



# Are You Where Your Customers Are?

Retail 3.0: Digital Transformation

**apigee**

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## Introduction

Half of the top 12 retail enterprises worldwide and most of those who are considered best digital innovators are Apigee customers. These are businesses that are undergoing digital transformations in response to the sudden dominance of mobile end-user computing, social and business networking, an explosion in data, and new forms of competition.

For retailers, there are several driving forces that call for a new approach to business and technology. The first is changing customer behavior and expectations as a result of patterns that are fundamentally different than they were prior to the rise of mobile, social, and cloud computing. The second is the rise of digital competitors—platform players like eBay, Amazon, and Apple are changing the game for established businesses in most industries, including retail, and creating incentive for major companies to act. In order to stay competitive and keep up with customers, retailers and brands strive to be agile. They need the ability to deploy new features and make changes continuously and quickly.

The imperative for retailers is to build a digitally enabled customer experience, digitize business processes, and develop new business models for a digital world.





The content of this ebook is based on our work with leading retailers to strategize and build digital value chains, which augment or replace the physical and web-based value chains used to connect customers, partners, and employees.

If you own a digital transformation or mobility program for retail, this ebook will give you the ammunition you need to meet the challenge of the digital world head-on, answer questions about apps, data, and APIs, and create your own roadmap.

Inside you'll find information about the changing landscape for retailers and the capabilities needed to effect a successful transformation of a retail business to better engage with customers, partners, and employees and lead in a mobile world. It goes without saying we'd love to talk to you about how [Apigee](#) can help launch and scale your digital strategy. You can also try our [free Apigee service](#) today.



## The Connected Customer

The revolution toward the connected customer in every industry, especially retail, is well underway. The explosive growth in mobile devices, social channels, and big data is driving the convergence of the digital and physical worlds, changing consumer behavior, and driving profound change in business. Customers are no longer solely walking into the stores to do business; your store is now literally in the palm of their hands at any time of day or night.

The number of connected devices—from smartphones to smart cars and even wearable computing devices—is heading for a tipping point at which most work, play, and commerce will have a digital dimension. As a result, software touches nearly all social interactions and commercial transactions.

### Where are your customers?

The story of the rise and pervasiveness of mobile devices is so mainstream that the data surrounding this trend hardly need mention. But a small sample underscores just how important the mobile revolution and the app economy have become to the retail world:

- In her [annual Internet trends report for 2012](#), Mary Meeker, partner at Kleiner Perkins Caufield & Byers (KPCB), places a considerable focus on mobile growth and its influence on retail as well as other industries. Meeker assesses that mobile phones and tablets represented 24 percent of online shopping on Black Friday (the biggest shopping day of the year in the USA) 2012, versus 6 percent two years previously.
- In September 2013 Gartner published [its latest market forecasts](#), estimating that 103B mobile apps will be downloaded in 2013, which represents a 59.4% rise above last year's total.
- Gartner forecasts that by 2017, annual app downloads will reach 268.7B, by which point 94.5% of app downloads will be free, and in-app purchases will be generating 48% of revenues for retailers.
- According to [Nielsen](#), 47% of U.S. smartphone owners used shopping apps in June 2012. Overall, 45 million smartphone owners used apps in the shopping/commerce category, accessing shopping apps an average 17 times during June 2012.

### How consumers spent their time in 2012

- TV: 168 minutes/day
- Apps: 127 minutes/day\*
- Internet: 66 minutes/day

**Source:** comScore

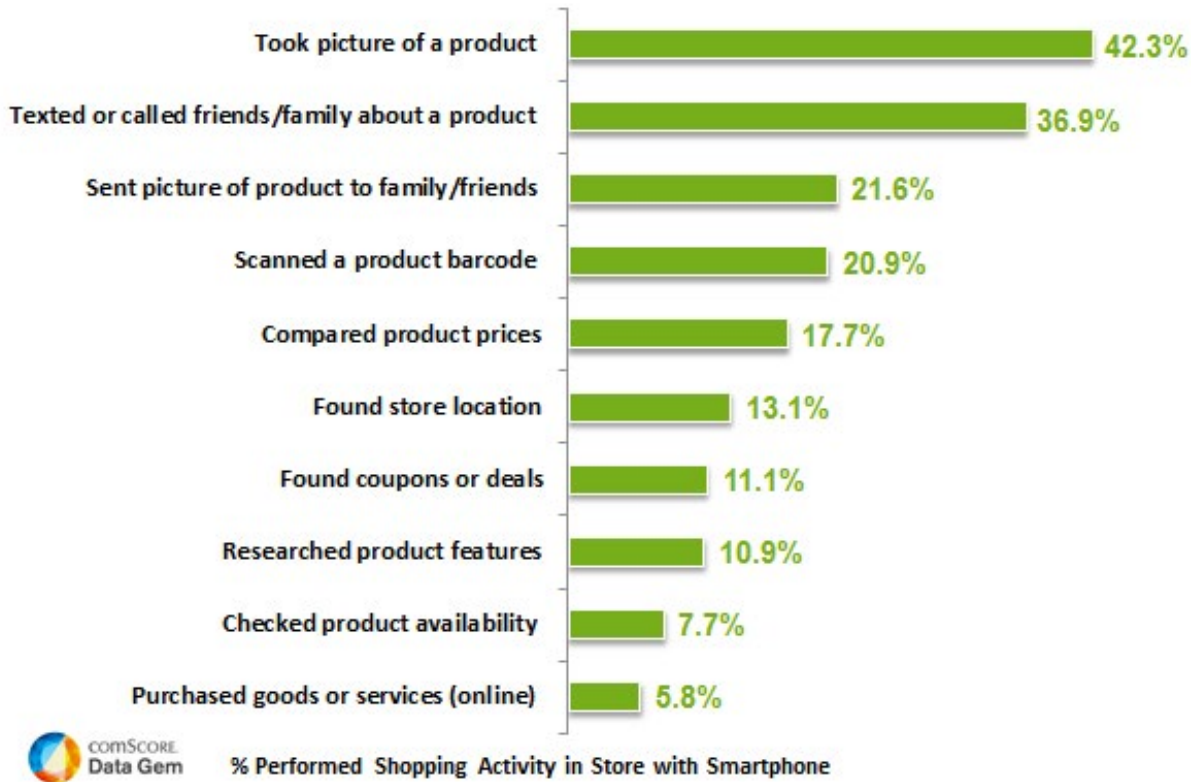
\*Expected to double in the 2 years 2012-2014



- Juniper Research claims that in 2017, “consumer apps” will generate \$75B of revenues, with just under a quarter of those revenues coming from paid apps, and the rest from advertising and in-app purchases.
- According to a study by [www.statista.com](http://www.statista.com), 48% of “showroomers” use physical stores to research products with no plans of making a purchase until they go online
- Up to 30% of retailers’ traffic comes from mobile devices, including tablets. Mobile commerce in the USA increased from just 3% of e-commerce in 2010 to 11% by the end of 2012, according to comScore. That represents approximately \$18.6 billion in consumer spending - and doesn’t include travel-related purchases, which comScore counts separately.

### Activities Performed in Retail Store With a Smartphone

Source: comScore MobiLens, UK, 3 Month Average Ending Oct 2012



“One out of every three monthly visitors to the average digital retailer website comes exclusively on mobile platforms. Not only is retail one of the highest penetration activities across all digital media platforms today, but in June it actually had a higher penetration within smartphones (90%) and tablets (91%) than on desktop computers (78%). Given its relative importance on mobile platforms, retailers should not be surprised then to see an increasingly meaningful percentage of their digital visitors being sourced from smartphones and tablets.”

[http://www.comscore.com/Insights/Blog/5\\_Things\\_Every\\_Marketer\\_Should\\_Know\\_About\\_Mobile\\_Commerce](http://www.comscore.com/Insights/Blog/5_Things_Every_Marketer_Should_Know_About_Mobile_Commerce)



### It's a worldwide phenomenon

In **Europe**, retail and travel spending via mobile phones increased by 70% in 2011, and Forrester predicts that mobile commerce will be worth 19 billion euros within the EU by 2017.<sup>1</sup> Retail sites reached 84.5% of the online audience in France, making it the third-largest market in Europe in June 2013, after Germany and Russia.<sup>2</sup> Three in four Internet users in Germany visit a retail site.<sup>3</sup>

Online shops in the **Asia-Pacific** region are diving into mobile commerce just as quickly as their western counterparts. They are moving quickly to offer mobile-optimized web sites or mobile apps to better serve their customers, as more shoppers in Asia are using smartphones and tablets to purchase products and services.<sup>4</sup>

In **Australia**, shoppers spent \$22.2 billion online in the 12 months prior to May 2013<sup>5</sup>. There was a 152% increase in Internet access on mobile phones over the same 12-month period, and 57% of Australian shoppers have bought a product or service on the Internet. Additionally, 45% have researched online, and 45% have both researched and purchased online.

1 [http://blogs.forrester.com/michael\\_ogrady/12-07-19-mobile\\_commerce\\_will\\_be\\_worth\\_19\\_billion\\_euros\\_within\\_the\\_eu\\_7\\_by\\_2017](http://blogs.forrester.com/michael_ogrady/12-07-19-mobile_commerce_will_be_worth_19_billion_euros_within_the_eu_7_by_2017)

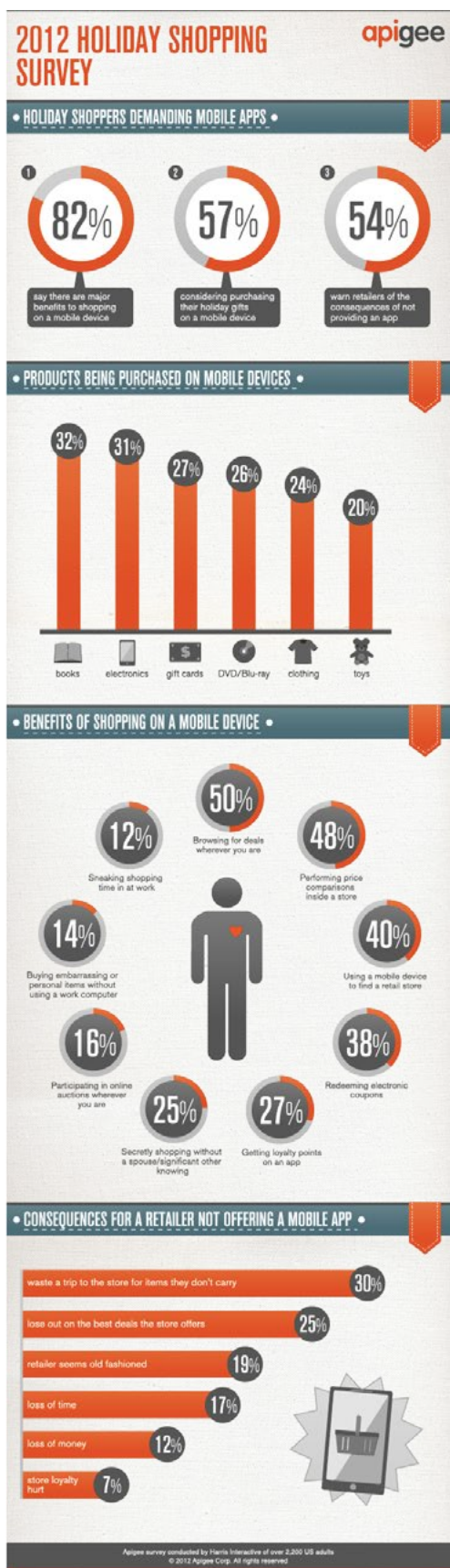
2 [French Online Retail Market is Third Largest in Europe](#)

3 [A Digital Month in Germany: What are Consumers Doing Online?](#)

4 <http://www.zdnet.com/mobile-commerce-growing-dominance-in-apac-7000010751/>

5 <http://www.slideshare.net/KyleLacy/5-trends-changing-retail-in-apac>





### Web commerce morphs into app commerce

To remain relevant, retailers must innovate and provide unified and engaging experiences across all channels, regardless of whether the customer is in-store, using a self-service retail kiosk, on the company website, using their mobile phone, iPad, Internet connected set-top box, or connected car. Web commerce is quickly morphing into app commerce, which includes Web apps, native smartphone apps, tablet apps, and retail kiosk apps.

It is no longer sufficient to have just a desktop site for your brand or your e-commerce efforts. Companies that quickly deliver digitally instrumented products or services, harvest data from customer and partner interactions, and use insights gained from data analysis to rapidly iterate and optimize their value chain will gain competitive advantage.

**Leading retailers with networks of stores** are finding ways to connect the in-store experience with the digital life of their customers.

**Brand owners** are innovating and creating new digital experiences that in turn create a direct connection with their customers.

**Luxury brands** are creating customized, personalized, and luxury-shopping experiences inside and outside of their stores—experiences that engender loyalty and keep customers coming back.



### Are you where your customers are?

Apigee's own research clearly illustrates why consumers are demanding mobile experiences for shopping for everything from books to electronics to toys to clothing. The survey results underscore the detrimental consequences to a retailer's brand and bottom line of not providing engaging, entertaining, seamless experiences.

Survey respondents report the top benefit of mobile shopping is the ability to browse for deals wherever they are.

### Are you where your customers are?

To be in the right place, at the right time, with the right product or service, a new digital value chain is called for—one that augments or replaces prior physical and Web-based value chains used to connect customers, partners, and employees.

Faced with asymmetrical competition and with the Internet and mobile having established themselves firmly as sales channels, retailers who don't evolve their digital businesses will be left behind.

Adding to the urgency, platform players like eBay, Amazon, and Apple are threatening established businesses in most industries, including retail, and are creating an incentive for major companies to act.

### What's at stake?

#### **Your customers' satisfaction! Customer engagement! Your business!**

The number of consumers who haven't researched or bought online is becoming dwarfed by those who do some portion of the interaction online. Consumers are spending time researching on their smartphones (15+ hours a week), and mobile has a critical influence on their purchase decisions (93% go on to buy). Immediacy is key, with more than half of customers wanting to purchase within the hour.<sup>6</sup>

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6 <http://www.google.com/think/research-studies/mobile-path-to-purchase-5-key-findings.html>

## Towards a Digitally Enabled Business

Since the industrial revolution, technology has been a driver for businesses to reach new customers, expand market share, improve productivity, and optimize business processes. Today, however, customers and their expectations are the primary drivers of the revolution. Retailers with networks of stores need to find ways to link the in-store experience with the digital life of their customers. Brands strive to build innovative digital experiences that create a direct connection with their customers, engender loyalty, and keep customers coming back.

Today's savvy shoppers are carrying their favorite retail stores in their pockets, doing more and more business on mobile devices, are making buying decisions that are increasingly informed through social networks. Consumers are demanding seamless experiences and flawless interactions across channels. Near real-time wish fulfillment and instant gratification are also key to customer satisfaction, as evidenced by actions like eBay's acquisition of [Shutl](#), the U.K.-based marketplace that uses a network of couriers to deliver local goods within a few hours of an on-line purchase.

Customers are moving away from email as the key source of information; push notifications and real-time social messaging is now key to communicating with customers. As the shopping list created from scrolling Web pages of products gives way to a list created by bar codes scanned with smartphones, as the map and the telephone cede ground to the store locator app, as plastic loyalty cards give way to apps, how can retailers respond to shifted customer expectations? Providing a unified experience involves enabling flexible and seamless shopping, full-product offerings across all channels, a single view of customers across channels, and a single organization servicing all channels.

### Linking the in-store experience to the digital life of customers

Digital businesses have the vision and the ability to execute on building a digitally enabled customer experience. Leading businesses are responding by undergoing digital transformations, and the pay-off is measurable. Two-thirds of executives in the global 2000 expect that digital business will increase operating income over the next three years, and more than eight in ten CIOs say mobility will significantly improve customer interactions.<sup>7</sup>

High-end customers are emulating the Apple shopping experience. When customers come into the store, the clothes they put in their online shopping lists will be set aside in their sizes and items not in stock will have already been couriered over from other stores.

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7 [Apigee Institute Survey | Special Report KPIs, Conviction, and Competitive Advantage](#)



U.S. pharmacy chain Walgreens has said that mobile technology is an integral part of its strategy for driving more traffic into its more than 8,000 stores nationwide. Walgreens, describing its strategy as *omnichannel*, reports that those who interact in-person, online, and on a mobile app spend six times more than those who only visit stores.<sup>8</sup> Further, they see that even those who just use the apps before visiting stores but do not visit Walgreens websites generate four times the sales than store-only customers.

Over the last 129 years, Marks & Spencer has grown from a single market stall to become an international multi-channel retailer. In July 2013, Marks & Spencer reported a near 30% rise in online sales, as customers used new multichannel services.<sup>9</sup>

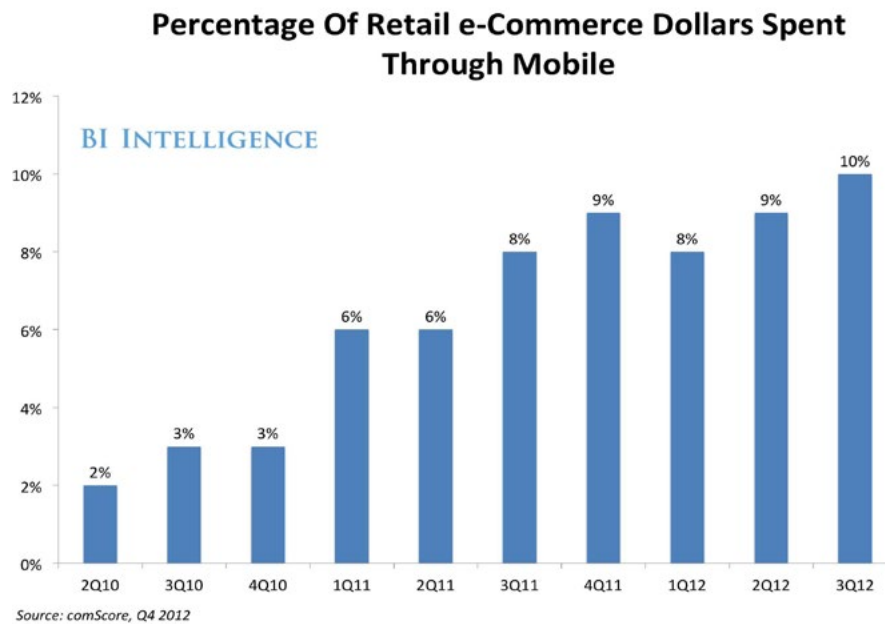
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8 [http://www.youtube.com/watch?v=\\_Bb7UXb7ds4](http://www.youtube.com/watch?v=_Bb7UXb7ds4)

9 <http://internetretailing.net/2013/07/ms-chalks-up-near-30-rise-in-online-sales-as-multichannel-services-improve/>



## Percentage of Retail e-Commerce Dollars Spent Through Mobile (BI Intelligence)



### Creating direct connections and customer loyalty

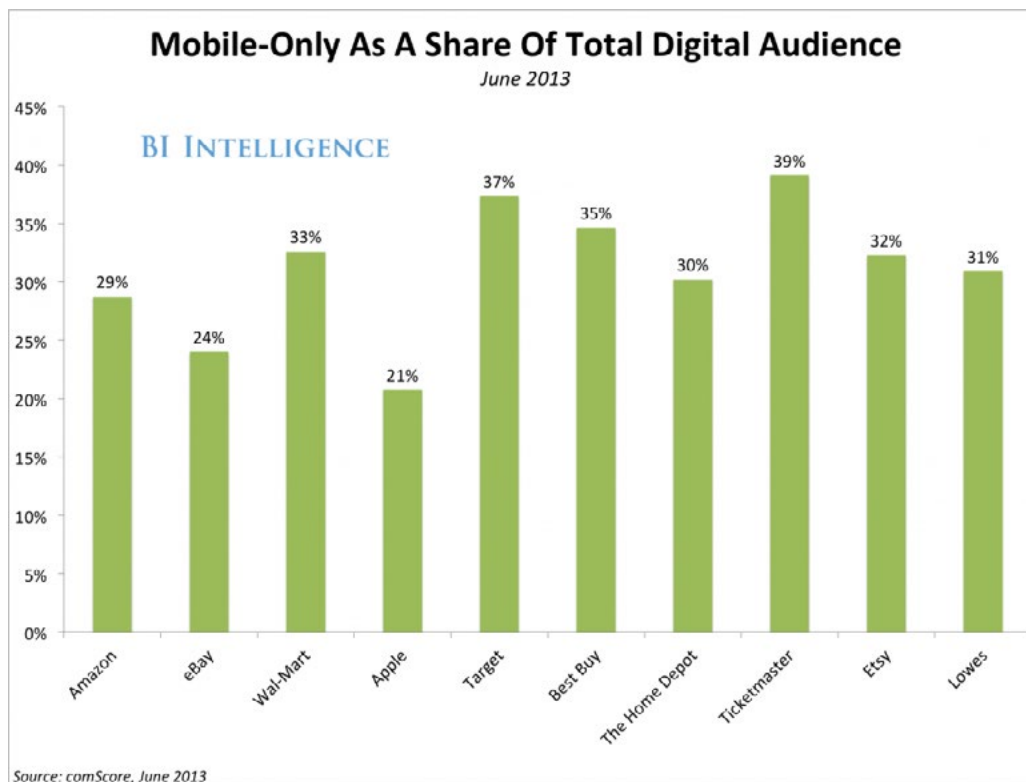
All kinds of brands are realizing that they have an opportunity to improve customer loyalty with personalized and customized experiences.

Nike is a great example of a multinational corporation that has found innovative ways to make direct connections with customers and expand beyond its traditional business. Nike designs, develops, markets, and sells footwear, apparel, equipment, accessories, and services. Its Nike+ FuelBand app syncs information from a wristband to iOS and Android applications via Bluetooth and is a way for Nike to evolve the exciting possibilities of merging the physical and digital worlds and “gamifying” and socializing exercise routines.

High-end brands in particular are creating “clienteling” apps designed to fully personalize the shopping experience by providing the company’s sales associates with detailed customer preference information, including where the customer lives, what brand items they have purchased previously, and their preferences, among other things. The sales associate can then help the customer to find matching and coordinating items and accessories, choose new items that they will like, and avoid suggesting items that they would not want to see.



## Mobile-Only as a Share of Total Digital Audience (BI Intelligence)



### Better business process is better business

The pay off for U.K. grocery chain Morrisons' [“fit for the future”](#) strategy arrives in the form of efficiency gains in business processes as well as in increased customer satisfaction. By moving to digital—including tablet-based inventory systems—Morrisons can continue to satisfy customers while improving efficiency and allowing them to shift more staff to face-to-face customer support on the floor (not to mention eliminating errors and reducing costs).

Equipping employees with the same information that your customers have across channels enables them to support the multi-channel experience as well as personalized shopping. Digitally enabling the physical components of your business—your inventory—with sensors and bar codes enables data and analysis for efficiency and productivity.



## Getting to Where Your Customers Are

How do retailers respond to customers doing business in new ways in today's hyper-connected world, where interactions and transactions are flattened by mobility? How do they effectively capitalize on mobile opportunities and keep pace with their customers, who demand engaging, entertaining, and information-rich experiences? How does today's enterprise find innovative ways to make direct connections with customers and expand beyond their traditional business models?

Key areas of success include finding ways to improve the customer experience across channels and leverage the social aspects of today's connected world to engage customers. Retailers will need to integrate information across multiple channels and effectively analyze the large amount of data generated to enable personalized and customized experiences, more efficient business processes, and insight that enables innovation and continuous evolution of products and services. Businesses need to find ways to improve processes and operations to drive the agility a business needs to execute a digital transformation, which will in turn drive revenues or increase productivity.

As companies leverage the latest forms of mobile and rich client engagement to build new experiences, apps have become the new retail channels. Apps have transformed from a means of content access and data entry to being the primary channels of interaction between a company and its customers and employees.

This shift has significant implications for enterprise architecture, which now must move from delivering Web applications as the primary interaction channel to powering interactions in a secure, performant, and data-leveraged way across multiple interactive touch points, of which the Web is just one.

So what is the technology stack to power interactions via apps for this new world? It comes down to a digital business platform—a stack enabled by three things: apps, APIs, and data.

Apps are the core constructs. Data is the currency. APIs bring apps and data together.

**“Our goal is to create shopping tools that become second nature to the customer, providing assistance with every part of the retail experience from pre-store planning to in-store shopping and decision making to checking out.”**

--Gibu Thomas, global head of Wal-Mart's mobile division

[Wal-Mart Puts Its Faith in Big Data for Mobile Strategy](#) (May 2013)



### Out-of-the-box monolithic architectures: That was then . . .

At one time, the ecommerce technology stack was fairly uniform. It was an out-of-the-box monolithic architecture that combined content, interactions, and business logic, and it came in the form of a single-sourced product sold by companies like ATG/Oracle or IBM. You poured your Web pages into it, you put your product catalogs into it, you hooked it up to your payment system, and you had a Web store.

There's a significant challenge that crops up when attempting to couple apps directly to the traditional ecommerce stack. There's a completely different set of assumptions for internal clients of the ecommerce system that does not fit with the preferred architecture of modern mobile and HTML5 client apps or with highly scalable web tiers using elastic cloud capabilities.

Traditionally IT assets were expensive. Today cloud technology provides relatively inexpensive computing assets by comparison.

### Digital business platforms: This is now . . .

The online channel of yesterday (a company's Web site) has exploded into multiple digital channels today (apps). Today's leading businesses are building digital value chains to augment or replace their prior physical and web-based value chains used to connect customers, partners, and employees. Apps are the core constructs of the new digital business platform, enabling interaction and communicating with core systems to enable transactions.

The smart CMO is now innovating through apps—Web, mobile, and social—and tasking internal developers and external interactive agencies to deliver on these. In order to execute with agility, IT departments need an API platform that can power new applications that must be built in weeks or even days with the scalability and stability that they previously were given months and years to architect for.

API and app-enabled business represent good news for the CTO and CIO when it comes to cost of ownership and agility. In the old models, a business had to wait for the desktop website to be code complete before they could proxy or transcode it. For a business to be truly omnichannel, it is deploying multiple apps—each with their own cost and development timeline. By separating data and presentation layers, it is possible to make huge savings in both time and cost by focusing on the presentation requirements of each app or channel and reusing the same data via APIs. This approach is also more agile as it allows parallel development of new features across different apps, significantly reducing the time and cost required for deployment.

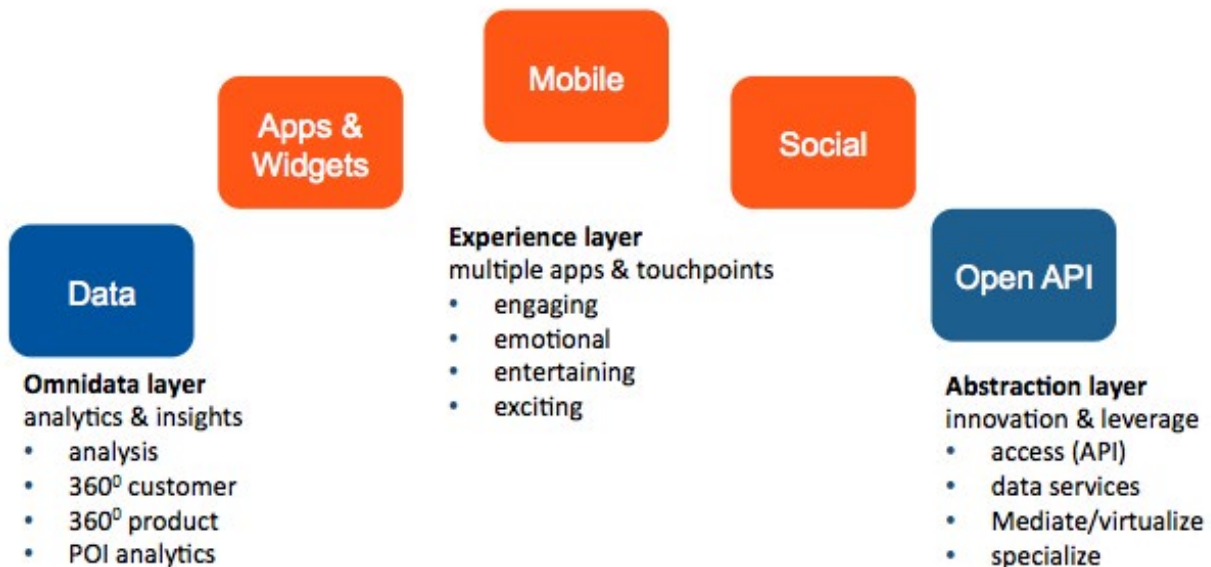
This new world of mobile, social, and data means that the interaction and experience is just as important in ecommerce as the transaction—or even more so.

Apps include many facets of social engagement. Through location-aware and social apps, retailers provide customers with access to store locations, online and in-store pricing and inventory, and more. Increasingly, product catalogs and other backend resources are available to third parties to enable partners and developers to innovate and write new apps. Apps are the primary drivers of new customer experiences and engagement, the engines of business innovation, and the extension of a brand.





Digital business platforms support new customer experiences, innovation, and data-driven business



Some challenges ecommerce providers face in evolving their digital businesses:

- **Powering a digitally enabled customer experience**  
Enable the flexibility to support and provide a consistent experience across different kinds of apps, from websites, to mobile apps, to embedded widgets
- **Powering applications at scale**  
Transformed businesses are getting data from interactions (including customers, carts, and content); out of legacy systems of record; and from closer to where their customers and partners are doing business with the company.
- **Embracing the scalability and availability of the cloud**  
Leading businesses are deploying their APIs across data centers, in both public and private clouds; in this way, core systems can be kept close to home while fanning out commerce apps to get closer to the customer



## Enabling seamless experiences through apps

### Apps are where your customers are.

Customers are doing business with companies using different kinds of apps, from websites, to mobile apps, to embedded widgets. Retailers must power the flexibility to provide consistent, engaging, emotional, entertaining, and seamless experiences across multiple channels. It is no longer enough to simply deliver responsive interfaces. Today's applications need to be customized to context-of-use and device—without sacrificing complete content coverage.

**“As more Americans use their smartphones while shopping and making purchases directly through apps, retailers should consider personalizing their targeted offerings around the needs of individual consumers.”**

-- Don Kellogg, director of telecom insights at Nielsen (Aug 2012)

Research from [Forrester](#) finds that when it comes to building loyalty, people respond more to the experience they have with the retailer than with their perception of price.

While designing and delivering new digitized products and services is important, most retailers are also faced with how to make the capabilities and services that they've already built on legacy technologies, available in this new agile market place.

Smart retail businesses that are innovating through Web, mobile, and social apps are tasking internal developers and external digital agencies to deliver fast tactical solutions.

Enabling those fast solutions require enterprises to provide:

- **Tools that enable developers to build better apps**

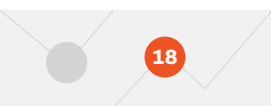
Success of the mobile apps that extend a brand and a business depends on engaging users and building a five-star reputation. Give developers and partners an API to help them build the features that innovative and successful apps need: user management, push notifications, social graph, news feeds, geo-location, and more.

- **Short time to market for your apps**

Modern apps require data services that your back-end infrastructure may lack. Let your developers start building without having to stand up an internal database by providing a mobile backend-as-a-service (mBaaS) infrastructure.

- **An easy to use and comprehensive API**

An intuitive API is key to making the capabilities and services that have already been built on legacy technologies available in this new digital world. In addition, developer portals and forums are hugely important for optimizing developer experience. But that's not enough. Provide your developers and partners with the features their apps need—as part of your API.



- **PCI compliance**

It is critical to process customer and payment data in a legal and secure way. Payment Card Industry's Data Security Standard ([PCI DSS](#)) defines the standard for securing cardholder data. Businesses must be able to easily tap the vast, affordable compute resources of the cloud to support their transactional API traffic with the confidence that all sensitive customer data remains protected.

### Getting agility and scalability through APIs

**Apps are powered by APIs.** As ecommerce moves from websites to mobile devices and apps, APIs are no longer just the sockets through which transactions pass, but are the primary tools for data collection and analysis, as well as the enablers of agility for the lines of business.

The enterprise applications ecosystem is no longer solely the domain of enterprise IT. Lines of business are increasingly demanding solutions at the speed and agility required to be successful in this new marketplace. Internal and external developers, partners, digital agencies, and others use APIs to build apps and power business partnerships involving expanding distribution and broadening market reach.

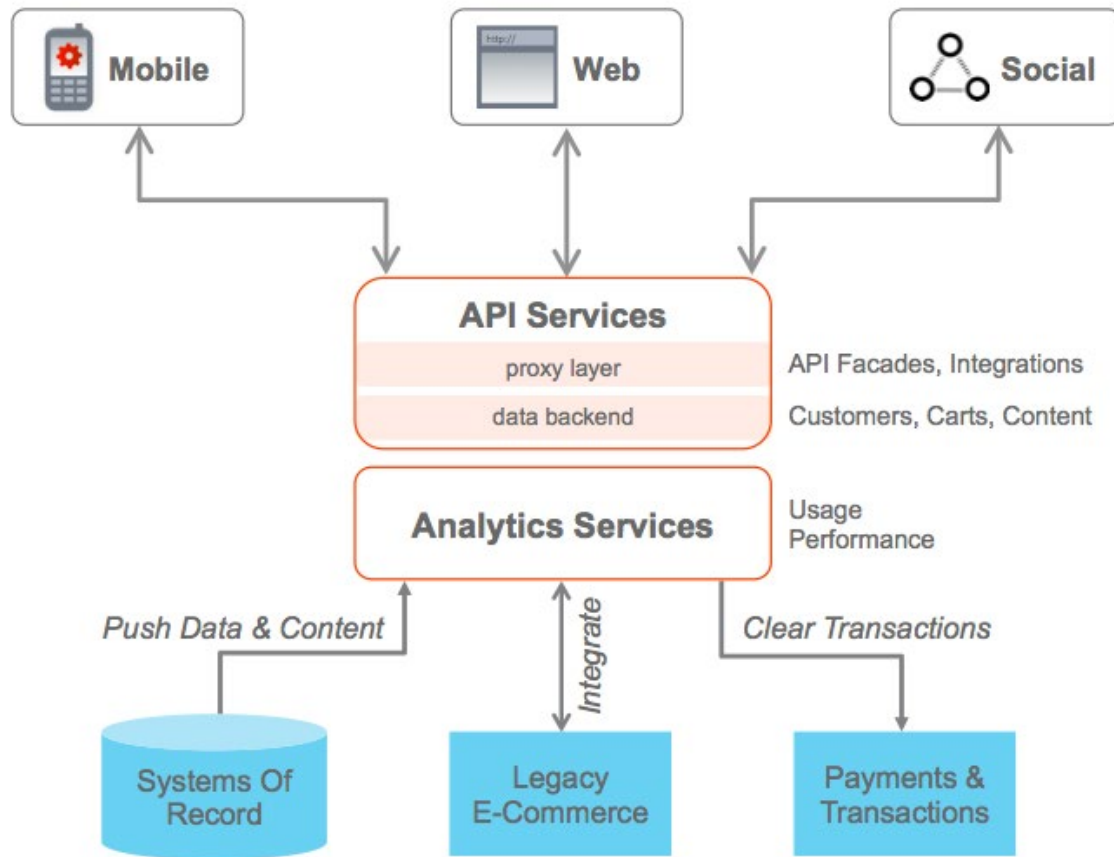
Today's retail is real time. Real-time comparisons are being made—if not by you, by your customers, all the time. The importance of having frequent stock, price, and promotion data available consistently across all channels and applications is key to retailers' competitiveness. Much of this data comes from legacy systems and is pushed around the ecosystem in flat files or even more manual processes that can disrupt the customer and sales experience.

For modern websites, mobile apps, and social widgets to communicate effectively with back-end systems, and to prepare for fine-grained targeting of offers and prediction of all aspects of their retail business, retailers who are leading in the race are exposing their data and services, and evolving legacy ecommerce platforms via APIs.

Making it all work demands that the lines of business like marketing organizations align closely with the technical and IT organizations.

Shifts in data and cloud technology are helping to facilitate this evolution in architectures in retail and other businesses, because more companies have ready access to new technologies and therefore to the necessary architectural components. Forward-looking IT departments are establishing long-term solutions by extending existing architectures with an API platform designed for the cloud, performance, security, and scalability.

## API-enabled commerce enables numerous front-end to back-end systems



The goal of an API tier is to allow a large number of apps—from partner channels or new app teams—to access content and data from internal systems. Commerce built on an API infrastructure provides a layer of common connectivity services, protecting core systems from the chattiness of millions of daily interactions while performing authentication, authorization, and data services through standard protocols. API-enabled commerce infrastructures provide the following key capabilities:

- Modularity of common objects including customers and shopping carts**  
 Most ecommerce sites have a set of common application objects, including customers, shopping carts, and catalog content. Historically, this information was stored in a database, which required drilling into the stack every time data was requested. Today, as line-of-business teams as well as partners and external developers are building apps, the data are generated by apps and activities at the edge of the enterprise—in the interaction layer. Objects are placed in the API tier for performance; a store locator can function faster if it doesn't have to call back to a database to retrieve locations. Objects in an API tier can be pre-built for ease of implementation, but are customizable for specialized needs.

- **Fast access to frequently used data**

Frequently accessed data are cached, mitigating downstream processing needs. Frequently requested data such as price and availability of inventory is essentially pushed to the edge of the business infrastructure, allowing customers to interact through smart caches, avoiding slow, costly requests to back-end systems of record.

Standard communication protocols, security handshakes, and authentication are all handled at the edges of an organization, without overtaxing or compromising core systems. Only when a transaction happens do core systems become active.

- **Customizable rules of business**

Data can be validated or processed with lightweight logic and combined from or distributed to multiple sources and services as necessary. By placing business rules in the API tier, decisions about who sees what information can be executed faster than if that functionality is buried farther down in the stack. Packaged, customizable business rules for access control and interaction flow are centralized at the API tier, allowing them to be enforced consistently and changed in one place.

- **Expert analysis**

Implementing a web site or commerce site today without deep analytics would be unthinkable. The same is true for APIs. The API is the application interaction channel representing both interactions and transactions and therefore deep business-level insights. As a consequence, every user interaction performed on an app results (often in a one-to-one mapping) in an API request whose payload is rich user activity data. This includes the interactions that do not result in a transaction. When analysis happens close to the customer—where the interactions happen—there is faster and more accurate analysis, while core systems are protected from the associated traffic influx.

For any type of app, being able to collect and analyze this data in a single place at any level of scale is an incredibly powerful capability. For customer-facing apps, this is game changing. When implemented correctly, all customer interactions, whether via Web, social, or mobile mechanisms, will pass through the API tier, which provides the single point of access where insights into customer activity across all touch points can be measured.

- **Speedy, secure transactions**

When the customer makes a purchase, pays a bill, or completes any other kind of transaction, the handoff to core ecommerce systems must be seamless and fast. API-enabled commerce can benefit from prebuilt connectors to common platforms such as ATG Web Commerce, IBM WebSphere Commerce, Elastic Path, and RedPrairie/Blue Martini. These kinds of connectors allow the conversation around the transaction to happen closer to the customer (in the API tier) instead of pinging the system of record for every request. These transactions need to be done securely within a compliant environment. Enabling direct interactions via APIs with payment providers is a key requirement of modern commerce systems.

## Gaining business intelligence through contextual analytics

Businesses live and die by business intelligence. Contextual analytics is basically predictive analytics, applied contextually. Often analytics is thought to mean just the operational analytics used by an IT operations team to ensure the health of the system or to audit its usage. However, with an API tier for commerce in place and as we deal with greatly expanded usage, we realize that there is a much larger set of things to measure.

Software touches nearly all social and commercial interactions and transactions, generating data of unprecedented scope. Understanding the full context of your customer and using the power of predictive analytics is key in determining not only where your customer is, but also where they are going. Businesses now have new tools to gather critical data about how their partners and customers use their products and services, and, thus armed, can optimize how they serve their customers.

Every interaction generates data and with the rise of social media (likes, dislikes, and shares) customers are signaling more and more context and intent than at traditional point-of-sale transactions. When retailers can capture or trap those intents and do something with these data, they have a force multiplier for their business.

**APIs are not just about data capture.** They are a two-way communications mechanism and can influence the “next best action” for consumers and help retailers realize those individual and personalized experiences for customers. Illustrating the power of real-time triggers, imagine a customer is identified by in-store WiFi, which triggers a push notification to deliver a welcome back message with a special offer.

**Data and analytics provide a 360-degree view of a customer.** What other sites did visitors browse? Where else did they shop? What have they purchased on previous visits? Is their behavior different in a physical store versus online? How much do they tend to browse before buying? How much time elapses between the first time they look at an item and the time they purchase it? How many channels do they use to research products?

**Knowing the customer in all channels is key to creating a rich customer shopping experience.** An API is the way to collect these data. Businesses can try to put hooks in websites and other individual points but will get incomplete views of customers. On the other hand, if businesses architect a solution in which they put an API between all their customers' touch points and the back-end systems of record, they will have a centralized way to capture information—a

**By leveraging big data, WalMart is developing predictive capabilities to automatically generate a shopping list for customers based on what they and others purchase each week.**

[Wal-Mart Puts Its Faith in Big Data for Mobile Strategy](#) (May 2013)



common gateway that can “listen in” on all touch points. With an API is the place to collect data internally, data scientists no longer worry about “stitching” data together from internal systems, and instead can focus their efforts on the data from outside their systems of record, such as environmental information beyond transactional context, This can enrich the internal data.

**APIs are not just about data capture. They are a two-way communications mechanism and can influence the “next best action” for consumers. This helps retailers realize those individual and personalized experiences for customers.**

The amount of data generated by customer interactions can easily overwhelm transactional systems. But not all interaction data needs to make its way down the stack to the systems of record. Only transactions that initiate business logic in a core system need to go to the backend. Interactions like click-through rates or abandoned shopping carts do not.

## Conclusion

As the main work of ecommerce moves from websites to mobile devices and apps, retailers see apps as the new channels and the venue of conversations with partners and customers. APIs are no longer viewed as a socket through which transactions pass, but as the primary venue for data collection and analysis. Monolithic ecommerce systems that bundle all the pieces to present a website, product catalogs, pricing rules, and commerce transactions (along with a built-in application server) are evolving and becoming new, API-based architectures to meet the requirements of today's customer.

Evolving a digital platform strategy is the defining characteristic of the new digital business, and it's proving to be the only way to create a sustainable competitive advantage in today's connected mobile world. Through digital retail ecosystems, enterprise IT can take advantage of

**“On enterprise KPIs including revenue and customer satisfaction, the leaders at deploying apps, operating APIs, and using data analytics dominate past out-performance and expectations for high impact from digital in the future.”**

[Apigee Institute Survey | Special Report KPIs, Conviction, and Competitive Advantage](#)

the next generation's opportunities, where the customer experience is the driver and the action is at the edge of the enterprise.

Apps are the new constructs, APIs are the connectors, and data is the currency.

Retailers are leveraging the economics of the cloud by placing the highly interactive pieces of the architecture—the parts that handle dealing with tens of millions of users at high rates of interaction—out in the commodity cloud, where they are both cheaper to run and closer to the actual users.

Leading retailers are moving to a big data infrastructure where they can collect more data about customer interactions than any legacy ecommerce system enabled them to capture and store.

Leveraging an API tier, an enterprise can get as close as possible to customers without overwhelming back-end systems and slowing performance. They can enable agility and reduce cost of ownership to deploy new features across multiple applications, supporting customers and partners confidently, regardless of the mode of access. The noise of interaction is separated from transactions, and the scalability and flexibility of the cloud fulfill their promise for expanding ecommerce.

Leveraging an API tier retailers can build a digitally enabled customer experience, digitize business processes, and develop new business models for a digital world.





## 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 & Vodafone partner with Apigee to accelerate their digital transformations. To learn more, see [apigee.com](http://apigee.com).

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