Checkout Conversion INDEX™

SNAPSHOT FOR Q2 2018

47.7

Average Checkout Conversion Index (CCI) score on a scale of zero (worst) to 100 (best) for Q2 2018

2:25 MINUTES

Average time to check out from sites in Q2 2018 — 12 seconds faster than in Q1 2018

22.08

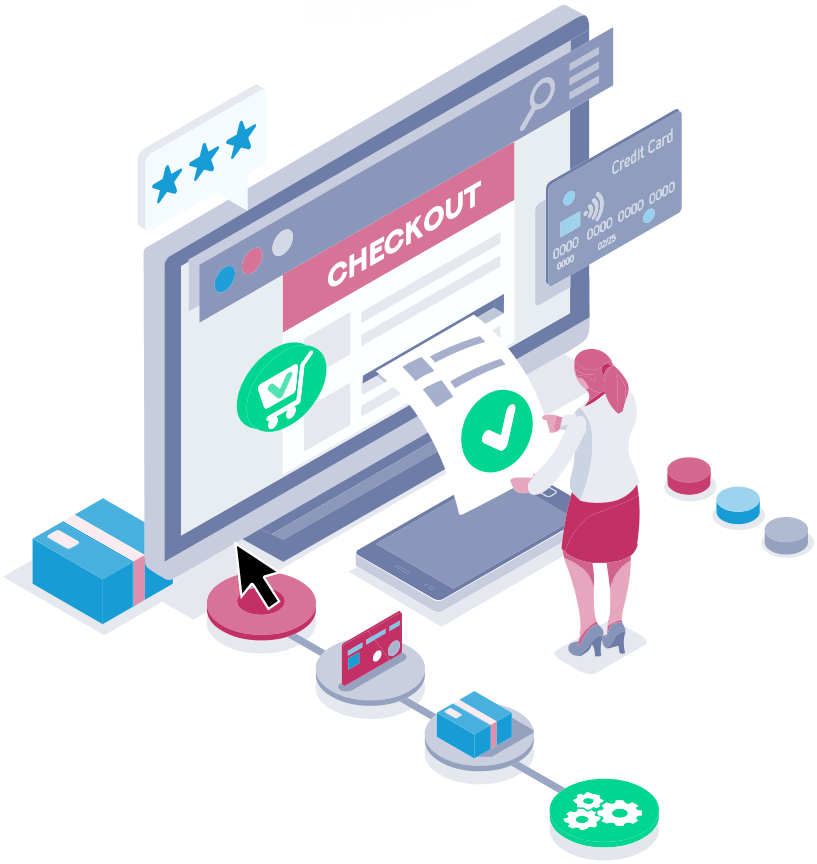
Average number of clicks to complete online and mobile purchases in Q2 2018 – 1.77 fewer than Q1 2018

Introduction

Consumers are practically attached to their smartphones. They spend nearly all of their waking hours with their mobile phones within arm's reach, using them to shop, browse or just check in on their social media feeds. In total, the average consumer now spends as much as 5 hours per day on a smartphone.

More importantly, almost everyone — about 86 percent of the adult population in the U.S. — owns a smartphone. It should, therefore, come as no surprise that consumers are increasingly using them to shop and pay for items and services. **In fact, 23 percent of consumers who own smartphones use them for purchases.**[1] As of 2017, mobile commerce accounted for 34.5 percent of all eCommerce sales — **a figure that is expected to reach 53.9 percent by 2021.**[2]

But one group in particular has embraced smartphones — as well as a number of other connected devices — to shop and to pay for products and services: the Bridge Millennials. These 29 million consumers, who are between the ages of 30 and 40, have grown up using connected devices, from laptops to desktops to smartphones. They represent the first generation of connected consumers with spending power. On average, they spend **as much as $2,225 per year on clothes, alone.**[3] Nearly **30 percent of Bridge Millennials use smartphones for purchases.**[4]



Naturally, these highly connected shoppers expect their eTailers to offer a seamless and frictionless shopping and payments experience when they use their phones to shop and to pay — putting pressure on merchants to go the extra mile to earn their business.

But as we have seen over the past several years of work measuring friction in online and mobile checkout, not all experiences are created equal. The

[1]How we will Pay: A week in the life of the connected consumer. PYMNTS. 2018. https://www.pymnts.com/how-we-will-pay/. Accessed November 2018.
[2]Author unknown. Retail sales projected to grow between 3.7% and 4.4% in 2018. Retail Touch Points. 2018.https://www.retailtouchpoints.com/features/news-briefs/retail-sales-projected-to-grow-between-3-7-and-4-4-in-2018. Accessed November 2018.
[3]Connected Consumer: How consumers shop and buy clothes. PYMNTS. 2018. https://www.pymnts.com/consumer-insights/2018/bridge-millennials-physical-retail-future-online-clothes-shopping/. Accessed November 2018.
[4]How we will Pay: A week in the life of the connected consumer. PYMNTS. 2018. https://www.pymnts.com/how-we-will-pay/. Accessed November 2018.

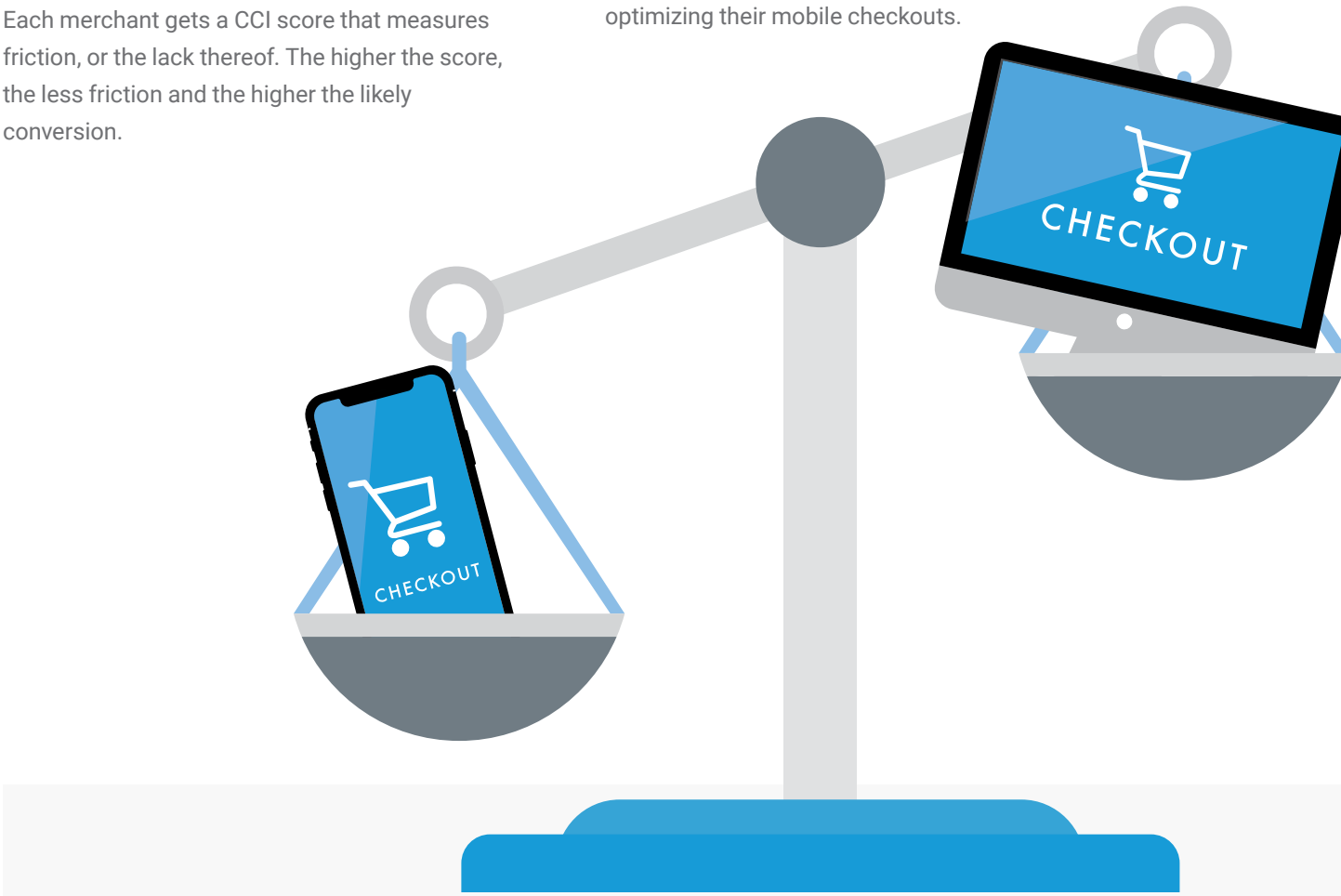
Checkout Conversion Index ™ measures the consumer journey, from the moment a consumer lands on a merchant's home page until that customer checks out. We analyze 70 such attributes from a random sample of 673 merchants that collectively account for 73 percent of eCommerce sales in the U.S.

Our interest then, as now, was to understand what makes a great checkout experience — great as defined by increasing the probability of transforming customers from browsers to buyers at checkout. We examine the checkout experience online via desktop, mobile browser and app — and, in the process, collect 12,000 data points to home in on what really matters. Each merchant gets a CCI score that measures friction, or the lack thereof. The higher the score, the less friction and the higher the likely conversion.

In Q2 2018, our sample's overall CCI score measured in at 47.7 — slightly lower than last quarter's average of 48.2 but not significantly so, indicating that, as a whole, merchants' online checkout processes are about as frictionless as they were last year.

That said, we saw several variations in the CCI scores of merchants across different industry segments.

First, there was a considerable increase in the CCI score of the worst-performing merchants' mobile checkouts, and this corresponded to an increase in their overall conversion rates. This demonstrates the increasing emphasis merchants are placing on optimizing their mobile checkouts.



Second, the desktop conversion score of bottom-performing merchants is continuing to decline, as it has for four consecutive quarters. While bottom-performing merchants have benefited from their efforts to optimize their mobile checkouts, they are not investing enough time or resources into optimizing their desktop checkout, as well.

In our Q1 2018 edition, we explored merchants' interest in mobile-optimized and app-based checkouts in depth. Now, in Q2 2018, we are seeing a growing share of merchants investing in optimizing their sites to reach their customers. Merchants' growing interest and investment in optimizing their mobile sites stems from customers' growing preference for browsing and shopping on mobile sites rather than downloading apps.

We are also witnessing a sharper focus on the implementation of friction-reducing features that enhance consumers' mobile shopping experience.

Having observed the evolution of retailers' online checkout features since Q4 2015, we were eager to see how recent technological innovations, specifically auto-fill forms and mobile optimization, have changed the way consumers shop online in the three years since we began studying them.

Mobile functionality is growing ever more prominent, with more merchants investing in mobile optimization than ever before. In Q2 2018, we observed a record number of merchants offering mobile-optimized sites, with a total of 659 merchants selling products via a mobile site, up from 646 in Q1 2018 and 636 in Q4 2017.

Meanwhile, the number of merchants offering a mobile app, which was measured at 150 in Q2 2018, has also increased since Q4 2017, when just 129 merchants supported an app. This also shows a slight decline from Q1 2018, however, when 158 merchants offered an app. This suggests that merchants are veering away from focusing on the app channel as they look to optimize their mobile channels.

As we will demonstrate, having a competitive checkout process means focusing on providing the features that go a long way in making customers' checkouts faster and smoother.

Checkout Conversion INDEX™

Where We Are In The Journey

Convenience is the name of the game

In Q2 2018, we identified 14 of the 70 features we studied that make or break the checkout experience and, hence, are correlated with a merchant's CCI score. Thirteen of these features appeared to increase alongside the CCI, while just one — the requirement to create and save a profile — often indicated a lower CCI. This is likely because creating a separate payment profile increases the time and effort it takes for a customer to make a purchase.

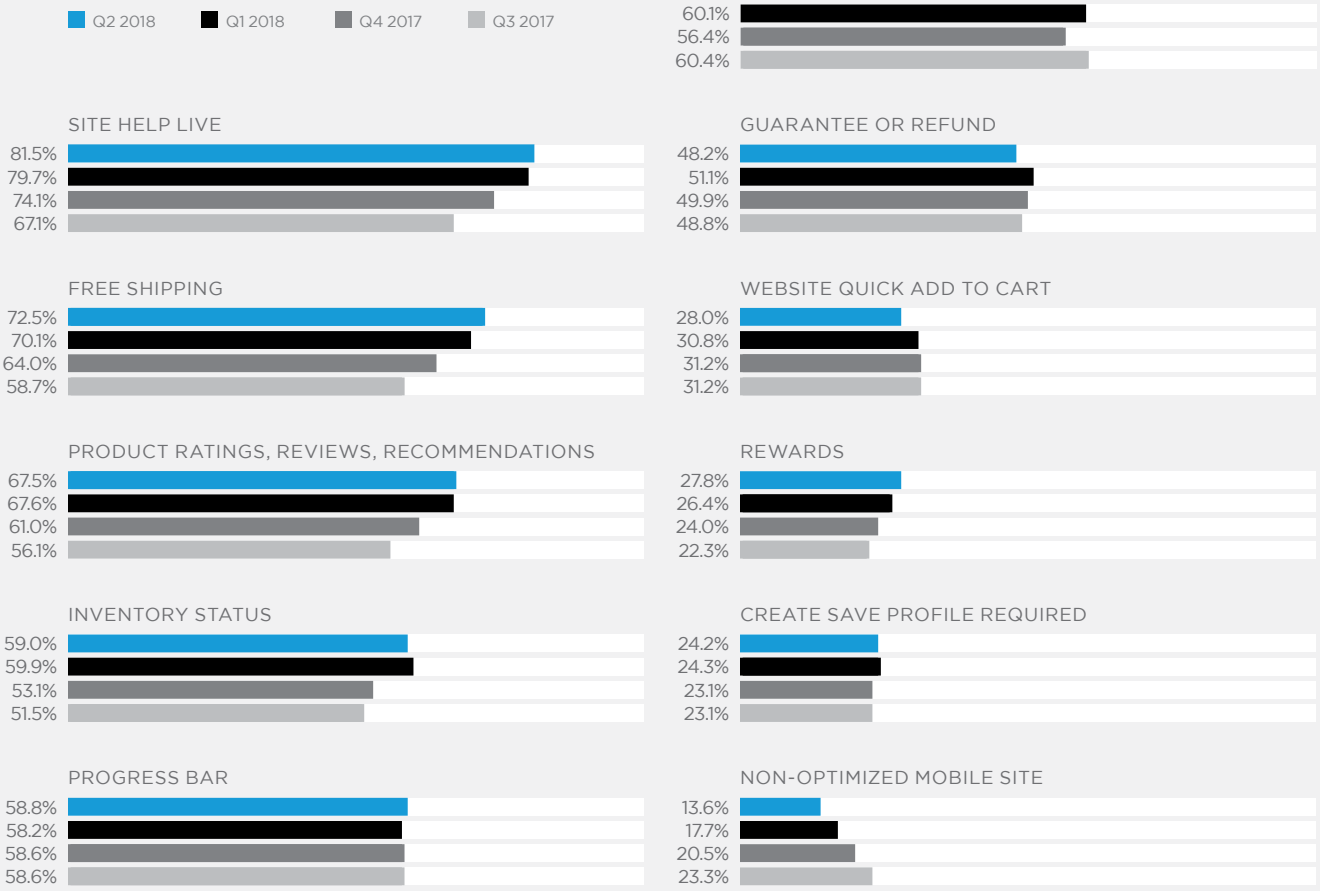
We also noticed that three of these CCI-boosting features have been growing steadily more common each consecutive quarter since Q3 2017. These included live site help, free shipping and product ratings and reviews. The share of merchants offering live site help steadily increased, from 67.1 percent in Q3 2017 to 81.5 in Q2 2018. Meanwhile, the increases in the shares of merchants offering free shipping and product ratings and reviews have followed a similar trajectory.

Interestingly, these three checkout features have been the most common since Q2 2017.

At the same time, the percentage of merchants who offer mobile version of their site has declined. In Q3 2017, 13.6 percent of merchants offered a mobile site, down from 23.3 percent in the previous quarter. This figure has decreased in every consecutive quarter.

FIGURE 1: Which checkout features merchants provide, and which they don't

Percentage of merchants who implemented select features, by financial quarter



Because these features tend to correlate with higher CCI scores, most of the Top Merchants in our sample — those whose checkout friction is the lowest — offer more of these features than their peers.

Sure enough, when we analyzed the performance of the 673 merchants in our sample, we saw that those with the highest CCIs were often those most likely to offer at least eight of the 13 CCI-boosting features. These included free shipping, quick add to cart,

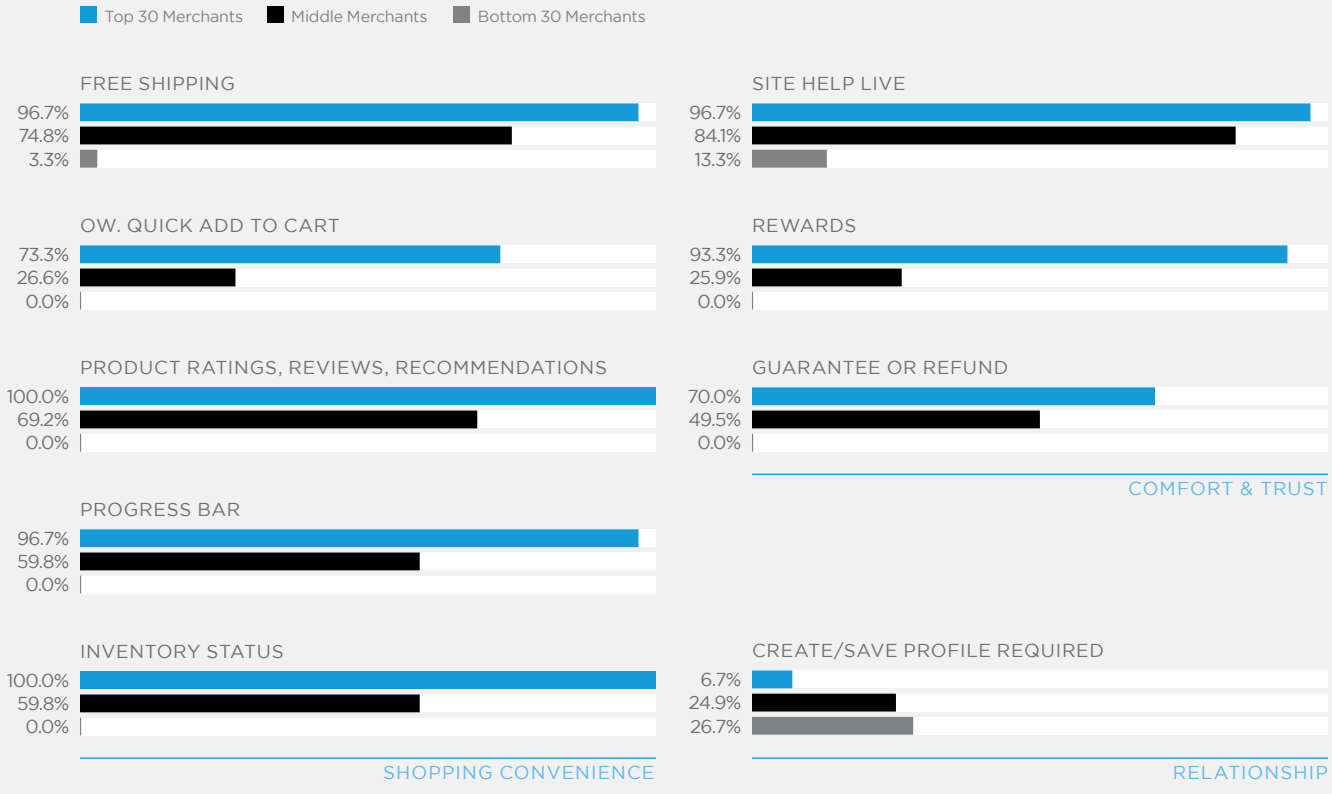
product ratings and reviews, progress bar, inventory status, live site help, rewards, and guarantees or refunds — features designed to enhance the consumer shopping experience, provide a sense of comfort and trust, and build upon the merchant-customer relationship.

When we analyzed implementation of these features across the 30 highest-scoring merchants, the Top 30, and the lowest-scoring merchants, the Bottom 30, we found that Top 30 merchants were far more likely to have implemented these features than the Middle and Bottom merchants. For instance, 96.7 percent of Top 30 merchants offered free shipping services, while just 3.3 percent of Bottom 30 merchants did. Meanwhile, 74.8 percent of Middle Merchants did the same.

When it came to implementing features that can help make shopping more convenient, there is a remarkable difference between Top 30 and Bottom 30 merchants. For product review and recommendation and inventory status features, the difference between

FIGURE 2: How Top, Middle and Bottom Merchants compare in terms of feature implantation

Percentage of Top, Middle and Bottom merchants offering select features, by financial quarter



Top 30 and Bottom 30 merchants was absolute, with 100 percent of the Top 30 merchants offering this feature and not a single Bottom 30 merchant doing so. For instance, 96.7 percent of Top 30 merchants offered a progress bar feature, while not one Bottom 30 merchant did.

Customers understandably dislike not being provided with basic product information. They expect details on a product's availability, whether other consumers have bought and liked it, and how far along a purchase is in the delivery process. Without that information, they appear to be wary of committing to the purchase.

Yet another measurement of shopping convenience that was correlated with a merchant's CCI score was time. The time it took for a customer to complete a purchase on a merchant's website was found to be negatively correlated with their index score. In other words, the less time it took to complete a purchase on a merchant's website, the higher the merchant's CCI score tended to be.

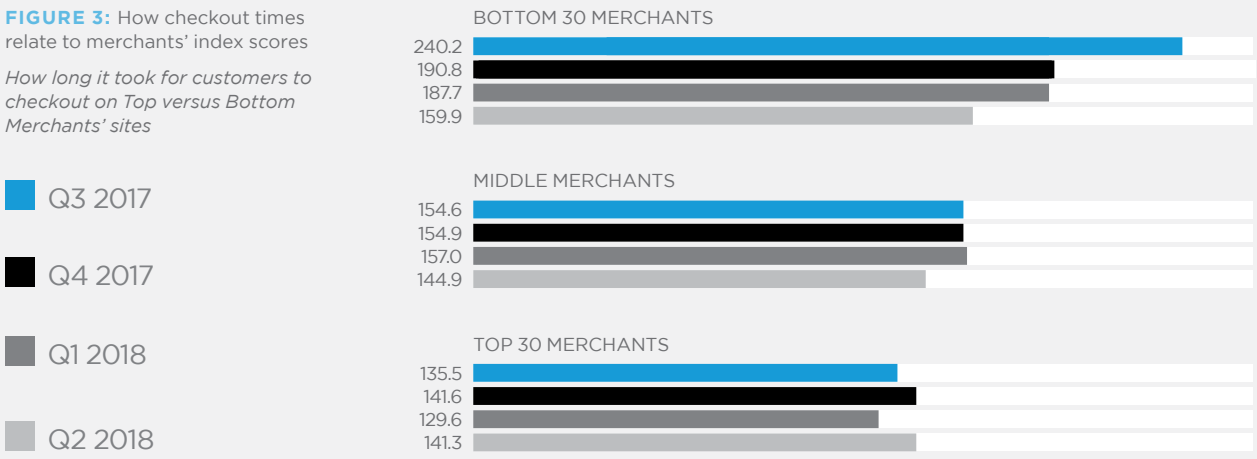
This relationship is evident when we compare the time it took for consumers to make purchases on the sites of Top 30 and Bottom 30 merchants. Since Q3 2017, Top 30 merchants have consistently offered shorter checkout times than Bottom 30 merchants, and Q2 2018 is no exception. In this quarter, it took customers an average of 141.3 seconds to make a purchase on a Top 30 website and 159.9 seconds to do so on a Bottom 30 website.

That said, the difference between checkout times on the sites of Top 30 versus Bottom 30 merchants is shrinking. It may have taken longer to check out on a Bottom 30 site than on a Top 30 site in Q2 2018, but in Q3 2017, it took even longer.

Finally, our analysis considered the number of payments merchants accepted, which was also shown to correlate with a merchant's CCI score. The more payment methods a merchant accepted, the more likely they were to be among the Top 30 merchants in our sample. On average, Top 30 merchants accepted 8.2 different payment methods in Q2 2018, while Middle merchants accepted an average of 6.5. Bottom 30 merchants accepted as little as 1.4, on average.

FIGURE 3: How checkout times relate to merchants' index scores

How long it took for customers to checkout on Top versus Bottom Merchants' sites



There are several reasons why merchants looking to reduce checkout frictions would be inclined to accept a wider variety of payment methods: It helps improve checkout conversion and, in turn, sales. After all, it does not matter how fast a checkout is or how many features a merchant provides if consumers cannot use their preferred payment method.

But offering a wide variety of payments options also endows merchants with a certain niche appeal, depending on the type of payment methods they accept.

Merchants who accept more payment methods enjoy higher CCI scores. But it's more than accepting a diverse assortment of payments that sets the Top 30 merchants apart.

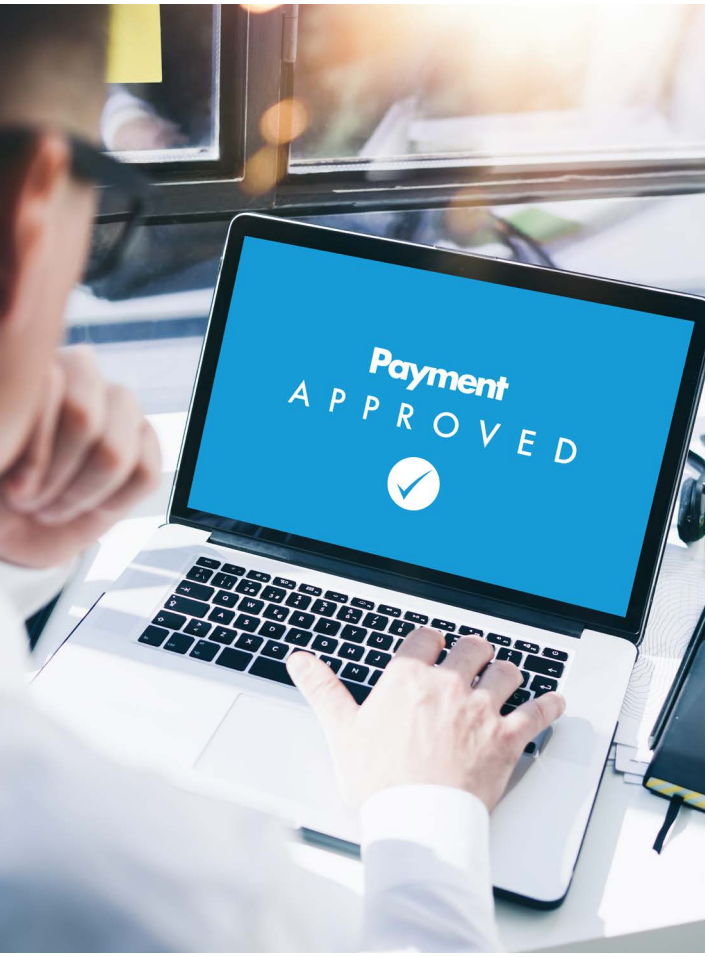
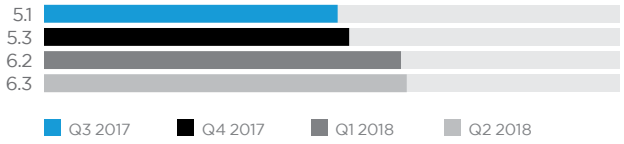
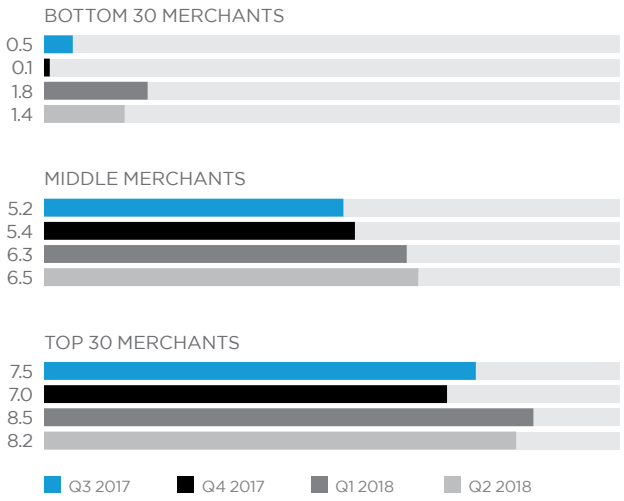


FIGURE 4: The number of payment methods accepted, over time

4a: *Average number of payment methods accepted by the sample, by financial quarter*



4b: *Average number of payment methods accepted by Top, Bottom and Middle merchants, by quarter*



Top 30 merchants, Bottom 30 merchants and the mobile channel

In the Q1 2018 edition of our Checkout Conversion Index™, we discovered that mobile optimization can lead to higher conversion rates. A growing number of consumers are doing more — including shopping — on their phones, rather than on their desktops or laptops. Now, in Q2 2018, our survey data once again demonstrates that, to turn browsers into buyers, merchants must streamline their mobile checkout process.

To begin with, we noticed that Top 30 merchants in our sample far outperform the Bottom 30 across both online and mobile channels. They also averaged a higher overall CCI score. In fact, the average score of the Top 30 merchants across all channels measured in at 81.2 in Q2 2018, while that of Bottom 30 merchants was only 8.3, meaning the Top 30 merchants' average index score was almost 10 times higher than that of Bottom 30 merchants.

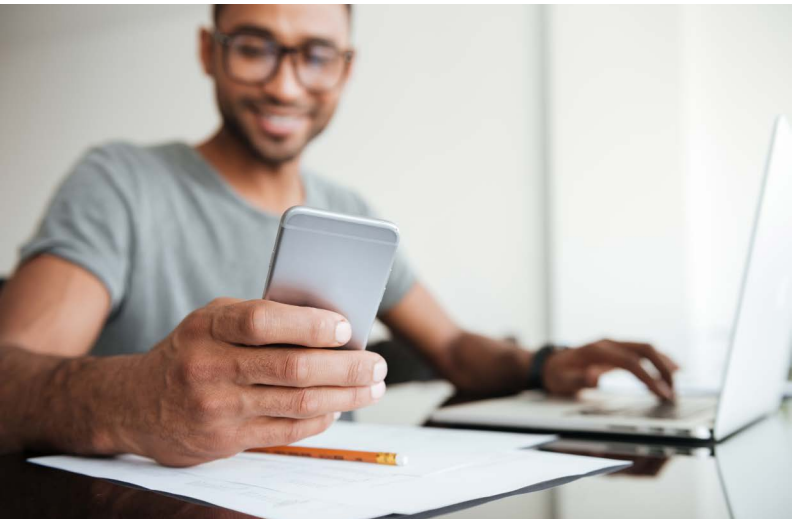
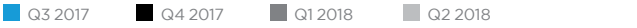
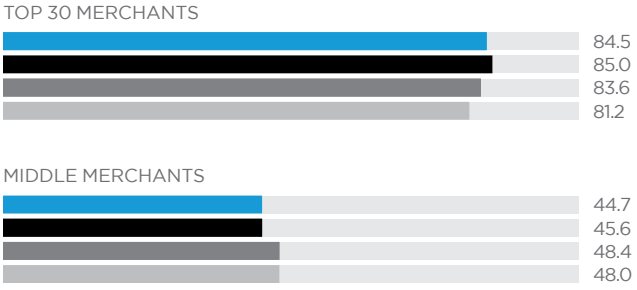


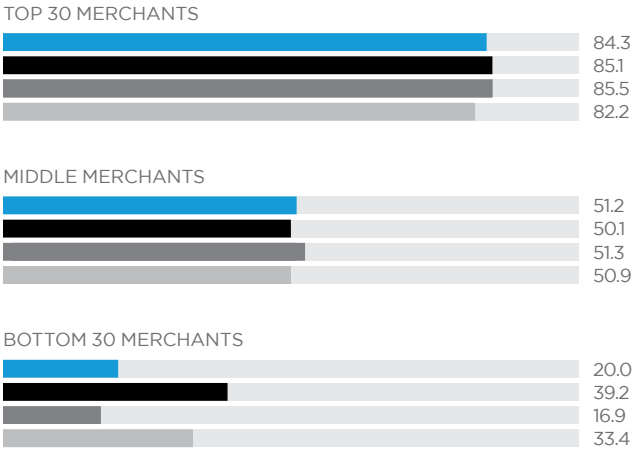
FIGURE 5: Merchants' overall index scores as a function of time



5a: *Average overall index scores of Top and Bottom 30 merchants, by financial quarter*



5b: *Average mobile index scores of Top and Bottom 30 merchants, by financial quarter*

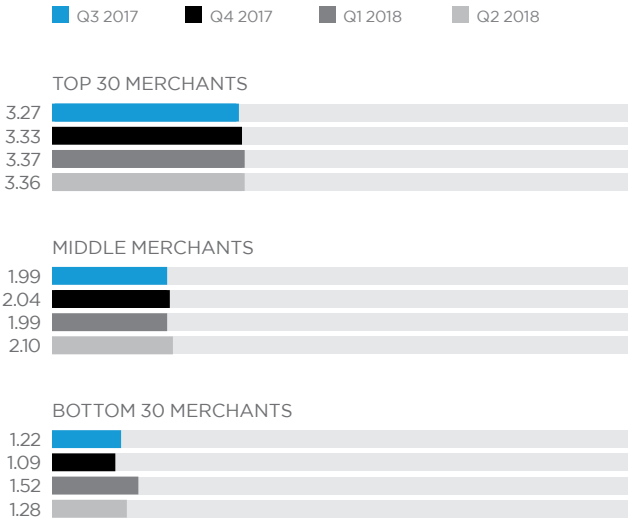


This actually represents an improvement in the average index score for Bottom 30 merchants. In Q3 2017, they averaged an overall score of only 5.6 — less than one-tenth of the score of the Top 30 merchants in that quarter. The gap between the best- and worst-performing merchants' index scores has been closing ever since, but Bottom 30 merchants still have a long way to go before catching the Top 30 performers.

Merchants usually offer more than one way for online shoppers to access their products. They typically support a standard desktop site, a mobile channel and occasionally an app. We took the overall performance of all three of these channels in the calculation of merchants' overall CCI scores, but we also calculated CCI scores for their separate desktop and mobile sites, as well, revealing several notable trends.

FIGURE 6: Conversion rates of Top 30 merchants versus Bottom 30 merchants over time

The average conversion rates of Top, Middle and Bottom merchants, by quarter



While the increase in Bottom 30 merchants' overall CCI scores has been stable since Q3 2017, the evolution of their mobile CCI scores has fluctuated. In Q3 2017, it measured in at 20.0. It rose to 39.2 in Q4 2017, then fell to 16.9 in Q1 2018 and finally reached 33.4 by Q2 3018. Meanwhile, as shown in Figure 5b, the average CCI score of their Top 30 counterparts remained relatively stable from Q3 2017 to Q2 2018, showing high-performers know what works and stick to it, resulting in relatively little change in performance over time. In contrast, Bottom 30 performers are inconsistent, and their checkout process varies considerably from quarter to quarter.

In any case, this inconsistency appears to have an impact on their overall conversion rates. Given the increase from 20.0 to 39.2 between Q3 2017 and Q4 2017, we estimate that their average conversion rate increased from 1.28 percent to 1.52 percent in that time. Meanwhile, Bottom 30 merchants' mobile CCI score dropped to 16.9 in Q1 2018, meaning that their estimated conversion rate dropped to 1.09. This pattern continued into Q2 2018, as well, with conversion rates rising and falling alongside a merchant's mobile CCI score.

This does not necessarily indicate that the mobile channel is more important than the desktop channel. In truth, merchants' mobile CCI scores are almost exactly as closely correlated with their overall CCI scores as their desktop CCI scores.

The reason the overall CCI scores of Top, Middle and Bottom merchants appear to be fluctuating with their mobile CCI scores, though, is simply because fewer merchants support their own mobile channel than support a desktop channel. Among the 673 merchant sites we studied in Q2 2018, just 659 offered a mobile site — a large portion, to be sure, but fewer than the number of those offering a desktop site. Moreover, this number has been steadily increasing, from 636 in Q4 2017 to 646 in Q1 2018 and, finally, to 659 in Q2 2018.

As more merchants launch their own mobile channels, or optimize their mobile channels, their CCI score conversion rates are changing. As we discovered in our Q1 2018 study, this fluctuation in conversion rates is a normal short-term result of mobile optimization.

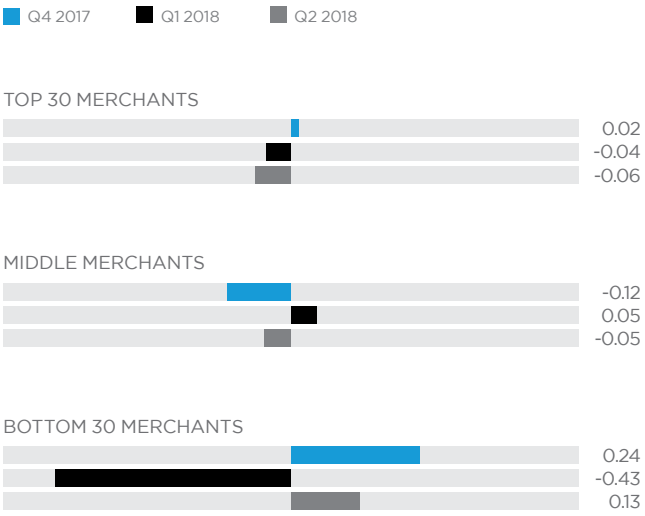
It takes time for customers to get reacquainted with their merchants' mobile sites after they have been optimized. This may lead to a short-term lag in conversion rates or CCI scores. In the long run, though, **adopting a mobile channel, or optimizing an already-existing mobile channel causes both to increase.**[5]

For eTailers, there's a key takeaway: To improve conversion rates, they must focus on making their mobile checkout process faster and easier, if they have not done so already. On the flip side, if a merchant already provides a mobile site, it is best to optimize it.

This does not mean, however, that the checkout process on the desktop sites is no longer essential.

FIGURE 7: Evolution of conversion rates over time

The average conversion rates of Top, Middle and Bottom 30 Merchants, by financial quarter



Grades

As important as the mobile channel has become, the desktop channel is just as important. Lest they risk driving away their consumer base, merchants must continue to monitor their overall shopping experience — and that includes making sure that their checkout processes are smooth on all channels, whether they be desktop-, mobile- or app-based.

For a closer look at how merchants' overall, mobile and desktop checkouts are changing over time, we broke them down into one of three groups, providing us with a broad view of how these three scores intermingle and how they tend to impact each other.

We divided merchants' data by quintile, assigning a

[5]Checkout Conversion Index, April 208. PYMNTS. 2018. https://www.pymnts.com/checkout-conversion-index/. Accessed November 2018.

grade to indicate those with the highest and lowest scores. The quintile with the highest average CCI score was Grade A merchants, and the quintile with the lowest was Grade F merchants.

This revealed several interesting trends. For one, it further validated our previous finding that the CCI scores of higher-scoring merchants are often more stable than those of lower-scoring merchants — at least when compared to the lowest scorers. As seen if Figure 8, the overall index scores of Grade F merchants, in particular, have varied widely since Q3 2017, not only in absolute terms but also in terms of percentages.

Between Q3 and Q4 2018, for example, Grade F merchants' average CCI score rose from 22.2 to 23.2, marking a nominal increase of 1.0 point, or a change of about 4.5 percent. Both of these values are greater than the absolute change seen across Grade A merchants during the same time frame. Their index score decreased by 0.4 points, or, by about 0.5 percent. This trend continues all the way through Q2 2018.

Not one quarter went by in which the change in the overall index score of Grade F merchants did not vary — either in terms of nominal value or proportional value. This demonstrates that the lowest-scoring merchants — the ones with the most frictions in their checkout processes — are consistently the most volatile in terms of checkout services.

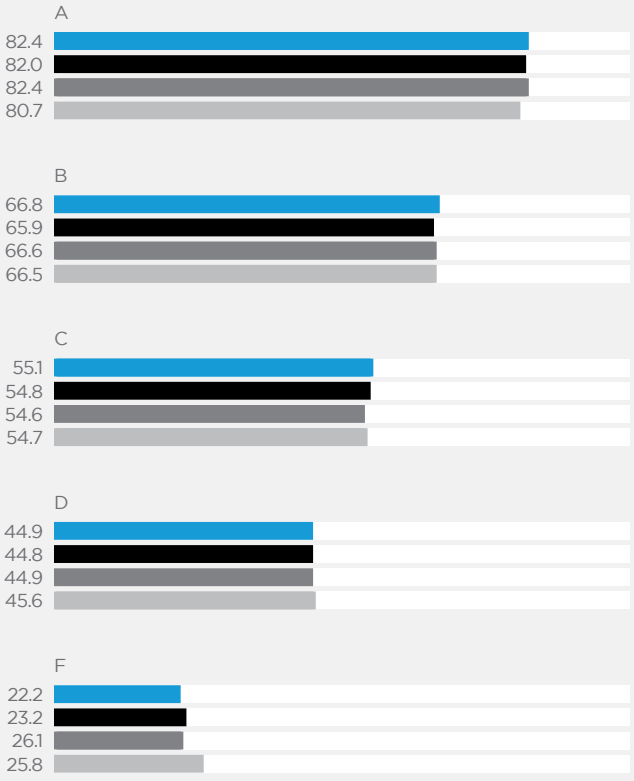


FIGURE 8: How merchants' overall CCI scores vary over time

Average index scores of merchants of different grades, by financial quarter

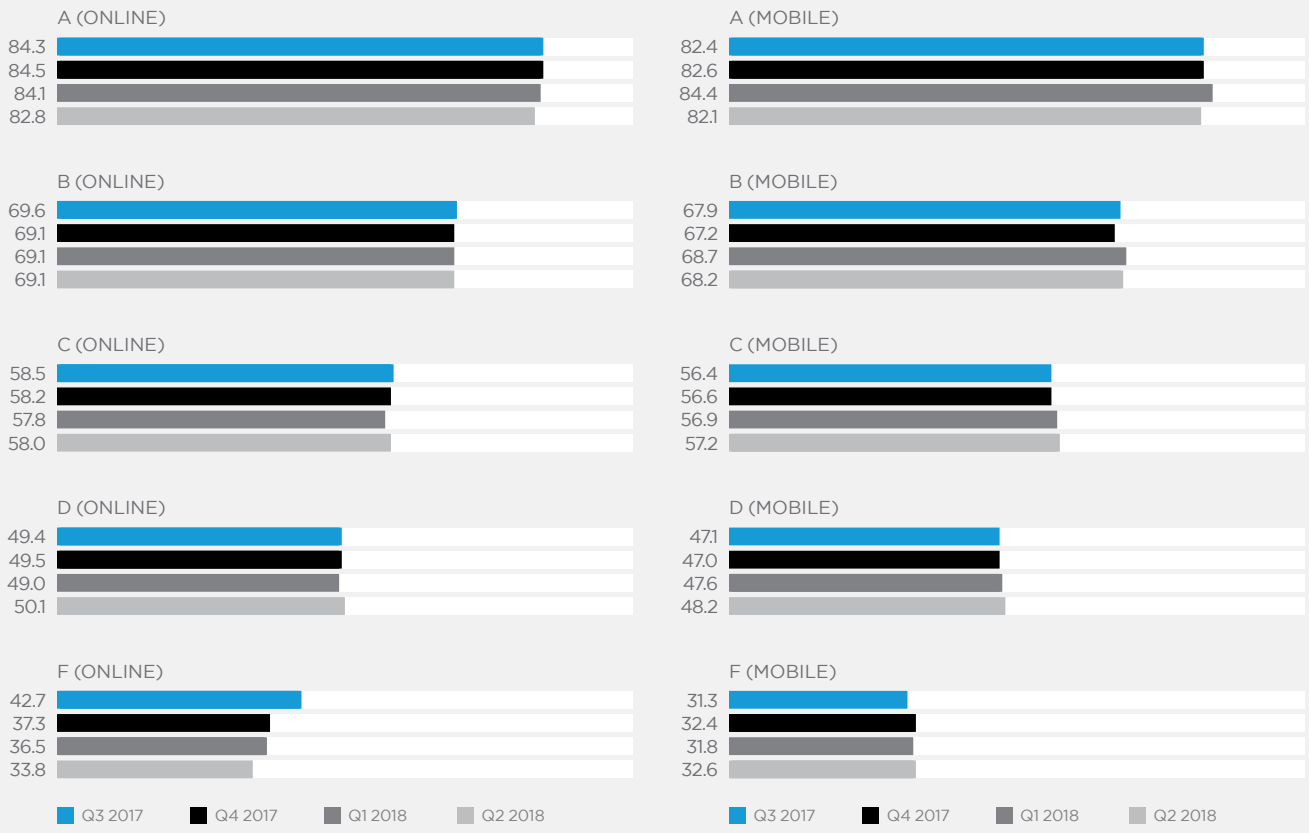
That is the "overall" view of the situation. If we look at their desktop and mobile index scores individually though, we notice that there was a disconnect between their mobile and desktop checkouts. Specifically, their mobile checkout scores were relatively stable, and their desktop scores had been continuously decreasing since Q3 2017.

Between Q3 and Q4 2017, their desktop CCI dropped 5.4 points — a 12.6 percent decrease in one financial quarter. Meanwhile, their mobile CCI score increased 1.1 point, or by about 3.5 percent. For Grade F merchants, there is a disconnect between the quality of the checkout processes on their desktop and mobile channels.

This also appears to be the case for other merchants, grades A through F — but not to the same degree. From Q3 2017 to Q4 2017, for example, Grade A merchants' desktop CCI increased, but their mobile

FIGURE 9: How merchants' online and mobile CCI scores vary over time

Average desktop and mobile index scores of merchants of different grades, by financial quarter



CCI decreased. Here, even though the scores changed in different directions, the respective differences were quite small: just 0.2 (about 0.2 percent), each. Similar cases may be made for the nominal and proportional changes for other merchants' online and mobile CCIs.

For Grade F merchants, neglecting their desktop checkout processes does not appear to have hurt their overall CCI score, which has increased since Q3 2017. But we also recall that, when it comes to conversion rates, Grade F merchants have been inconsistent.

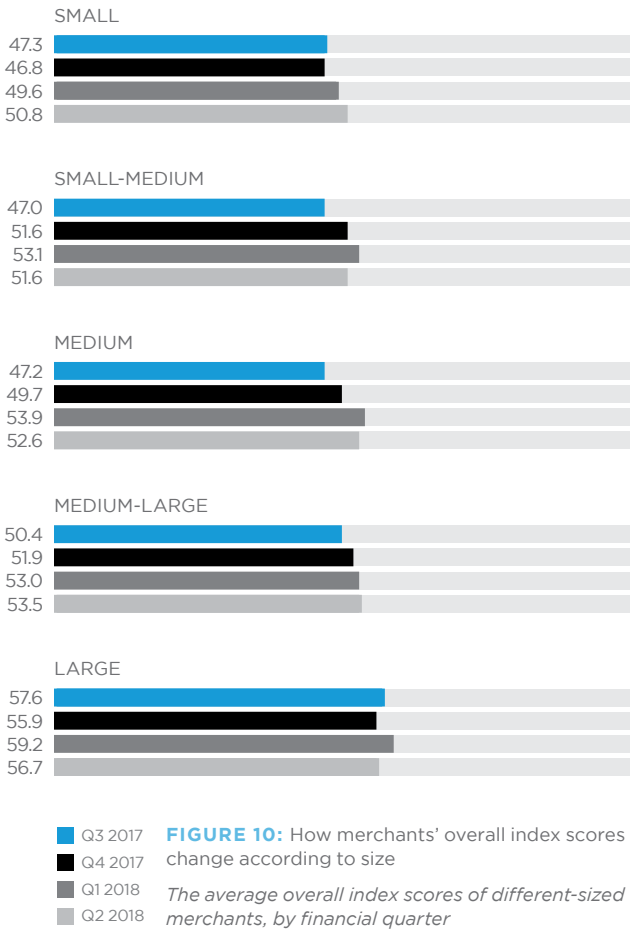


FIGURE 10: How merchants' overall index scores change according to size

The average overall index scores of different-sized merchants, by financial quarter

This suggests that having a smooth, convenient mobile checkout process is only one piece of the checkout conversion equation.

This data conveys a cautionary tale for eCommerce merchants that want to remain competitive in today's online marketplace: The mobile channel is more important than ever, but it's imperative to maintain an optimal desktop shopping experience, as well. eTailers need both to provide their customers with the seamless shopping experience they expect.

Merchant Size

As in previous quarters, our survey data showed a strong correlation between a merchant's size and their overall CCI score, with larger merchants generally enjoying higher scores than smaller ones.

That said, the difference between the average CCIs of the smallest and largest merchants was comparatively small. In Q1 2018, for instance, large merchants had an average CCI score of 59.2, and small merchants had an average score of 49.6.

This means that, even though larger merchants tend to score higher on the CCI, it is not uncommon for smaller merchants to achieve high scores, either.

FIGURE 11: Feature implementation rates among merchants of different sizes

Percentage of merchants who offer select checkout features, by size

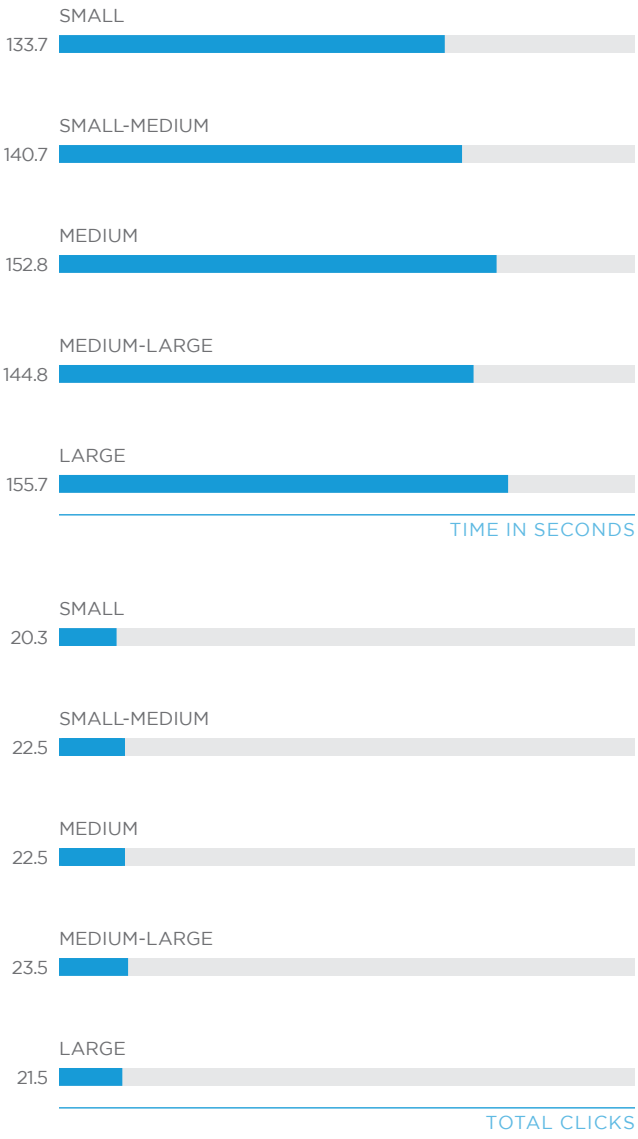
If merchants of similar sizes have similar CCI scores, then it would be reasonable to conclude that merchants of different sizes also offer checkout features in similar percentages.

Interestingly, though, larger merchants appeared more likely than smaller ones to offer several of the key checkout features. When it came to checkout services like free shipping, for example, 81 percent of large merchants offered it, but just 72.4 percent of small merchants did.

Meanwhile, some smaller merchants were more like to offer certain features, like product ratings and reviews, than larger ones. For instance, 83.5 percent of small-medium sized merchants offered ratings and reviews, compared to 73.7 percent of medium-large merchants.

FIGURE 12: Checkout times, in terms of seconds and clicks

Average checkout time, measured in seconds and number of clicks, by merchant size



Why do these different merchants have such similar CCI scores, even though their likelihood of having implemented these features varies so widely?

Larger merchants, who offer more checkout features, did have longer checkout times than smaller merchants, but not by much. The largest of them had an average checkout time of 155.7 seconds, while that of the smallest was 133.7 seconds, marking a mere 14.1 percent difference between them.

The number of clicks it took to complete a checkout was almost identical among different-sized merchants, too. Customers of small merchants had the fastest checkouts in these terms, having to click 20.3 times on average to make a purchase. Meanwhile, medium-large businesses had the longest checkout times, taking 23.5 clicks, on average. This is a difference of about 15.8 percent.

Compared to the variances in terms of the features these firms offer, these differences are rather minuscule, and they do not look as if they are enough to offset the effects of having such variability in terms of features.

What is causing this uniformity among merchants of similar sizes, then?

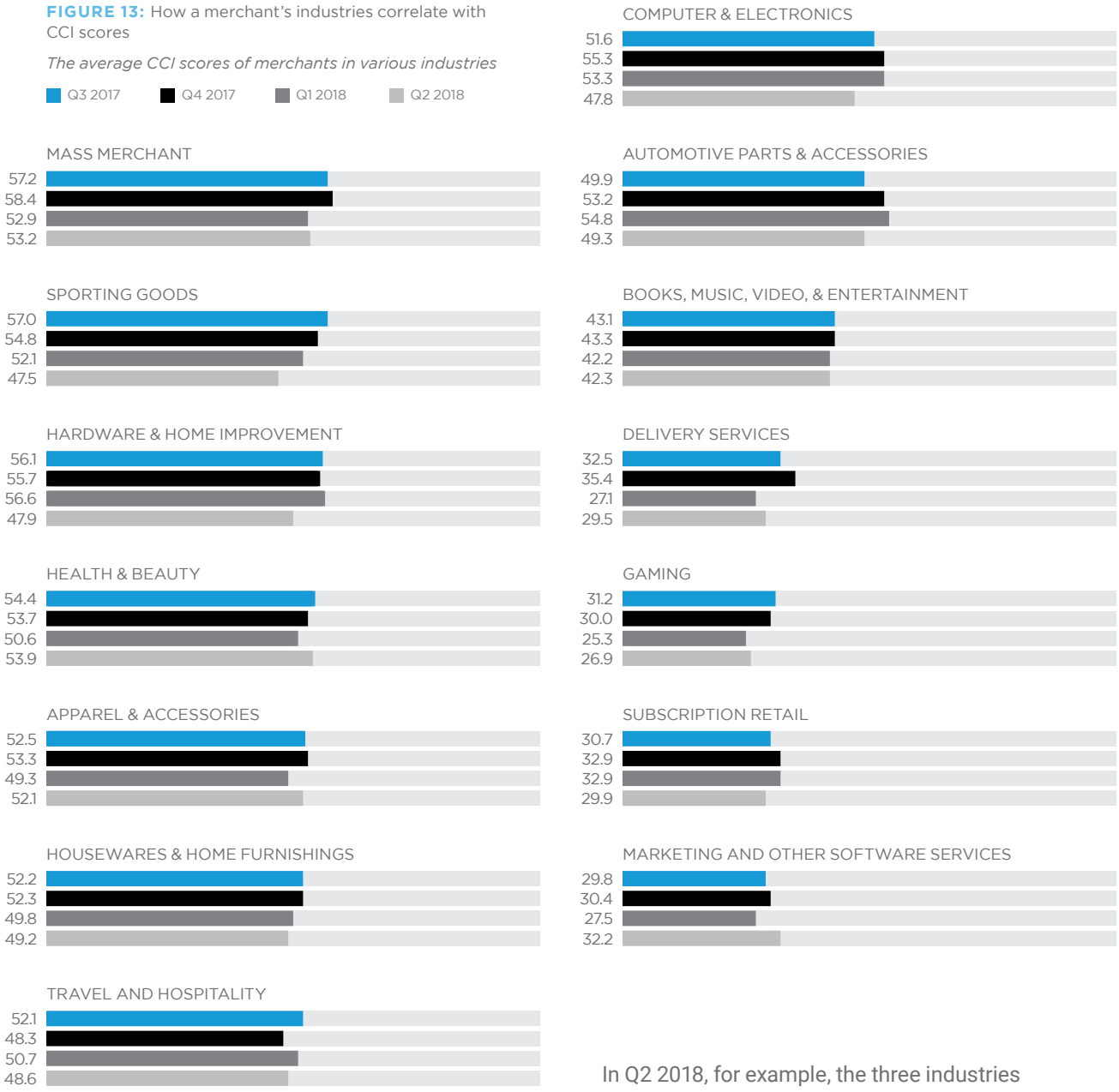
The answer may lie in other, underlying factors: industries and consumer preferences.

Industry

Modern consumers are an eclectic bunch. They expect far different services from retailers they frequent. Consumers go to online travel aggregators for long-term leisurely planning, electronics and gaming retailers for routine recreation and the mass merchants for basic necessities. And they expect different shopping experiences from each of these eTailers.

FIGURE 13: How a merchant's industries correlate with CCI scores

The average CCI scores of merchants in various industries



These varied expectations are reflected in the checkout experience offered by merchants of different types and sizes. However, even merchants in the same industry can vary widely, depending the consumer segment they are seeking to attract.

In Q2 2018, for example, the three industries with the highest average CCI scores were mass merchants, sporting goods and hardware and home improvement, which scored 57.2, 57.0 and 56.1, respectively. On the flip side, the industries with the lowest average CCI scores were marketing and other software services (29.8), subscription retail (30.7) and gaming (31.2).

This makes sense, as comparing businesses in different industries can sometimes be like comparing apples to oranges. The shopping experience is quite different, for example, for shoppers purchasing a tennis racquet versus a subscription plan. This is a phenomenon that we will explore in more depth in the Deep Dive section of this report.

By contrast, purchasing a subscription service usually requires shoppers to input far more than just their contact and card information. There may be different tiers of service, for example, or different subscription packages for consumers to review before completing their purchase. Moreover, when the purchase is made, the charges are recurring — which can be automated, depending on consumer preference.

That said, we also noticed that CCI scores were more consistent in certain industries than in others. This was particularly true of merchants in the computer and electronics, and the apparel and accessories industries. The highest and lowest merchant CCI scores in these two industries were farther apart than those in any other sector.

To be precise, the highest-scoring merchant in the computer and electronics sector scored 87.7 points higher the lowest-scoring among them. Meanwhile, the highest and lowest scores in the apparel and accessories industry were 76.4 points apart.

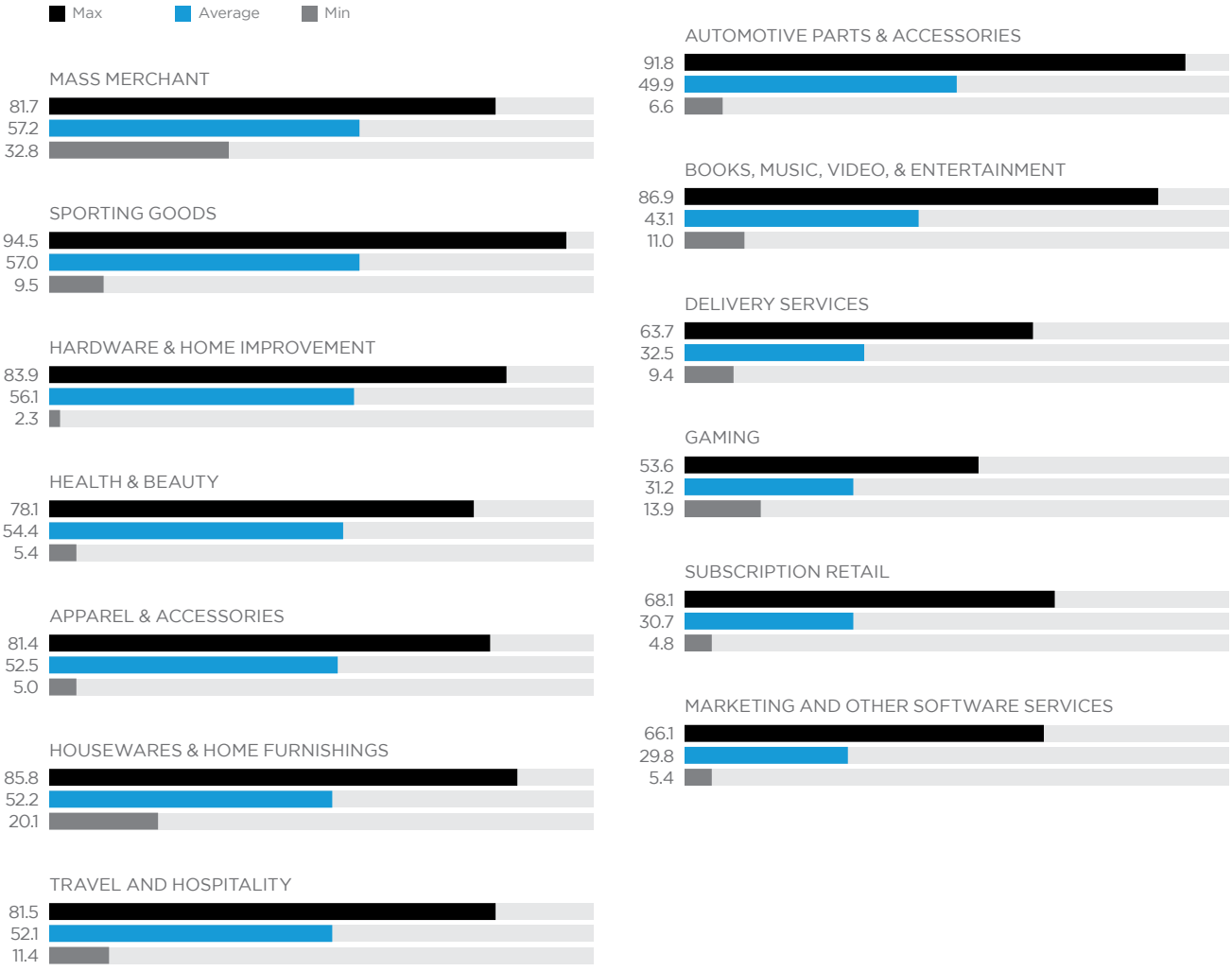
On the opposite end of the spectrum, there was very little difference between the CCI scores of top and bottom performing merchants in the gaming and mass merchants industries. The highest-scoring gaming merchant scored just 39.7 points higher than the lowest — almost half that of the computer and electronics sector. For mass merchants, the difference between the highest- and lowest-scoring merchants was 48.9 points.

This checkout variability may stem from the diversity — or lack thereof — between merchants of different sectors.

One clothing retailer's customers may value saving time, another's may value additional features or checkout options, and so on. Therefore, their shopping experiences — and checkout processes

FIGURE 14: Variability in overall index scores, according to industry

The highest, average and lowest index scores of merchants in different industries



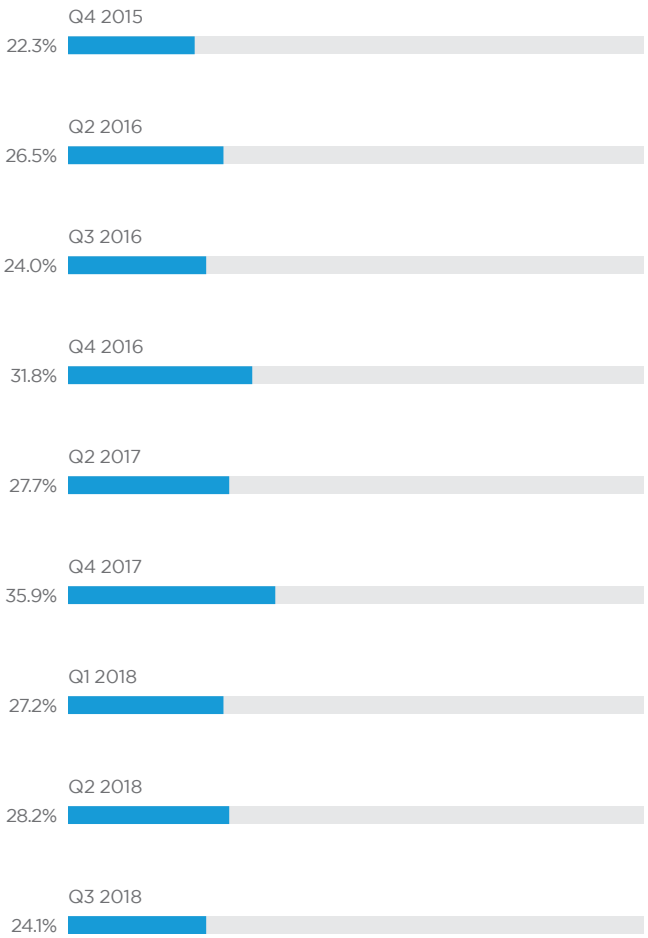
— are likely to be vastly different. This may account for the variety in different CCI scores we see in the apparel and accessories industry.

Finally, there is the computer and electronics industry. Like the clothing industry, this space is also populated with a complex mix of retailers, alternating considerably in terms of their products' function. This can easily lead to a greater variability in the checkout process.

Retailers should take care to consider exactly what experience their customers are going to them for, and to design their checkout process so as to best support that experience.

FIGURE 15: Merchant implementation of form-fill services

Percentage of merchants who had implemented form-fill service, by financial quarter



Deep Dive: How auto-fill is changing the eCommerce ecosystem

Many leading web browsers — such as Chrome, Safari and Firefox — now offer an auto-fill features for forms, so online shoppers don't have to manually enter in their card or shipping information each time they make a purchase online.

With that change, we are seeing fewer merchants offering auto-fill features on their sites.

Prior to Q4 2017, we noticed that the percentage of merchants who offered auto-fill was increasing. From Q4 2015 to Q3 2017, it grew from 22.3 percent to its peak at 37.2 percent. This is because merchants were using auto-fill as a mobile feature, and implementing it meant optimizing their mobile channel, making it easier for customers to shop and checkout on their mobile devices. Then, it began to fall after Q4 2017, reaching just 24.1 percent in Q2 2018 — a decrease of 35.2 percent in just two quarters.

Interestingly, this reversal coincides almost precisely with the implementation of new Google Chrome login feature in September 2018. The feature had a huge impact on the 62 percent of online shoppers who use Chrome. It automatically signed users into their Google accounts as soon as they accessed a Google

property, like Gmail, meaning that users can **gain automatic access to all their eCommerce accounts by just opening their Gmail account.**[6]

The new feature also meant that Chrome users were now automatically singed into the accounts they held with their merchants via Google's auto-fill feature. Suddenly, they did not have to manually sign in, and logging into their various accounts on different retail sites was easier and faster than ever before.

In one sense, this shift to browser-supported auto-fill had the effect of leveling the playing field by providing all merchants with access to the services.

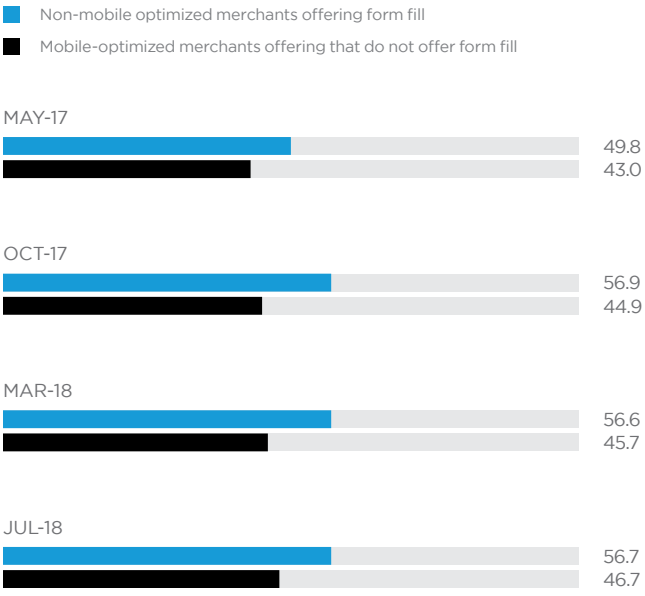
It also gave a boost to merchants that had not supported auto-fill prior to September 2018. Overall, it had a particularly profound effect on these merchants' checkout processes. If we examine the CCI scores of eCommerce merchants who did not have auto-fill before Chrome introduced its new login feature, we see that it has remained effectively stagnant since Q4 2017. In fact, in the past three quarters, their score has varied by a total of only 0.3 points, or about 0.5 percent.

On the flip side, the merchants that have never implemented auto-fill but have optimized their mobile sites have seen their CCI score increase consistently since Q4 2018. It was 44.9 in Q4 2017, and it rose to 45.7 in Q1 2018. By Q2 2018, it had reached 46.7, a total increase of 1.8 points in three quarters, representing a proportional increase of about 4 percent.

Simply stated, the checkout process for merchants who have never offered auto-fill as a feature is increasing, while that of merchants who do offer it has stagnated. Again, this has been the case since around the time Google launched its new automatic login feature in September 2017.

FIGURE 16: Merchants' overall index scores, by financial quarter

Average CCI scores of non-mobile optimized merchants who have form fill, and optimized who do not have form fill over time



[6]Kelly, Gordon. Google Chrome log-in change angers users. Forbes. 2018. https://www.forbes.com/sites/gordonkelly/2018/09/26/google-chrome-problem-web-browser-upgrade-update-windows-mac-linux-chromeos/#3b429a346996 Accessed November 2018.

Moreover, if we look at the quarter-over-quarter evolution of their CCI scores, we see that the difference in CCI growth between the two types of merchants has been decreasing. Their growth rates are now looking far more similar than they did prior to Q4 2017.

This means that there is no longer any incentive for merchants to invest in launching their own auto-fill features; doing so will not improve their CCI score any further than if they simply allowed browsers to do it for them.

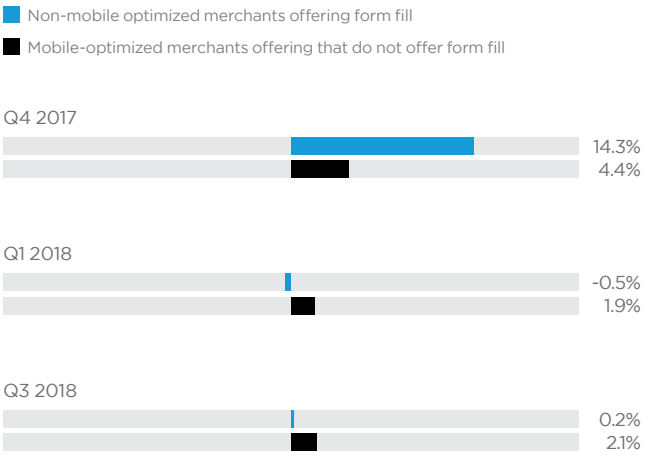
This supports our earlier hypothesis that the decline in the portion of merchants offering auto-fill since Q4 2017 is due to Chrome's new auto-login feature, which has presumably removed the incentive that had been driving merchants to adopt auto-fill. Now that there is no incentive to providing an auto-fill service, merchants are not investing in it.

So, what are eTailers to make of this data?

For starters, it means that auto-fill is no longer a unique and differentiating feature: It is already a given. Merchants looking to make their mobile checkout processes easier need to rethink their approach to mobile optimization, possibly by adding new features, or by streamlining the checkout process in a different way.

FIGURE 17: Percentage change in overall index scores, by financial quarter

The average conversion rates of Top, Middle and Bottom 30 Merchants, by financial quarter



Even more important, though, is the fact that technology companies that support these auto-fill services are now playing an active part in reducing eCommerce checkout friction. They are doing so by offering a service that is mutually beneficial to merchants and consumers, alike — one that reduces checkout friction for the consumer and increases conversion rates for retailers.

For these reasons, auto-fill and the changes it has wrought on the eCommerce space are here to stay.

Conclusion

The need to cater to consumers' appetites for shopping on connected devices has already led most retailers to creating their own mobile sites and many more to adopt their own apps. Moreover, as our research shows, the portion that has done so continues to rise.

Retailers have long been integrating the latest technologies into their checkouts to stay competitive, and now, they are getting a helping hand from internet browsers like Google Chrome, Safari and Firefox. This changing dynamic has had two major effects on eCommerce. First, it has made the auto-fill form feature the new standard rather than a differentiator, forcing eTailers to step up their game and find newer, more innovative ways to optimize their mobile and desktop sites. Second, it has also freed eCommerce merchants from the necessity of supporting their own auto-fill features, allowing them to focus on providing their customers with additional checkout features.

In this sense, the necessity for mobile optimization has not gone away but has evolved. Online merchants still need to focus on improving their mobile checkouts, but they also need to think about new ways to differentiate themselves. This may be achieved by offering customers a wider range of checkout features, or by reducing the time it takes for them to complete their online purchases. Ultimately, it is on merchants to decide how to best serve their particular consumers.

That said, from the general perspective, there are two big pitfalls that all eTailers need to avoid. The first is requiring customers to create an account to make a purchase. If customers are forced to create an account to access a merchant's products, our findings show that they will opt to shop elsewhere, instead.

The second pitfall to avoid is neglecting their desktop checkout processes. The modern shopper uses an assortment of connected devices to shop — not just one. Earning their business means ensuring that they have a smooth, effortless checkout process, regardless of which device they are using at any given time, whether it be a laptop computer, a smartphone or a tablet.

Only by recognizing these trends will online merchants be able to maximize their sales.

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FEEDBACK

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