

The Rise Of Web Technology

Addressing Development Complexity
And Productivity Demands

Table Of Contents

Executive Summary	1
Mobile App Complexity And Sophistication Increase, While Development Time Stays Constant.....	2
Development Costs Will Be Higher Than Planned For Companies Without The Tools And Processes To Handle Complexity	3
Successful Companies Invest In Web Technology and Release Frequently.....	4
Key Recommendations	6
Appendix A: Methodology	7
Appendix B: Supplemental Material	7

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Executive Summary

Organizations are under immense pressure to deliver highly sophisticated web and mobile applications to their customers. And customers expect to access these applications on a wide range of devices, including desktops, tablets, and smartphones. To remain relevant in the market, companies must meet customers' changing web and mobile application needs in a world where the rate of change is accelerating.

In March 2015, Sencha commissioned Forrester Consulting to conduct an online survey of 120 senior leaders in North America and Western Europe who are responsible for the teams and resources that manage web applications at their organizations. The purpose of the survey was to understand key market trends, challenges, and best practices associated with web and mobile application development practices.

Our study found that web technology is becoming increasingly critical to organizations' web and mobile application strategies as companies seek to manage the overall complexity of app development and maintenance, meet their customers' demands, accelerate time-to-market, and improve quality and overall development productivity.

There is a shift away from native development, as 27% of organizations plan to move away from native development in favor of web technology. The No. 1 factor driving this shift is the desire to improve development efficiency.

Organizations reported that the development phase in the software development life cycle is where cost and timeline overruns are most likely to occur. Development teams are expected to create applications that have a lifespan of more than three years for almost half of internal B2E apps, with frequent releases across a wide variety of platforms.

To keep pace with demands, it is critical for companies to invest in technologies and platforms that help them meet their customers' cross-platform web and mobile application needs — both as they exist now and in the future.

Successful companies will make smart investments and retain the flexibility to adapt to change.

while successful applications have greater technical complexity and sophistication, they are expected to be created over a shorter timeline without a corresponding increase in developer capacity.

› **Deployment and security are the greatest barriers to success.** The proliferation of different devices creates challenges around developing and deploying all of these devices. Similarly, addressing security across multiple devices and platforms presents new challenges to companies. These challenges continue to mount, due to pressure on timelines and the increasing sophistication and technical complexity of the application environment.

› **Web technologies are becoming increasingly critical to organizations' web and mobile application strategies.** Web technology has gone mainstream, with 63% reporting that it is critical to their web and mobile application strategy. Successful companies, defined as those companies with 75% or more of their web and mobile apps successful, are investing in web technologies to differentiate their products and customer experiences from those of competitors.

KEY FINDINGS

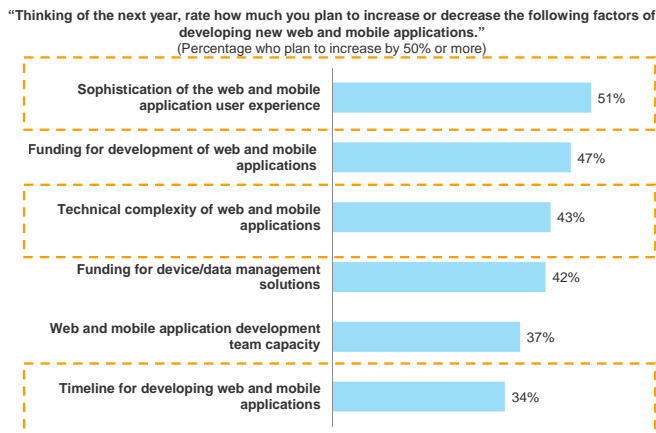
Forrester's study yielded three key findings:

› **The demands placed on development teams are increasing, while capacity is not.** This study found that

Mobile App Complexity And Sophistication Increase, While Development Time Stays Constant

Development teams are in a bind — demands placed on them are on the rise, while capacity and investment remain the same. This has resulted in a gap that successful companies will require new strategies to overcome.

FIGURE 1
Building The Web Is Getting Harder



Base: 124 decision-makers or influencers of mobile and web app development and maintenance

Source: A commissioned study conducted by Forrester Consulting on behalf of Sencha, March 2015

THE COMPLEXITY OF THE DIGITAL ENVIRONMENT IS INCREASING

Not only are customer expectations in constant flux, but the pace of change is increasing, and so is the complexity required to deliver to these evolving customer expectations. Over half (51%) of companies believe that the mobile and web application user experience will become significantly more sophisticated in the next year. Just keeping up with this increase places significant demands on mobile teams, but demands are even more significant for companies that have already fallen behind. Many companies find that customers expect more and more relevant content (powered by data) to be available on any device, whether mobile or desktop, and this increase in sophistication demands greater technical capabilities in order to integrate

data across multiple systems to properly execute across web and mobile platforms.

Accurately understanding this is key. More successful companies see this increased complexity as a key to staying innovative and ahead of their competition. While 43% percent of companies overall in our study expected to see an increase of 50% or greater in technical complexity for web and mobile applications, 52% of successful companies predicted increasing technical complexity, compared with just 22% of unsuccessful companies. This gap highlights the role complexity plays in success and means that companies that strive to build successful mobile apps need to be prepared for it.

DEVELOPMENT TIMELINES AREN'T INCREASING, AND CAPACITY IS NOT CHANGING

Even as the digital environment gains complexity and sophistication, companies are not meeting this with increased investment levels for their development teams. Over half of the companies in the study (53%) do not plan to increase the capacity of the development teams.

In addition to companies dealing with capacity constraints, 37% of respondents said they do not plan to increase timelines when developing new web and mobile applications. Therefore, development teams must find new strategies to "do more with less" in order to build their apps with greater sophistication and complexity in the same amount of time.

Development Costs Will Be Higher Than Planned For Companies Without The Tools And Processes To Handle Complexity

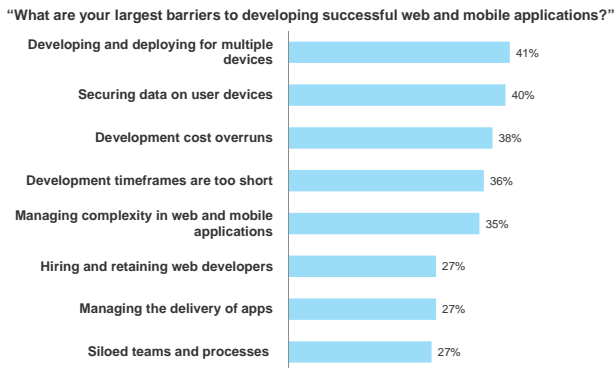
The development phase has, by far, more cost overruns than any other phase in the application development life cycle (see Figure 3). While this presents significant challenges and barriers to developing successful applications, it also presents an opportunity for companies that are able to overcome these difficulties.

OVERCOME DEVELOPMENT AND DEPLOYMENT HURDLES CREATED BY DEVICE AND APPLICATION PROLIFERATION

The proliferation of devices amplifies the complexity in the computing environment. Deploying and developing for multiple devices was the most commonly cited barrier to deploying successful applications, with 41% of companies saying it is something they struggle with.

And this complexity is not limited just to devices. Thirty-five percent of companies also identified maintaining complexity across applications as a barrier to success. As companies struggle to manage the complexity of the device and application ecosystem, the customer experience suffers in addition to timelines and application quality.

FIGURE 2
Multidevice, Security Challenges Are Top Of Mind



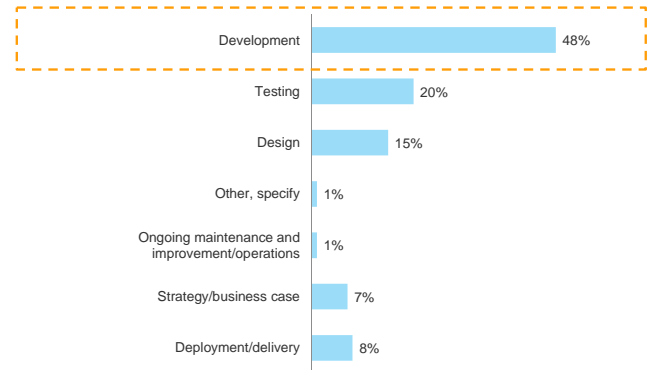
Base: 124 decision-makers or influencers of mobile and web app development and maintenance

Source: A commissioned study conducted by Forrester Consulting on behalf of Sencha, March 2015

By leveraging tools and processes to manage the sophistication and technical complexity of applications and support faster releases, companies can increase their chances of success and turn the barrier posed by complexity into an asset and a source for competitive differentiation.

FIGURE 3
Development Costs Are High

“When considering development time and cost, what phase of the web and mobile application development life cycle most often takes longer than planned and/or costs more than planned?”



Base: 124 decision-makers or influencers of mobile and web app development and maintenance

Source: A commissioned study conducted by Forrester Consulting on behalf of Sencha, March 2015

BEST-IN-CLASS SECURITY PRACTICES CONTROL RISK AND INCREASE APPLICATION SUCCESS

Customers demand that their data is handled securely, but they also expect it to be invisible and not impede on their experiences. As such, security issues loom large in the minds of those responsible for development and delivery of multidevice experiences. Both the successful and unsuccessful companies in this study were concerned about security, with 74% of successful companies and 60% of unsuccessful companies identifying it as the top criterion that defines the success of an app.

Not only is security a core success criterion, but the inability to secure data on user devices presents a challenge that 40% of companies said they struggle with as well. Furthermore, this gap was 12% more likely to be reported by unsuccessful companies than successful ones.

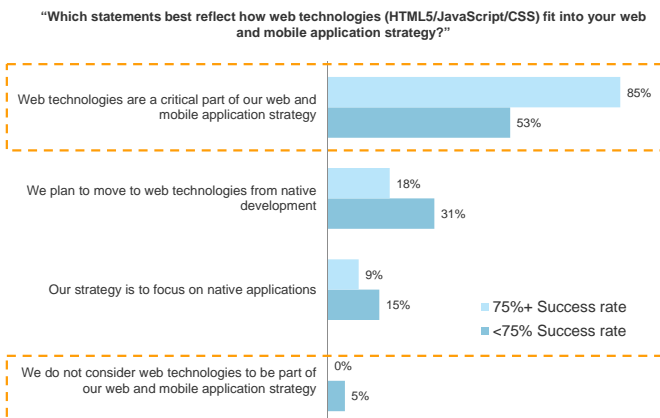
Also, the number of applications that a company has increases the level of concern for application security. Companies with 10 or more applications were 8% more likely to consider security as a major risk to an application's success.

Tailor your security practices to meet customers' expectations without hindering their experiences. Ensure that security is part of the design and development process and not treated as a bolt-on afterthought. Keeping security a core part of the process means that the entire team must be educated on the security needs and tradeoffs and have the resources and incentives required to successfully implement it.

Many organizations fail to plan, and as a result, they end up missing opportunities to optimize the customer experience while creating risk for the business at the same time. Successful organizations create and socialize a security strategy that focuses on the right level of data security and balances it with user identity policies and designs that fit the application form factor. This strategy, if identified early and supported by the right tools, provides significant benefits to the business and customers.

Successful Companies Invest In Web Technology and Release Frequently

FIGURE 4
Web Technologies Are Central To Success

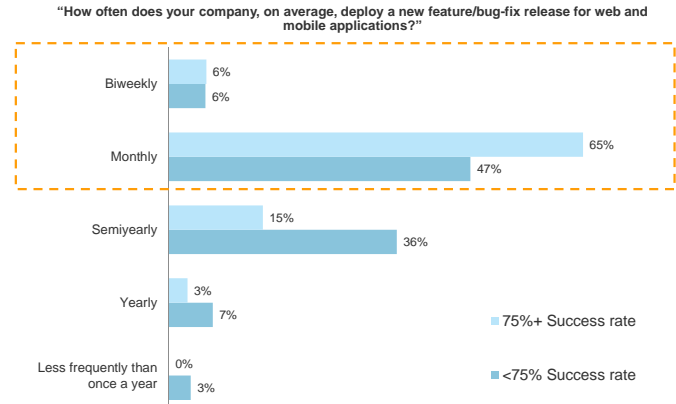


Base: 124 decision-makers or influencers of mobile and web app development and maintenance

Source: A commissioned study conducted by Forrester Consulting on behalf of Sencha, March 2015

A critical factor driving successful companies is the level of investment in web technologies, with 63% of surveyed companies stating that it is a critical aspect of their web and mobile application strategy. When comparing how many successful versus unsuccessful companies believe that web technologies investment is critical, we found a 32% gap (85% of successful versus 53% of unsuccessful companies), demonstrating how important these applications are to solving the business challenges posed by applications' sophistication and technical complexity. Successful companies apply their web technologies investment to overcome capacity and timeline constraints, in order to develop, deploy, and manage applications across multiple devices. Successful companies also deploy more frequently, with the majority deploying monthly or biweekly. This requires investment in not only processes and team skills but also the technology ecosystem required to facilitate and streamline releases at this frequency.

FIGURE 5
Success Demands Frequent Releases

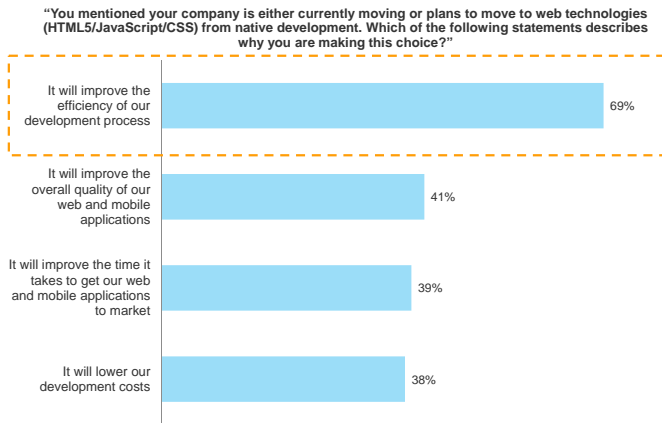


Base: 124 decision-makers or influencers of mobile and web app development and maintenance

Source: A commissioned study conducted by Forrester Consulting on behalf of Sencha, March 2015

FIGURE 6

Companies Look To Web Technologies To Drive Efficiency Improvements

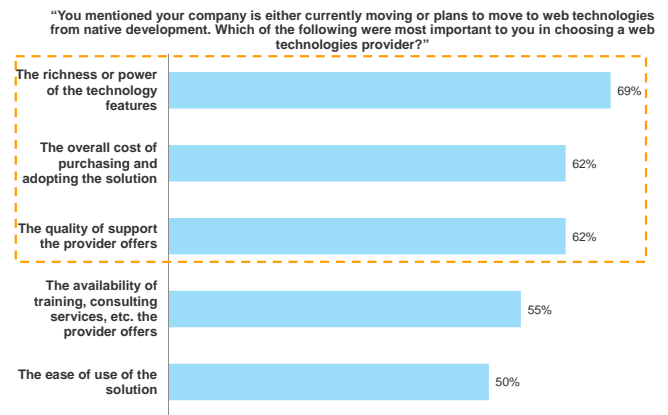


Base: 102 decision-makers or influencers who have adopted/plan to adopt web technologies for mobile development

Source: A commissioned study conducted by Forrester Consulting on behalf of Sencha, March 2015

FIGURE 7

Power, Cost, Support Quality Key Considerations For Choosing A Web Technologies Provider



Base: 102 decision-makers or influencers who have adopted/plan to adopt web technologies for mobile development

Source: A commissioned study conducted by Forrester Consulting on behalf of Sencha, March 2015

Web technologies allow developers to address all device platforms with a common code base. Web technologies also play an increasingly important role for more sophisticated experiences, such as ones that support transactional behavior rather than content consumption. For example, the complexity of transactional applications results in more forms and fields to simulate native app behavior on the Web and across more devices. Developers are able to do more with less, with robust frameworks and control libraries that allow for more sophisticated experiences while supporting multiple apps and platforms.

Companies that invest in web technologies do so primarily to improve the efficiency of the development process but also to improve quality. The top features sought are the functionality of the technology, overall value of the solution, and quality of the support the application provides. To achieve business objectives, companies investing in these features complement the capabilities by looking for training and support to fully realize the value and investment.

Key Recommendations

The requirements put on the development organizations to keep up with customers' expectations for rich functionality and a seamless user experience across the desktop, tablets, and smartphones will continue to accelerate in speed to market and complexity. Investing in capabilities to enable development teams to be flexible, security-minded, and fast is critical for competitive differentiation. In short, successful companies invest in web technologies, and for successful investment Forrester recommends the following:

- › **Lower costs, accelerate timelines, and enhance quality by looking at investments that enable capabilities across platforms.** Look at tools that enable cross-platform development to drive consistency and help development teams do more with less. As applications grow more complicated and deployment across multiple platforms becomes more difficult, significant enterprise and customer value can be discovered through investment in cross-platform tools such as web technologies.
- › **Streamline deployment through automation to support frequent releases and increase application success.** Build automation into current-state development processes, and invest in applications with the capabilities to support it. Frequent releases and increased automation provide efficiency gains and allow applications to be more tightly tailored to user needs. Invest in the resources to ensure that the processes, skills, and tools of your organization can support the move to more frequent releases.
- › **Move behind the hype to identify the best security solutions.** Security is core to any web technology investment, but one size does not fit all. Examine your security concerns against the desired user experience to find the “sweet spot” that optimizes both experience and risk. Organizations that create suboptimal experiences in the name of security risk losing customers, while organizations that don't see the risk are setting themselves up for large costs down the road. Incorporate security into the upfront design, and ensure that subsequent iterations address and update security elements. Leverage web technology platforms that provide core security needs, and customize them as needed.
- › **Ensure the right level of training and support for organizations.** Many organizations seek to find the best-value solution but fail to recognize internal gaps in knowledge and skills. When looking at platforms, consider organizational capabilities and align organizational competencies with vendors that can support them. Organizations without cross-platform capabilities will find value in investments that provide support to help build applications that engage customers and provide business value.

Appendix A: Methodology

In this study, Forrester conducted a global online survey of 124 business leaders involved with mobile and web app development and maintenance. Respondents were from enterprise organizations (1,000 employees and above) in the US, the UK, and Germany, from the retail, media and communications, utilities, oil and gas, telecommunications, financial services, insurance, and healthcare industries. Respondents were all at a project manager level or higher within their organization. Respondents were offered a small incentive as a thank you for time spent on the survey. The survey began and was completed in March 2015. Respondents were grouped into tiers of success for this report based on the success rate of their mobile and web applications.

Appendix B: Supplemental Material

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