



Digital Transformation

Getting in Shape for the Digital World

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Introduction

Something massive is happening to the way businesses serve customers, employees, and partners. Thanks to the spread of mobile devices, we are approaching a tipping point where software will touch virtually every interaction and transaction, and people, organizations, and everyday objects will have a digital identity as unique and relevant as their physical ones.

The focal point of computing power is shifting from the server room to the smartphone or tablet, and this presents businesses with the opportunity—and the imperative—to develop new experiences that are crafted specifically for these mobile devices. We call it “digital transformation”—the evolution businesses go through to add a digital dimension to the experiences of their customers, employees, and partners.

Most companies realize this revolution is underway in one sense or another. Some have embraced digital transformation and adopted it as core to their businesses. These companies are already benefiting from newfound agility, efficiency, customer satisfaction, and revenue streams.

Yet many aren't there yet. Some are unsure of how to get started. Other companies have dabbled with pilot projects and are thinking seriously about digital transformation, but haven't figured out how to make digital strategies flow throughout their business.

Wherever your business is on the path to digital transformation, there are strategies you can follow and real steps you can take to prepare for the future. In this e-book, we explore digital transformation and what a digitally transformed world could look like; we describe what is driving the need for enterprises to take action; we show you examples of companies that are enjoying the fruits of this evolution; and we outline steps you can take—right away, no matter where you are—to transform your business and be ready for this new world.



Digital Transformation: A Critical Business Evolution

It's easy to imagine—and some would argue inevitable—that because of the growing number and variety of connected devices that range from smartphones and tablets to smart cars and smart home thermostats to wearable computing devices, the day is approaching when most work, play, and commerce will have a digital dimension.

Mobile devices, in particular, have transformed the social and commercial relevance of software, to the extent that mobile software will touch nearly all interactions and transactions. While mobile device users still make a large proportion of their purchases in stores, for example, 42% of them relied exclusively on their smartphones or tablets for pre-purchase research.¹

So the stage is set for digital transformation, for those companies willing to take advantage of it. Digital transformation describes how companies are using technology to add a digital dimension to customer or partner experiences, change the way employees do their jobs, or add new digital or data-based lines of business.

Elements of a transformed enterprise include the deployment of mobile apps, which range from letting consumers order groceries from their mobile phones to giving construction employees access to tablet-based blueprint libraries; the use of big data analytics to gain new insights on how to better run a business; and the creation of a developer ecosystem to build valuable mobile solutions.

It's a virtuous cycle. Companies deliver great experiences and make it possible to interact with their business on any device; they turn data generated by these devices into meaningful insights; and they have the ability to quickly and agilely act on those insights—whether they're generated by employees, partners, or customers—for competitive advantage. Mastering this fast feedback loop will be a key differentiator, and will enable companies that engage in a digital transformation to reshape their industry and seize a leading market position.

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1 The Nielsen Company (2013) Mobile Path to Purchase. <http://bit.ly/16IWNpN>



New expectations: the app economy

The way consumers interface with the Web has changed. Because of the viral spread of mobile devices and the apps that reside on them, an increasing number of your customers expect to have desired information or services available at their fingertips, without delay. This kind of instant access is no longer just a convenience. It's becoming the de facto standard, at least in the minds of consumers.

Similarly, the critical mass of computing power is moving from the center to the edge—from air-conditioned server rooms to back pockets. This shift toward using phones and tablets has contributed to the erosion of the Web- and browser-centric model. Apps, which are built to deliver a great experience on these devices, are becoming the center of digital ecosystems.

All of this is pushing us toward a world where software is pervasive and influences everything, everyone, and every experience. This in turn opens the door to a productivity boom that will unsettle traditional hierarchies and business models in an even more pervasive way than the Web itself.

The digital divide

We polled executives at 200 large companies across 40 industries and found that those who have been quick to successfully employ data analytics, apps, and APIs have been pulling away from competitors in terms of performance.²

Executives at these companies report stronger business results over the trailing twelve months, expect more impact from these digital capabilities in the short- and long-term, and express optimism about their competitive trajectory over the next five years.

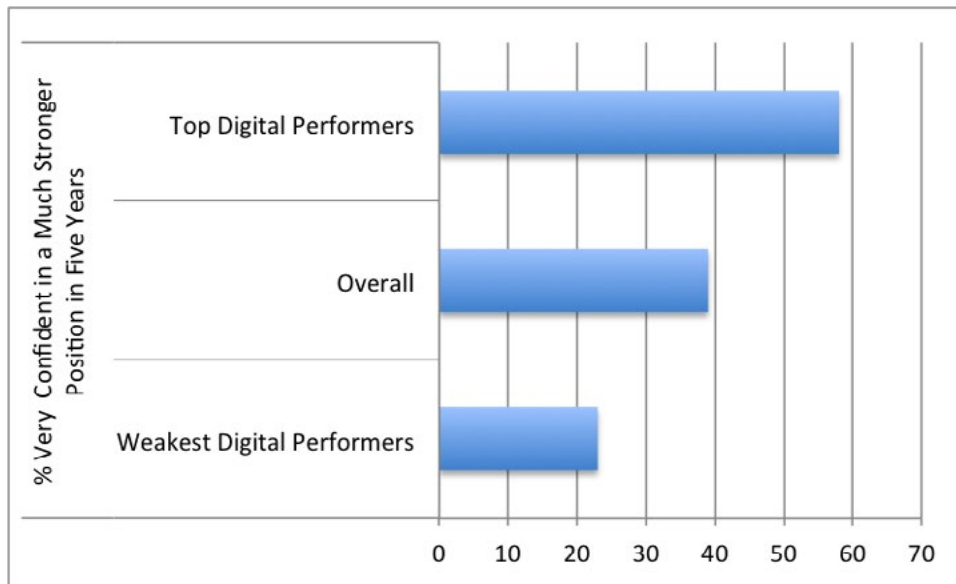
Apps, APIs, and Analytics

In a “programmable” world, apps, application programming interfaces (APIs), and data analytics are essential tools in delivering great experiences to customers, employees, and partners. An app is simply a purpose-built, user-interactive software program that is specifically designed for a particular computing device; it's often optimized for a smartphone or tablet. An API works behind the scenes, to expose or project data and functionality for use by apps and the developers that create them. APIs make enterprise assets reachable by apps; the enterprise chooses those assets in order to enable customers, partners, or employees to interact in ways that reinforce the business model. Data analytics describes technology that analyzes and finds patterns in all kinds of data, discovers useful information, and draws conclusions that help shape business strategy.

2 Apigee Institute (May 2013). *An Emerging Digital Divide*. <http://bit.ly/18vojfq>



Digital strength and overall confidence correlate³



This implies an emerging “digital divide” between companies that have embraced digital transformation as they pull away from those that are slower to prioritize digital capabilities.

This is backed up by other research. A 2013 report from MIT’s Sloan School of Management, for example, concluded that businesses that are considered leaders in digital customer experience have higher margins and revenue growth than their competitors.⁴ Similarly, McKinsey & Co. found that one-third of C-suite executives expect digital business to boost operating income by more than 10% by 2015.⁵

3 Apigee Institute (May 2013). *An Emerging Digital Divide*. <http://bit.ly/18vojfq>

4 P. Weill and S. Woerner, “Optimizing Your Digital Business Model,” MIT-Sloan, Vol. 54, No. 3, Spring 2013.

5 McKinsey Global Survey Results, “Minding Your Digital Business,” McKinsey & Co., May 2012.



The digital transformation continuum

The digital divide isn't about the haves and have-nots. It's better viewed as a continuum where some companies, driven by an awareness of the importance of at the very least dabbling in digital, are just beginning their transformation journey. These companies understand the drivers to change—they know, for example, that there's a critical need to get “closer” to their customers. They aren't necessarily thinking about an enterprise-wide transformation, however. These companies haven't connected the dots between the individual digital actions they have taken and developing a cohesive, broader change in the way they operate and compete.

Other companies reside in the broad middle range of the continuum. Some may have established a process for digital transformation. All are at least aware of its importance and understand that they need to change. These companies, to varying degrees, have taken some steps in the direction of transformation; some businesses in this middle range might even have a digital strategy working-group in place. In one sense, this broad swath of companies faces the greatest risk of being left behind by competitors, as some might be at risk of getting stuck in the “polite fiction” of a pilot project.

Finally, there are the top digital performers. Digitally transformed businesses have successfully integrated data analytics, apps, and APIs into their operating model, and have added a digital element to their customers' or employees' experience. These companies are motivated by a strong conviction that digital capabilities are critical to success. Examples of digital superstars include Amazon.com and Nike.

Pilot projects: a polite fiction

Pilot projects are a great way to get started on the path to digital transformation, but they carry an inherent risk, too. Companies that have been aggressive in initiating digital projects sometimes rest on their laurels, feeling satisfied that a box has been marked on their digital checklist. Often, however, this sense of complacency can stymie a transition from experimenting to scaling to the level needed to transform the business.

Perhaps a company has developed a cool customer app that is driving good results, but isn't scalable. Maybe a business has employed an analytics solution that is unearthing some narrowly defined insights. In these situations, successful pilot projects exist as a “polite fiction” that put the competitive trajectory of enterprises at risk. In fact, they rank with the other two “P” words that can slow progress on this path: panic and paralysis.

Experiments and discovery are important, but it's critical that they are viewed as a means to an end that will have enterprise-wide relevance and impact. Conviction is key to connecting digital strategies to key performance measures; it really is scale or fail.



The Benefits of Getting in Digital Shape

Increased efficiency. The ability to react quickly to market changes. Customer satisfaction. New and improved revenue streams. These are critical challenges and issues for today's enterprise, and a key driver that is pushing companies of all sizes across different industries to think about getting in shape, digitally speaking.

In the telecommunications industry, for example, established service providers are facing big challenges in growing revenue as they navigate waves of new competition from inside the industry and out. The agility that comes hand in hand with digital transformation is particularly attractive in this kind of situation. One developer at a large telco explains that moving toward a digital enterprise model not only shortened time to market, but also transformed how the company designed products and services.

When the service provider's marketing team had an idea for a new product, "instead of the long and uncertain traditional product development process, because of APIs we were able to put a prototype in the market in two weeks with a small team—we not only understood real demand better, but also how to deliver exactly what users wanted."

This is just one example of how embarking on a path to digital transformation is critical to catching up to, keeping up with, or beating segment leaders and aggressive digital upstarts alike. In our research, we've found that top digital performers—companies that intensely emphasize app deployment, data analytics, and the use of APIs as critical to their company's competitive position—account for nearly two-thirds of the companies that reported strong results in key performance indicators (KPIs): customer satisfaction, margin, revenue, market share, and new product and service delivery over the previous 12 months.⁶

Transformed enterprises achieve these impressive metrics by transforming three critical areas: the experiences of their customers; their internal operations and business processes; and their overall business model.

⁶ Apigee Institute (September 2013). *KPIs, Conviction and Competitive Analysis*. <http://bit.ly/1gVRtJq>



Transforming the customer experience

Consumers accelerated the harmonization of the digital and physical worlds by embracing always-on mobile devices and the apps that reside on them. It's a lot like the acceleration of brick-and-mortar businesses onto the Web nearly 20 years ago, but only in a far more compressed time frame.

Customers increasingly expect to have desired information or services instantly available and literally at their fingertips. This expectation offers a great opportunity for companies to burnish their image: over 60% of people have a better opinion of brands when they offer a good mobile experience.⁷

Conversely, bad performance on this front poses a risk, as 61% of users said they'd quickly move on from a poorly designed mobile site, while a mobile-friendly site made 67% of users more likely to buy a product or use a service.⁸

Eighty percent of smartphone owners use their device as part of their in-store shopping experience, and one in six use mobile devices to assist in shopping at least once a week.

The demands and expectations of today's consumers are nimbly met by transformed enterprises. Netflix is a great example. The company's ability to project its streaming content nearly ubiquitously across a multitude of devices (nearly 250, according to one report) has helped it upend established industries and cement its position as a market share leader.

The company was evolved from a video rental service to a streaming platform largely because of its decision to open its API to outside developers and partners, and now a customer can switch from TV to PC to tablet, picking up his or her viewing experience seamlessly, without missing a frame.

Brick and mortar businesses benefit from this transformation too, though digital experiences don't necessarily replace physical ones. Rather, digital "wraps" and enhances the customer's physical experience in smart, digital ways, furnishing the tools for customers to get what they want when they need it, through whatever channel makes sense.

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7 K. Gosselin (December 2012). "Next-Gen Retail: Mobile and Beyond," Latitude. <http://bit.ly/16Fr7H0>

8 M. Fisch, "Mobile-friendly Sites Turn Visitors Into Customers," Google Mobile Ads Blog. Google, Sept. 25, 2012. <http://bit.ly/HmTbn7>

9 "How Mobile is Transforming the Shopping Experience in Stores," (May 2013). Google Think Insights. <http://bit.ly/19O0BJH>



“Going where the customer is” and enabling consumers to interact seamlessly with your business, regardless of the device or method, has become a critical part of many companies’ digital transformation, including that of Walgreens, the largest drugstore chain in the United States.

Walgreens’ story is a classic tale of a long-established brick-and-mortar business adding a digital layer to better serve customers.

Founded in 1901 in Chicago, Ill., Walgreens provides nearly 6 million customers with convenient, multichannel access to consumer goods and services and pharmacy, health, and wellness services and advice. It continued its tradition of offering innovative technology to its customers last year by introducing QuickPrints, which enables photo printing from iOS and Android mobile devices for pickup in Walgreens stores.

“We’ve always been focused on giving our customers the ability to interact with Walgreens through a number of different channels. The goal is to drive customer interactions. It doesn’t matter where it starts from because it’s all flowing into your business.”

**-- Joe Rago, senior product manager,
Walgreens Mobile**

QuickPrints is the company’s first open API, which encourages the developer community to create innovative apps by giving them access to Walgreens’ data. The company traveled a similar route with its pharmacy prescription API, which enables the use of third-party mobile apps to order refills of prescriptions originally filled at one of Walgreens’ more than 8,000 physical locations. The company found that the customers who engage with Walgreens in person, online, and via mobile apps spend six times more than those who only visit stores.

Eventually, Walgreens aims to “wrap its stores” with APIs by considering all of the key functions that serve customers, and enabling them to be served with an app and continue the 113-year-old company’s progress on its path to digital transformation.



Transforming business operations and processes

Digitizing the customer experience often goes hand in hand with the transformation of internal business operations. Medical apps that connect securely to a hospital's electronic health records enable doctors to make treatment decisions faster, in turn helping patients get well more quickly, and potentially saving lives. CRM apps arm sales people in the field with fingertip information to instantly personalize service to customers, and simultaneously open the door to cross-selling opportunities.

U.K. supermarket chain Morrisons has been pushing digital transformation on many fronts. For one, the company has modernized its inventory management process, which previously consisted of employees walking through stores with paper forms, checking shelves, and walking to an administrative office and typing the information into a PC. Morrisons now uses tablet-based inventory systems that enable workers to continue satisfying customers with guaranteed freshness while boosting the company's efficiency. The company eliminated inventory errors, reduced costs, and enabled more staff to shift to face-to-face customer support.

Some important operational changes are getting pushed forward in part because of progress toward a digital world. The traditional and expensive methods of data integration (such as ETL—extract, transform, and load) are proving too rigid to cope with the rapidly changing and dynamic mobile and social app ecosystem. The way customers and partners interact with an enterprise has evolved dramatically, and the data they produce is much less in control of the enterprise. Traditional data management methods can't cut it in this space. Instead, the API model wins because these new shapes and forms of data require new capabilities. API-based integrations simplify infrastructure needs, improve the speed of data analysis, and save money.

Whether it happens in business processes or in operations, efficiency and speed are hallmarks of digital transformation. Giving everyone—partners, customers, and employees—secure access to important data via apps has enabled construction giant Bechtel to complete projects faster with greater profitability.

Bechtel, one of the world's leading engineering, construction, and project management firms, saw a key advantage in using APIs as a cornerstone to its digital transformation. The company envisioned providing key information quickly to employees in the field. The challenge, however, was to deliver this information to a diverse, fast-moving universe of projects from systems that were monolithic and never intended to serve next-generation mobile devices.

“On our many large and complex projects around the world, the need to deliver the right information to the right people at the right time is a key part of ensuring our success. This drives a need for us to change our approach to delivering solutions, focusing more on an agile rather than a waterfall development approach.”

-- Christian Reilly, manager of demand management, Bechtel Corp.



Retooling its large and complex portfolio of applications and systems was out of the question—it would have been prohibitively expensive. So instead Bechtel added a digital layer, using APIs and mobile applications to enable workers to access project-specific data on tablets or mobile phones, when and where they need it. By doing so, Bechtel created an alternate way to connect to back-end systems and a platform to develop intuitive user interfaces that could be easily customized, delivered, monitored, managed, and analyzed.

Bechtel's API and mobile app strategy has led to gains in efficiency and productivity, especially on the large construction sites around the world where its employees previously had to do safety and quality inspections or in-situ reviews of complex building drawings based on manual, paper-based methods.

As its digital transformation continues, Bechtel plans to extend its strategy by bringing a higher quality information flow to its partners, customers, and suppliers.

Transforming business models

Netscape founder and Silicon Valley investor Marc Andreessen famously wrote that “software is eating the world.” Photography is now digital, movies are streamed to the device of your choice, navigation has moved from paper maps to a Garmin or TomTom device. A key part of this trend is the fact that there are companies, including Netflix, Amazon, and Pandora, that have become platforms for this software sea change.

Many companies have seen their digital future and realize the need to make the transition to becoming platforms for software applications. No matter what industry, every major corporation has a physical value chain that has the potential to be digitally augmented in some way. Every company can take advantage of ways to project their business model through software, and become, in a sense, a platform.

No matter what industry, every major corporation has a physical value chain that has the potential to be digitally augmented in some way. Every company can take advantage of ways to project their business model through software, and become, in a sense, a platform.

At an advanced level, the platform business model enables users, whether they are customers, employees, or partners, to both create and consume value. In the end, a digital ecosystem is created, where businesses are finding tremendous advantage in opening up their data to innovation by developers, inside and outside of their companies. This, in turn, enables the creation of new experiences for customers.



The U.K.'s Pearson Plc, the largest education and book publishing company, is a perfect example of how a company unlocked its assets in a way that unleashed a digital business model transformation and has helped a move toward the platform model.

In September 2011, Pearson launched its Plug & Play developer platform, which grants developers access to Pearson's vast library of content for integration into innovative apps. This enables the delivery of Pearson's rich content in easily consumable ways to a much broader market, but it also lets the company better understand usage, manage growth, drive developer adoption, and explore new revenue opportunities.

“The world is changing -- becoming more open. There has been an important shift in the ecosystem around us, and APIs are becoming the norm. Companies are using them as the foundation of their development. We saw this as a big opportunity for Pearson.”

-- Diana Stepner, head of future technologies, Pearson

Pearson has opened several avenues for developers to incorporate its content into apps. A popular app that helps users discover top London attractions and build personal itineraries was developed by digital marketing firm Metia, using information from Pearson's DK Eyewitness Guides and Pearson APIs.

Almost as important as the way apps like this have altered Pearson's way of doing business is the fact that they are helping transform the perception of the company, from a traditional publisher to a digital innovator that exists as a part of a digital ecosystem.



Your Digital Transformation Strategy: Building Blocks for Success

The rapid shift in user behavior towards apps and mobile devices has happened faster and at a higher total user volume than the shift to the Web. As a result, Web-based portals, marketplaces, and even search engines are losing share to apps on mobile devices. The lack of an app strategy might be damaging to a brand today, but soon—if it hasn't already—this omission will hurt growth, and then revenue.

This is especially true in light of the progress your market rivals might be making in their digital transformations. When one industry player establishes an API on this path, it poses a strategic challenge to others in that industry.

The fact is, if you aren't facing a competitive threat from competitors who have a digital strategy, you will. To spur action, sometimes it helps to examine what losing would look like to your business. Rather than consider what would happen to your business if you win, what would happen if you did nothing? So the question really isn't whether to do something; it's what to do.

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That said, setting out on a path to digital transformation isn't easy, partly because there isn't just one clear direction to start moving. Do you begin with changing your employees' experience? Your customers' experience? Your business processes?

A recent study by MIT Sloan Management Review and Capgemini Consulting found a host of hurdles that can interfere with digital transformation. On the leadership front, problems include a lack of urgency, a lack of vision, and lack of alignment on the digital roadmap. Institutional challenges include a perception that older managers don't want to deal with digital change; the limitations and complexity of legacy IT systems; innovation fatigue; and internal politics.

“Despite growing acknowledgment of the need for digital transformation, most companies struggle to get clear business benefits from new digital technologies. They lack both the management temperament and relevant experience to know how to effectively drive transformation through technology,” the report found.¹⁰

10 M. Fitzgerald, N. Kruschwitz, D. Bonnet, and M. Welch (October 2013). “Embracing Digital Technology, a New Strategic Imperative.” MIT-Sloan. <http://bit.ly/1ipmmBx>



Regardless of where your business is on the digital transformation continuum, there are steps you should be taking to overcome these potential stumbling blocks and ensure that you start or continue moving in the right direction.

Establish leadership, ask questions, set goals

Establishing a working group within your leadership team is a good way to begin setting some goals and start sketching out a roadmap to achieve them. A fundamental question—and a good place to start the conversation—is this: how could a digital transformation reinforce your company's key business objectives?

When setting goals, it's important to be aggressive; your more digitally proficient competitors are. Consider building goals around the assumption that at least half of customer and partner interactions with your business must be digital by the end of next year in order to build leadership market share position.

Assess outside

Who are your top competitors, who are the new entrants, and what do their digital strategies look like? What are key business and technology trends in your market and how do they impact your company? Key stakeholders (or the digital strategy working group) must be asking questions like these. You should also drill down into your customer base to clearly define who your users are and how they interact with your business. Questions include:

- **What are your customers' key characteristics?**
- **Can you quickly deliver products and services on the platforms your customers or employees want?**
- **What are the tangible benefits of connectedness with customers?**
- **Can you “storyboard” your customers' end-to-end experience with your product or service?**



Assess inside

One thought to keep in mind when preparing for the programmable world: Is your organizational structure in good shape to achieve a digital transformation? Succeeding will require a technology strategy that enables the operation of a digital layer across the value chain, but it also calls for a broader business strategy to orchestrate incentives and points of control to drive revenue and market share. In other words, it requires close coordination between technology and strategy.

Success is more likely when marketing and IT departments work together to define success, make investment decisions, and bring products and services to market. In fact, our research finds that there's a powerful relationship between creating this kind of strong organizational alignment on digital strategies and turning those strategies into market-leading digital performance.

As the graph below shows, increasing the alignment of IT and marketing—along with connecting digital investments to enterprise KPIs and choosing appropriate ROI criteria—directly correlates with an increase in digital performance.

Organizational alignment: a key to digital excellence¹¹



This alignment is very important: when IT can deploy new capabilities quickly (and apps and APIs are a key to this), your marketing team can offer new customer experiences before competitors can.

11 Apigee Institute (May 2013). *An Emerging Digital Divide*. <http://bit.ly/1f02RQ1>



Choose the right metrics

You're working on your digital transformation. At the same time, the behaviors of customers, partners, and rivals are changing rapidly. Big transitions like this require different ways of measuring success. In changes of similar importance and size, companies who remained focused primarily on revenue and margins lost ground, while those who focused on market share were rewarded with a dominant position once the transition was complete.¹²

To chart a successful path to digital transformation, it's important to adjust how you think about success.

KPIs

Digital transformation, as the name implies, leads to a company-wide, game-changing evolution. There's no question that becoming a digital enterprise will "move the needle," but it's important to realize that there are many "needles" in your business, and you need to know which ones to watch most closely.

Key performance indicators, or KPIs, represent one of the most important and powerful ways to govern a digital approach and set it up for success. With KPIs, you identify what you want to measure, take a snapshot today, and then measure it again later to see how it is affected by changes you instituted.

Our research found that establishing a framework to connect digital investments more directly to enterprise KPIs is a critical way to succeed.¹³ The top three KPIs that technology-enabled capabilities will impact most are important ones: 74% of respondents to our survey pointed to financial KPIs (revenue or margins); 71% cited market share; and 68% named customer satisfaction and brand reinforcement.

ROI criteria to drive digital success

Just as it is important to focus on the right KPIs to drive digital success, so is choosing ROI measures that drive better decisions about digital investments.

In our research, the most important ROI metric—the one that was best for driving decisions that deliver the most long-term, strategic value for a company—was customer satisfaction or brand reinforcement goals. Efficiency was also important. The biggest challenge in creating ROI frameworks is justifying change. Why are we doing this? The goal must be something everyone cares about. Customer satisfaction is just such a goal.

12 A. Gawer (2011). "What Managers Need to Know about Platforms." *The European Business Review*. <http://bit.ly/1bw7e2t>

13 Apigee Institute (May 2013). *An Emerging Digital Divide*. <http://bit.ly/1f02RQ1>



New profitability metrics

Ensuring success in your digital endeavors might require a shift in your methodology of measuring their financial success and how they contribute to the bottom line. Financial approaches like net present value, or NPV, work best to improve existing products or expand existing, familiar, and stable lines of business. They assume conditions of low uncertainty and evaluate opportunities based on current information. Any uncertainty in an NPV model is a negative.

But the future is uncertain, especially in the fast-moving world of digital transformation, and using traditional financial metrics for analyzing decisions, especially early on, can snuff out potentially good ideas. A real options valuation (ROV) approach isn't as easy to implement as an NPV framework, but it is best suited to the challenges of digital transformation. Uncertainty—and the ability to respond to it and “pivot “ if needed—becomes the source of value in this model. If conditions change in the future, does having this capability help you to do something else to adapt to that change? With a digital initiative, the answer is often “yes.”



The Programmable Future

As the growing pervasiveness of connected devices moves the critical mass of computing power from the center to the edge, we are approaching a programmable world, where participants interact and transact primarily through software.

We're not there yet, but this future is coming quickly. For all the impact we have seen from digital transformation in the last five years, the next five will bring orders of magnitude more. The reason: only a few companies have finished weaving together the digital fundamentals—deploying apps, using data analytics, and operating APIs—into an operating model that transforms how they do business and turns them into programmable enterprises.

A glimpse of the future

Here's a look at what's ahead, via an anecdote that illustrates the notion of a programmable enterprise:

The owner of a small construction firm starts his truck in the morning and an in-car app asks if he'd like to approve the day's planned order at the home improvement store. There are some recommendations as well. His project management and accounting apps share data with the store, including his own criteria for the time-value of money and the tolerance for schedule risk. As a result, the store not only runs its own forecasts to optimize pricing and availability of parts and supplies, but also enables an ecosystem of suppliers to “bid in” with offers.

As soon as he approves the order for the day, the app, which is updated in real time by the GPS in the truck, lets the store know when his order must be ready for his arrival. Five minutes out, any members of his crew who are already onsite get a notification on their phones to send any last-minute additions.

When he pulls up at the loading dock at the store, he reviews any last-minute additions while the staff loads his truck. As soon as the first item is scanned, the in-car app shows him the standing breakfast order for his crew at the convenience store on the way to the jobsite, with a recommendation: the daily special is a breakfast sandwich his crew previously rated “five stars” when it was last served on the construction site. As soon as he approves it, an ETA is calculated and sent to the convenience store on the way to the job site based on the progress with loading and local traffic. A camera recognizes his license plate and a quick photo is all it takes to make the charges to his account and update both his project management and accounting apps.



As futuristic as this anecdote might sound, it isn't science fiction. These are the kinds of experiences automotive and retail companies are creating today using apps, APIs, and data analytics. It's a bellwether of the kind of experiences that employees, customers, and partners will regard as the minimum acceptable standard by 2020.

As more companies cross this threshold and adopt digital operating models, the experiences they provide will drive consumer, partner, and employee expectations to shift more quickly. The leaders will set the rules of the game, driving out those who cannot play on their terms, and this leads to a potential question that will face many businesses: Now that our rivals offer experiences like this, why would customers, partners, or employees settle for less with us?

Amazon.com is one of the best examples of a programmable enterprise. As a recent BloombergBusinessweek article puts it, "Amazon.com rivals Wal-Mart as a store, Apple as a device maker, and IBM as a data services provider."¹⁴ The company evolved from an online bookseller to a leader in cloud computing and infrastructure-as-a-service in large part because of a mandate set forth by its CEO Jeff Bezos in 2002.

Mastering apps, data, and APIs now is a first, necessary, and urgent step toward developing the capabilities necessary to deliver experiences only possible when software communicates with software and data is managed as a medium of exchange.

He proclaimed that all services within the company must be built in a way that they could be exposed to one another to enable simple communications. In addition, all of these so-called service interfaces must be planned and designed to enable exposure to outside developers. Bezos couldn't foresee which of these services would end up being externalized. But the move transformed Amazon internally and led to some products that went far beyond online bookselling: Amazon's Elastic Compute Cloud and its relational database services, among others.

Others have led the way along with Amazon: Google and Apple are prime examples. But all over the world, thousands of companies have been doing what they need to do to follow in their footsteps.

Mastering apps, data, and APIs now is a first, necessary, and urgent step toward developing the capabilities necessary to deliver experiences only possible when software communicates with software and data is managed as a medium of exchange. Employees, partners, and customers will demand these experiences by the end of this decade.

14 B. Stone (Oct. 10, 2013). The Secrets of Bezos: How Amazon Became the Everything Store. *BloombergBusinessweek*. <http://buswk.co/1diPcCZ>



Conclusion

The path to digital transformation won't necessarily be easy, or smooth. But adding a digital dimension to your business is a critical goal as software extends its reach into an increasing number of interactions and transactions in the lives of your customers, employees, and partners. Across all industries, companies can improve revenue and margins, market share, customer satisfaction, and time to market by going where their customers are: a world where mobility rules, where agile apps are the desired interface, and where data is the currency.

Understanding the importance of this sea change and how it will affect your business is important, but how you respond and transform your business is key to success. Enabling interaction with your business through great experiences on any device generates valuable data and insights, and enables you to quickly act on those insights, create a competitive advantage, and build on your digital transformation.



About Apigee

Apigee empowers enterprises to thrive in today's digital world by transforming digital assets into innovation engines. Results are delivered as apps, optimized by data, and catalyzed by APIs. Hundreds of companies including Walgreens, eBay, Shell, Bechtel, Marks & Spencer, and Vodafone partner with Apigee to accelerate their digital transformations. To learn more, visit apigee.com.

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