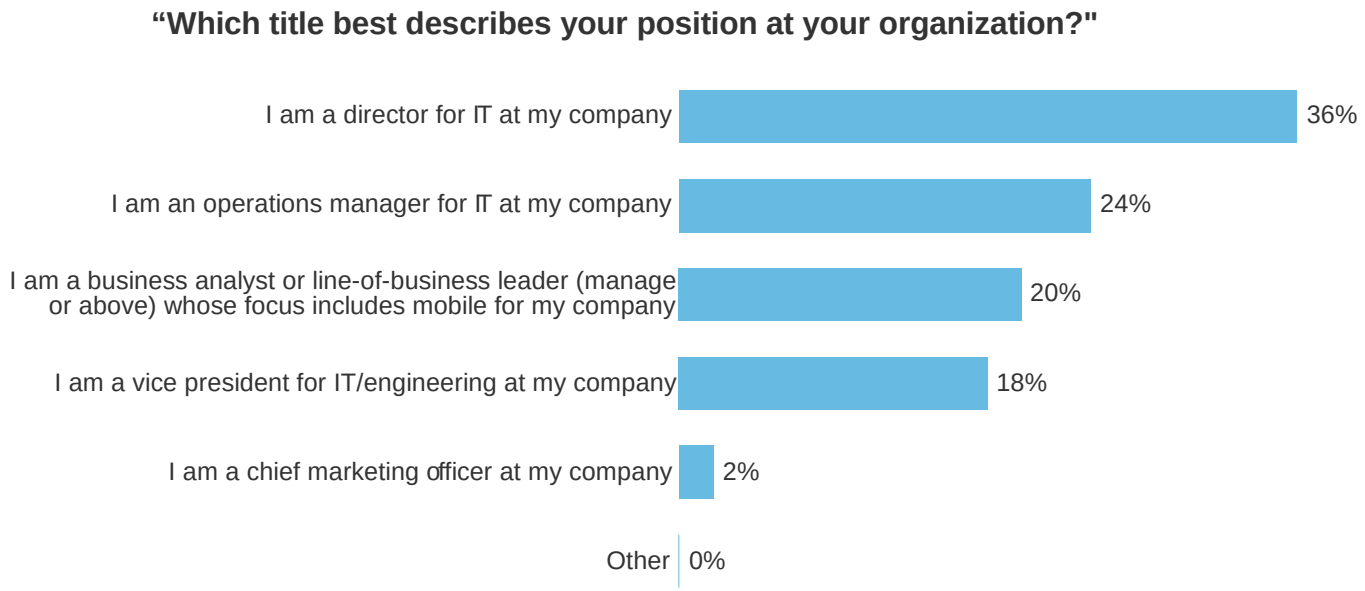
FIGURE 8
Position



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Appendix D: Endnotes

i Source: Dan Rowinski, “[Infographic] What is Slowing Down Your Mobile Apps?,” ReadWrite, July 24, 2012 (http://readwrite.com/2012/07/24/infographic-what-is-slowing-down-your-mobile-apps#awesm=~ojOGBjzrmPPaZo).