



Cloud Computing In Retail: Pushing The 'Go Faster' Button

Benchmark Report

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Executive Summary

Key Findings

This is our first ever benchmark on the topic of “the cloud”. Cloud-based technologies are RAPIDLY shifting the retail industry, and while there are all kinds of promise about what is technologically possible, we wanted to know what **retailers** *really* think – and what their near-term plans look like.

As a result, this report seeks to answer fundamental questions about the role of cloud-based technologies as perceived by the very people that matter most: the executive decision makers currently weighing their value. What will these changes mean to retail operations? Who will benefit most? What role do privacy implications play? And what do implementation plans look like so far?

Some of the key points that we found:

- Our going-in assumption was that retailers’ primary interest was to reduce IT hardware expense and shorten upgrade cycles. *We were wrong*. Instead, this is all about pushing the “go faster” button. **Cloud is retailers’ real attempt to move beyond “retail time” to consumer time**
- Comparing IT people’s responses to LOB executives, year-after-year of complaints about the ever-growing IT backlog has taken a toll. A whopping 98% of IT respondents report *they* are the ones that can make the best use of cloud. IT is both desperate for help - AND has the more significant vision for what cloud can do for the company
- By size, the bigger the retailer, the greater their interest – and the more help they say they need. \$500 million in annual revenue appears to be the line where cloud solutions become most interesting
- The list of concerns retailers do have, though, is sizeable: 96% are most troubled by data integrity and security matters, 82% worry about bringing their legacy apps over, and 87% are concerned about keeping cloud-based costs in check amidst horror stories of “surprise” bills once the migration is complete
- Despite all the concerns, the draw of the advantages cloud can provide is **strong**. Which type of cloud depends on who you ask: the best performers (Retail Winners) prefer public cloud options, while the largest retailers (those with more than \$5 billion in annual revenue) lean toward a private cloud strategy. In short: retailers reflect an attitude of “whatever works” – they are just eager to get going.

However, there’s a lot more to this story than just a few bullet points. Within the following 27 pages you’ll find 20 data charts outlining retailers’ biggest hopes, challenges, and aspirations surrounding these exciting new technologies. We hope you enjoy reading the results as much as we enjoyed conducting the research,

Paula Rosenblum and Brian Kilcourse, report authors

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Research Overview

The Surprising Rationale Behind Cloud Computing

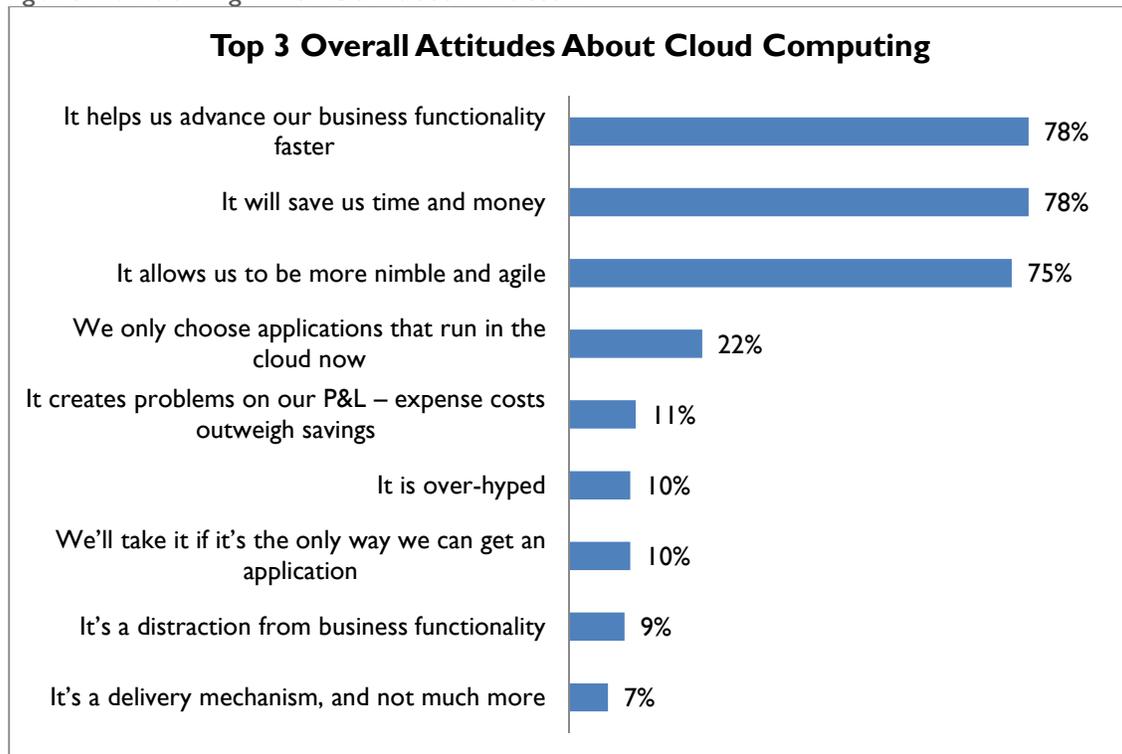
Welcome to RSR's inaugural benchmark into the state of cloud computing in retail!

The surge of discussion of “the cloud’s” value to our industry compelled us to benchmark what retailers – the true determinants of a technology’s value – think about its capabilities today, and its promises for tomorrow. Our going-in hypothesis governing the reason for this surge was rooted in the need for on-demand computing horsepower and flexibility. We knew that for several years, cloud was a vendor-driven, rather than a user-driven technology. We assumed that retailers had finally recognized that the ability to reduce IT hardware expense and corporate capital while insuring adequate computing resources through their highest peak volume periods was a driving force behind their adoption.

We also believed that retailers were weary of long upgrade cycles and were happy to receive small, incremental upgrades that don't require re-training in the user community and re-configuration in the data center.

It turns out we were wrong. Instead, the most frequently cited forces behind cloud computing in retail are all about pushing the “go faster” button. **Cloud is retailers’ real attempt to move beyond “retail time” to consumer time** (Figure 1).

Figure 1: Pushing The ‘Go Faster’ Button



Source: RSR Research, April 2019

While the three most frequently cited beliefs are all about speed and agility while maintaining manageable costs, the notion of cloud as a pure delivery mechanism falls to the bottom of the list.

We'll see later in this report that the ability to make computing resources more flexible pales in comparison to what we're calling "the go faster button."

Another piece of conventional wisdom is that smaller companies will benefit most from cloud computing. Yet as we'll see in a moment, just the opposite is true. The largest retailers are far more bullish on cloud than smaller ones. This was totally unexpected and we'll attempt to delve into their rationale later in the report.

Which Departments Can Benefit Most From Cloud Computing?

So much has been written about the IT development backlog, that it should come as little surprise that our respondents believe IT and eCommerce operations, those responsible for deploying applications, stand to make the best use of cloud. We asked respondents to select ALL departments that would benefit most from cloud computing, and these two groups floated right to the top (Figure 2).

Figure 2: Overall, Those Responsible For Deployment Have Greatest Need

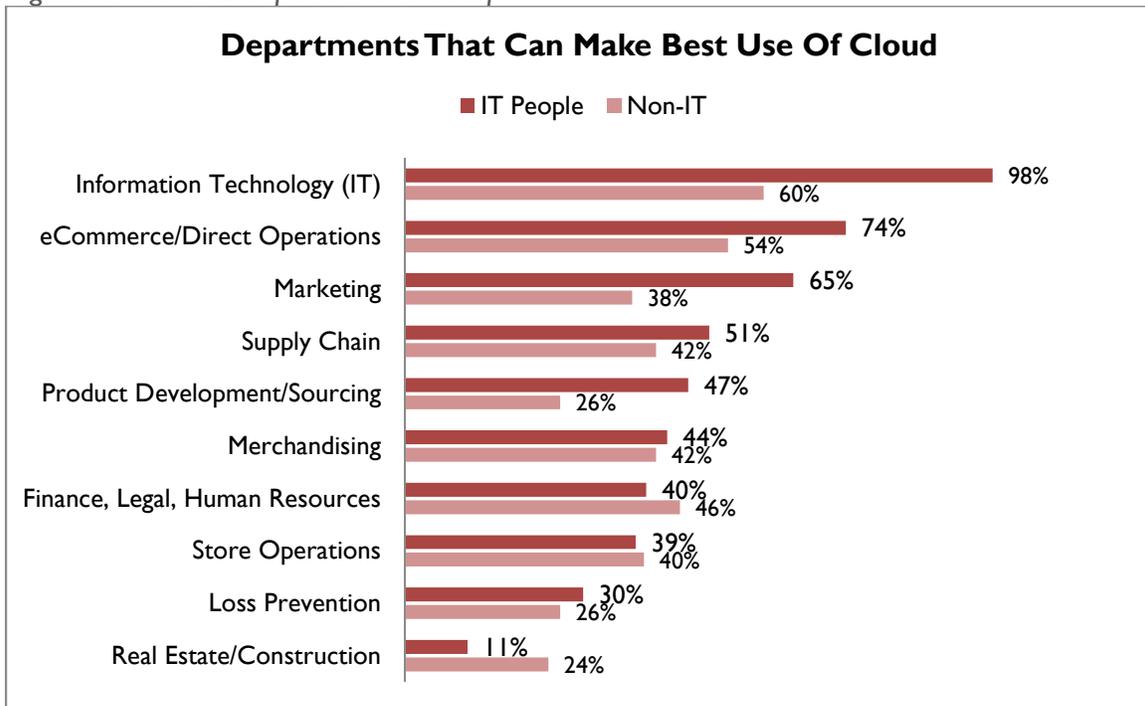


Source: RSR Research, April 2019

The data gets even more interesting when we look at the responses of those in the IT group vs. those in Lines of Business. The respondent profiles for this study was a bit unique for RSR, in that more than 50% of respondents came from the IT function (see demographic info on Page 5). It gives us a good window into the attitudes of those with deployment responsibilities.

Year-after-year of complaints about the ever-growing IT backlog has taken a toll. From their responses, it appears that the IT groups are basically exhausted and more than happy to turn responsibility for speed and agility over to others. This is readily apparent when we look at Figure 3, below. A whopping 98% of IT respondents report *they* can make the best use of cloud!

Figure 3: IT Is Desperate For Help



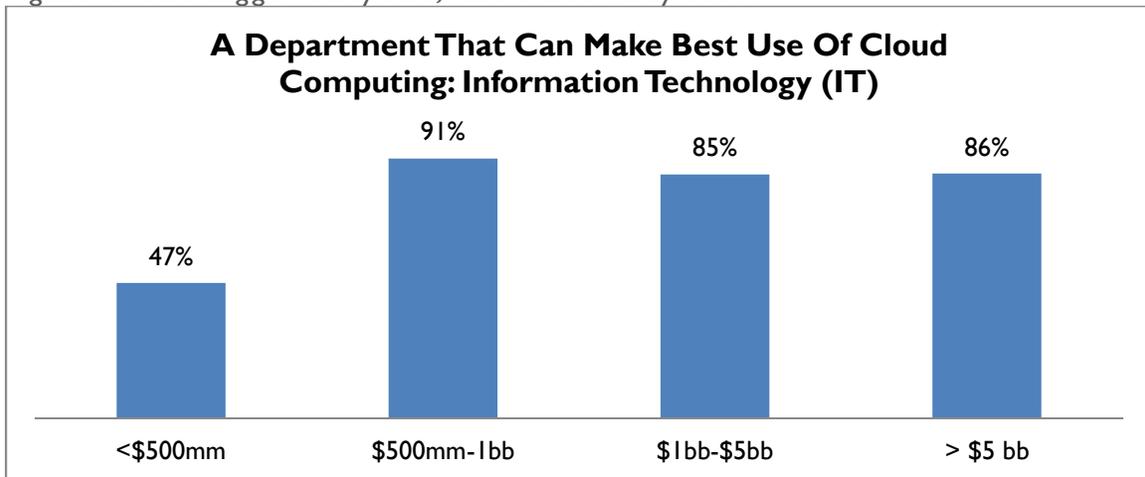
Source: RSR Research, April 2019

These responses are nothing short of stunning. It tells us that IT is both desperate for help, and also has the more significant vision for what cloud can do for the company. It's interesting that marketing, which has been in ascendency for the past decade has basically driven IT to distraction. More IT people believe cloud can help this department than line of business executives do. Is this an indictment or simply recognition of reality? Each company will have to answer that question for itself.

Looking At Retail Verticals And Retailer Sizes

We've already mentioned (and it will become thematic to this report) that smaller retailers are less likely to express an interest in cloud. One driving reason behind this is that retailers with annual revenue under \$500 million likely have relatively small IT departments and are busier focusing on product selection, customer acquisition and honing their business models than dealing with scale and technology issues. Once they pass the \$500 million per year mark, their need for cloud to support their IT group jumps dramatically and pretty much stays that way with only a minor drop as revenue rises (Figure 4).

Figure 4: The Bigger They Are, The More They Need



Source: RSR Research, April 2019

Why is this true? Infrastructure requirements change significantly when retailers “break” the \$500 million barrier, and change again when they break the \$1 billion and \$5 billion in annual revenue marks. Retailers suddenly find themselves looking for new merchandise sources, new distribution center facilities, and yes, new, more advanced technologies to support their burgeoning scale. It’s almost impossible for their previously small IT groups to keep up with the infrastructure changes their technologies have to support. These companies are prime cloud candidates and believe they can make great use of it.

We would be remiss if we did not make mention of retailers selling fast moving consumer goods at this point. While as a rule, their revenue model is significantly higher than most of the retailers we cited above, their appetite for technology to support their infrastructures is legendarily smaller.

In fact, we found that with the exception of the IT department, these retailers lagged all other verticals in their perception of the value cloud could bring to their enterprise (not pictured). They didn’t lag by a little. They lagged by almost 50%. We believe that the sudden coming of omnichannel to grocery will change that perception, but in the meanwhile, they continue to fall further behind.

Retail Winners And Why They Win

In all our benchmark reports, RSR cites differences between retailer over-performers in year-over-year comparable sales and their competitors. We find that consistent sales performance is an outcome of a differentiating set of thought processes, strategies and tactics. We call sales over-performers “Retail Winners.”

RSR’s definition of these Winners is straightforward. Assuming industry average comparable store/channel sales growth of **4.5 percent**, we define those with sales above this hurdle as “Winners,” those at this sales growth rate as “average,” and those below this sales growth rate as “laggards” or “also-rans.”

Methodology

RSR also uses its own model, called The BOOT Methodology[®] to analyze Retail Industry issues. We build this model with our survey instruments. See [Appendix A](#) for a full explanation.

In our surveys, we continue to find the kinds of differences in thought processes, actions, and decisions cited above. The BOOT helps us better understand the behavioral and technological differences that drive sustainable sales improvements and successful execution of brand vision.

This study is no exception. Throughout the report, we'll show attitudinal differences between Retail Winners and their peers. The results are sometimes stunning.

Survey Respondent Characteristics

RSR conducted an online survey from February – March 2019 and received answers from 107 qualified retail respondents. Respondent demographics are as follows:

- **2018 Revenue (US\$ Equivalent)**

Less than \$50 million	4%
\$51 million - \$249 million	4%
\$250 million - \$499 million	10%
\$500 million - \$999 million	31%
\$1Billion to \$5 Billion	32%
Over \$5 Billion	20%

- **Products sold:**

Fast moving consumer goods	20%
Apparel, footwear and accessories	17%
Hard goods	14%
General merchandise	34%
Hospitality, retail services, entertainment	14%
Brand manufacturers	2%

- **Headquarters/Retail Presence:**

	<u>HQ</u>	<u>Retail Presence</u>
USA	77%	88%
Canada	0%	31%
Latin America	1%	14%
UK	18%	36%
Europe	3%	35%
Middle East	1%	9%
Africa	0%	5%
Asia/Pacific	1%	22%

- **Year-Over-Year Sales Growth Rates** (assume average growth of 4.5%):

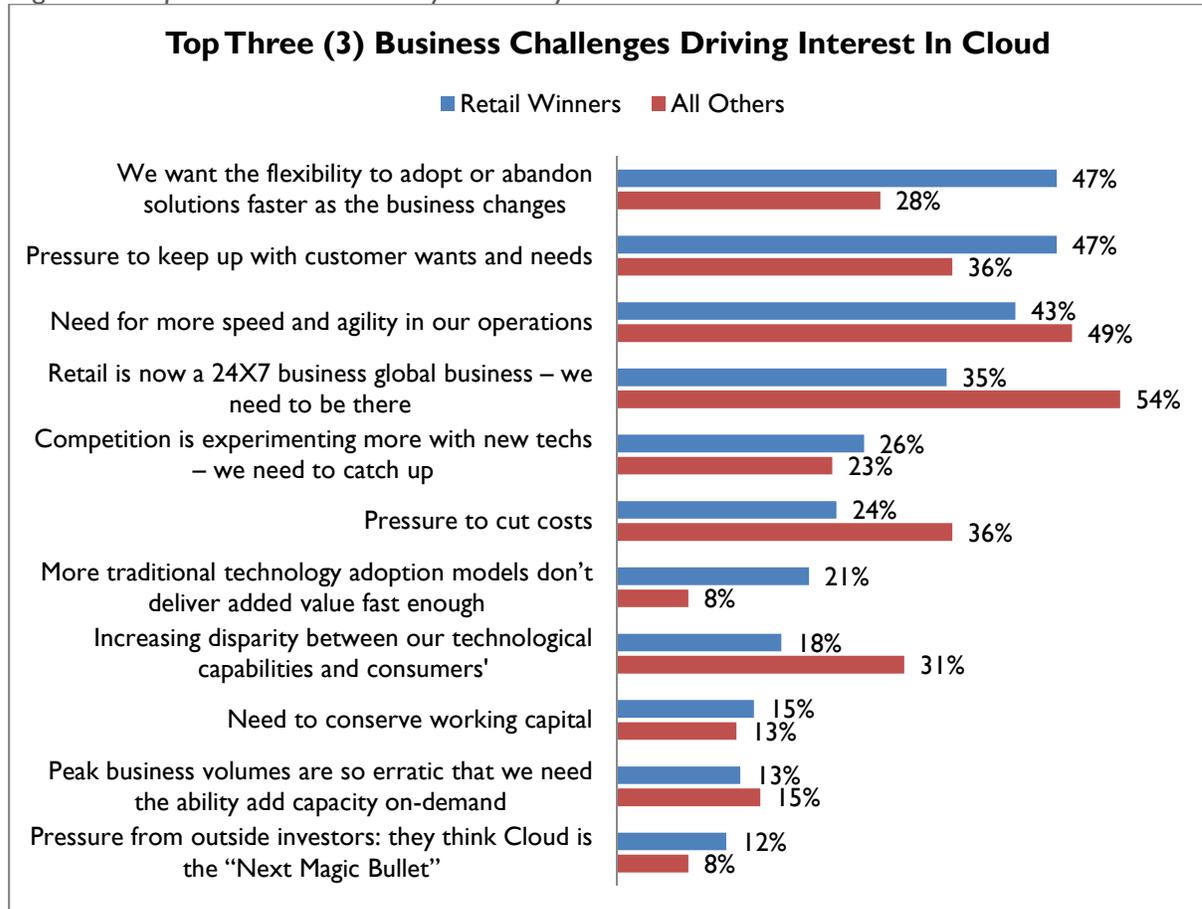
Worse than average (“Laggards”)	6%
Average	31%
Better than average (“Retail Winners”)	64%

Business Challenges

Winners Want To ‘Go Faster,’ Others Want To Catch Up

For Retail Winners, no specific technology is “forever.” They recognize that change in both their businesses and consumer wants and needs are inevitable. As a result, they want the flexibility to implement solutions that will help them keep up with those changes. Others, on the other hand, are racing to catch up. They are driven by the need to be “always on” for the always-on consumer and consumers’ technologies far outstrip theirs (Figure 5).

Figure 5: Speed And Flexibility Are Key



Source: RSR Research, April 2019

On the other hand, we can see that underperformers continue to feel the pressure to cut costs. It's not clear that they understand how or why cloud will help them do that. In fact, from their responses, one would think that cloud is the magic bullet that will help them be always-on and responsive, catch up with consumers and cut their expenses all at the same time. Of course almost no respondents are saying that outside investors think cloud is the next magic bullet, but from their responses, we can see that under- and average performers think that way themselves.

This is always worrisome. The problem with what RSR calls “the magic bullet syndrome” is that inevitably, some aspect of the bullet will not hit the mark, and underperformers find themselves disappointed in technology once again. As always, we caution both those who deliver and those

who consume these new technologies to be explicit in their expectations, and explicit in their capabilities to deliver on those expectations.

Disproving Our Going-In Hypothesis

As we mentioned in the overview, we entered this study under the presumption that a driving force behind cloud adoption in retail was the ability to flex with sudden seasonal or promotional volume spikes. Our logic said, “Why invest in hardware for peak periods when those periods only come for, at most, a few weeks every year?”

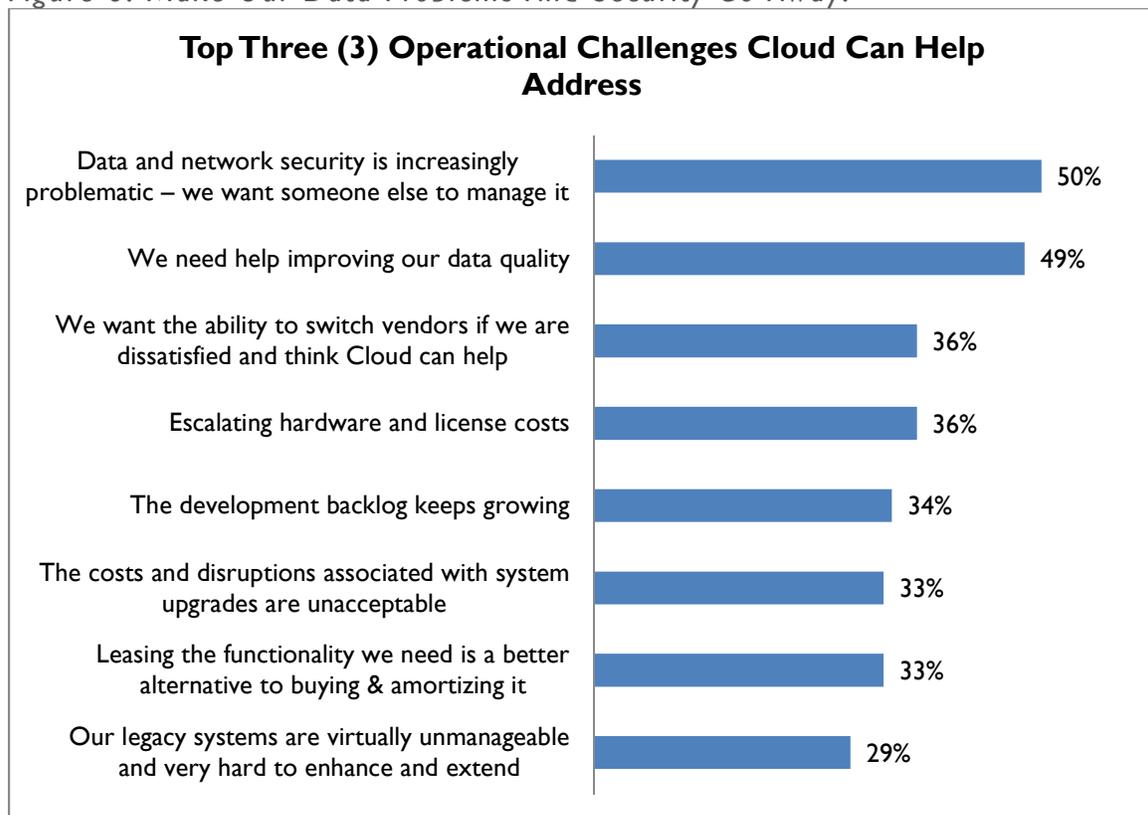
As is apparent from its position in Figure 5 above, this is just about the least of retailers’ problems. While 18% of IT respondents (not pictured) do believe this flexibility is useful, only 10% of all others see it as a top-three concern. The simple fact is, in general, hardware is relatively cheap. Algorithms that dynamically allocate more resources to different applications are nice to have, but are not going to make or break the business.

We became keenly aware in analyzing this data that retailers believe what will make or break their businesses is lack of agility and an inability to keep up with changing customer and business needs. **Computing power turns out to be the least of their concerns.**

Data And Network Security And Quality As Someone Else’s Problem

Operationally, retailers are recognizing the continued threat of data theft and are willing to give the problem over to someone else (Figure 6).

Figure 6: Make Our Data Problems And Security Go Away!



Source: RSR Research, April 2019

We are in complete concurrence with this notion when it comes to data and network security. While the volume of in-store sales data theft has decreased, the unauthorized access of consumers' personal information and retailers' business information continues unabated. When Apple releases a [commercial advertising "privacy" as a key selling point](#) of its iPhone rather than its cool technology innovations, it gives one a definite sense that - despite any conversation or pundit opinions to the contrary - **consumer privacy matters**.

We don't, however, believe that cloud computing is going to help retailers solve their data quality problems. Poor data quality requires root cause analysis that starts at the Point-of-Sale in store (are items being scanned correctly?), to physical inventory processes and cut-offs, to omnichannel processes. In some cases, it goes all the way back to the purchase order and the potential of incorrect price tickets. None of these can be helped by cloud computing. Rather, they require sound auditing of every process that either adds or subtracts from perpetual inventory.

Geographical Differences

With approximately 20% of our respondent pool coming from the United Kingdom, we found some interesting differences by geography.

Significantly more respondents from the UK believe that cloud will help them solve their data and network security problems than do US-based retailers (59% to 46% respectively). The pressure of the General Data Protection Regulation (GDPR) clearly weighs heavily on their minds.

We found similar results in pressures to solve the data quality problem. Fifty-nine percent of UK-based retailers believe that cloud will help them in this regard vs. 46% of US-based retailers. Our same caveat applies here. These retailers know that root cause analysis is required; not just a bandage or magic bullet to make it go away.

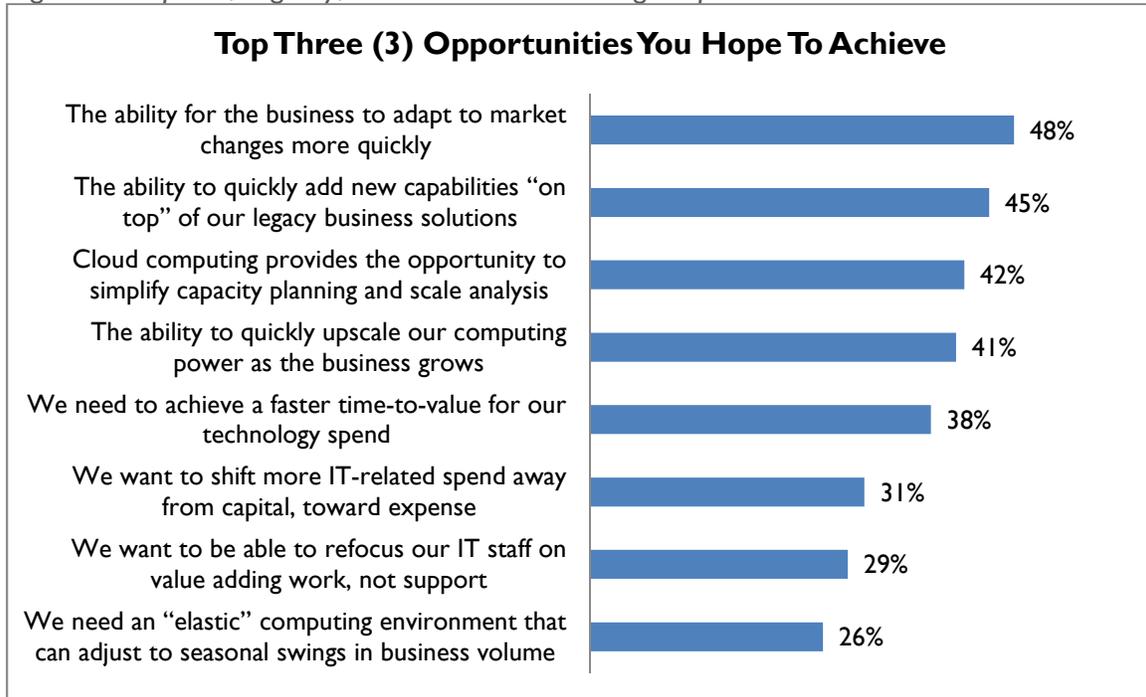
We'll see on the following pages how the opportunities these same retailers seek from cloud computing are in alignment with these business and operational challenges.

Opportunities

Fleshing Out The ‘Go Faster’ Button

We’ve already established that retailers are primarily interested in cloud to support speed and agility. This is made even clearer when we look at the most frequently cited opportunities they see from implementing cloud (Figure 7).

Figure 7: Speed, Agility, And Future Planning Top The Charts



Source: RSR Research, April 2019

Once again we see a real craving for adaptability, ideally without the need to rip and replace the application stacks these retailers already own. Interestingly, while an “elastic” computing environment doesn’t rise to the top of many retailers’ priority lists, the ability to simplify capacity planning up front is highly prized, along with computing capacity that falls in line with business growth plans. This is very different from seasonal demand differences, and is a much more long-term strategy.

Not surprisingly, these capacity planning and growth concerns are more valuable to IT than to Line of Business users, with 51% of IT respondents citing capacity planning as a top-three opportunity vs, 32% of Line of Business (LOB) users, and 49% of IT respondents citing upscaling in line with business growth as a top-three opportunity vs. 32% of LOB.

Retailers also believe that they can leave many of their legacy systems intact while they layer cloud-based solutions on top of them. It’s frankly unclear to us that this will be an effective strategy in all or even most cases.

Truth be told, **there are always integration points between systems**, and absent some kind of integration bus or API-based legacy solution, integration may prove to be as difficult with cloud-based systems as it is with on premise solutions. Of course, IT respondents are a bit savvier when

it comes to this concept, with 39% selecting this as a top-three opportunity vs. 52% of LOB respondents. This is a dangerous perception in our opinion - and could well set projects up for failure.

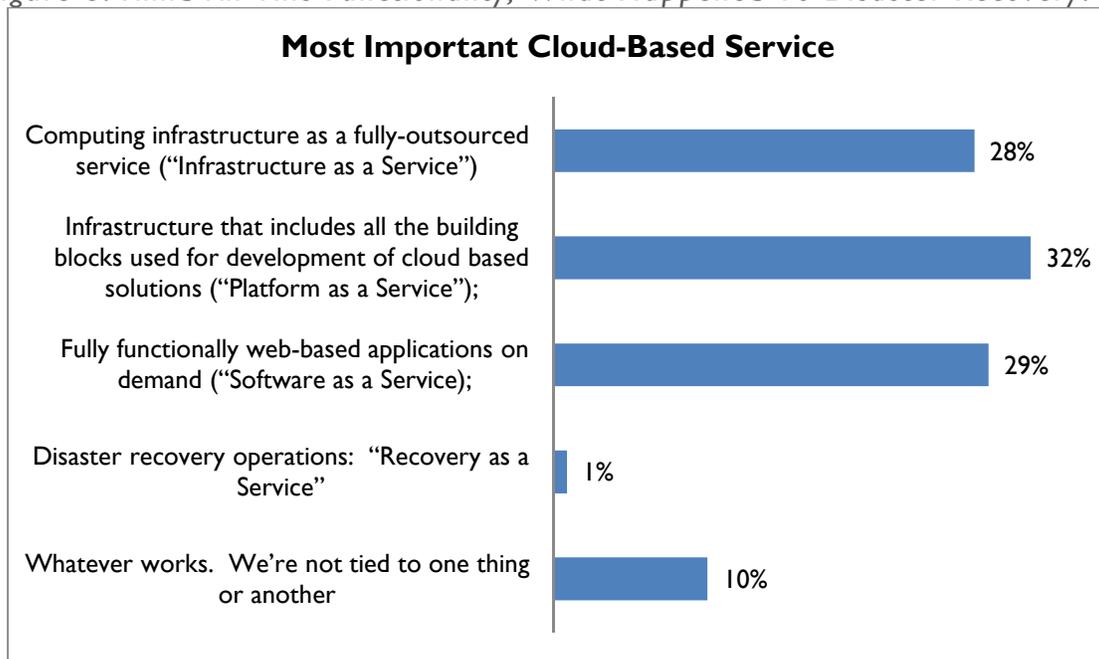
In fact, there is one other area that we can only call “opportunity missed.”

Whither Disaster Recovery?

If we start with the assumption that retailers are going to add cloud-based solutions on top of their legacy solutions, we are presuming a hybrid technology environment for the foreseeable future.

With that assumption, it’s interesting to take a look at our respondents’ most important cloud-based service (Figure 8).

Figure 8: Amid All This Functionality, What Happened To Disaster Recovery?



Source: RSR Research, April 2019

Certainly, we didn’t expect to see disaster recovery rise to the top of the list, but we did expect to see it come in at more than 1% of respondents! Definitely more important than, “Whatever works!” It begs the question: **have retailers forgotten the basics of disaster recovery?** One tremendous opportunity that cloud offers us as consumers is the ability to back up our data and restore it on demand. We suspect very few of our readers are unfamiliar with this feature. After all, if a hurricane or fire strikes, backup drives will burn or flood out as easily as everything else in our homes.

So why doesn’t this also extend to our business environments? In fact, we have to ask the question: *how many companies still even have a fully fleshed out disaster recovery plan? Have they contemplated the implications of an environment where some data and technologies are in various parts of the enterprise, both inside and outside the control of IT, while others live outside the enterprise in the cloud? What is the business resumption strategy?*

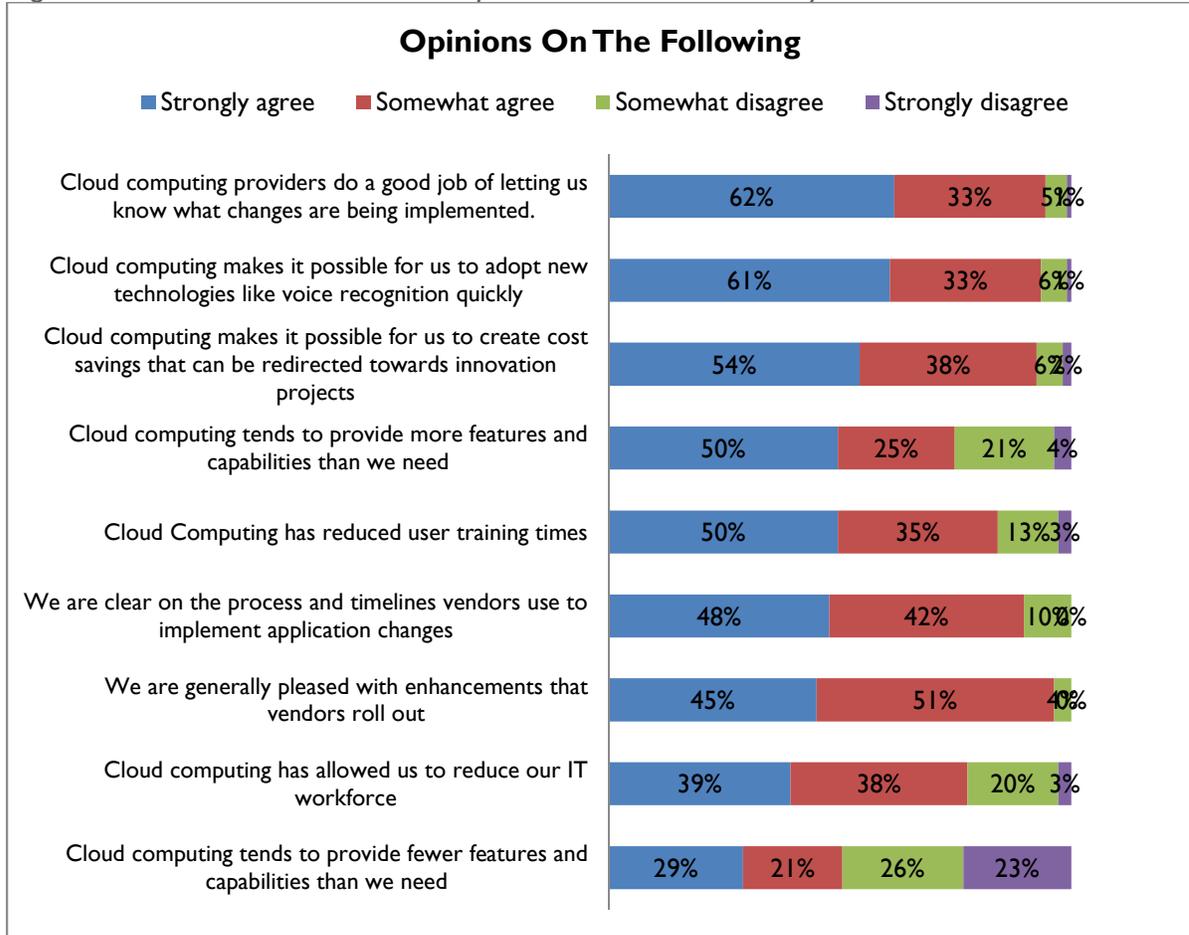
These are big questions, and ones that we really encourage our retail readers to consider.

We also encourage asking vendors what their disaster recovery scenarios look like. One important feature of cloud is that a system and its data are completely abstracted from the location of the user. But it's imperative to ensure your vendor has his own disaster recovery plan in place. Murphy's Law is still applicable and things will always go wrong.

How Well Do Cloud Providers Meet The Promise Of Cloud?

One opportunity associated with cloud – the promise more frequent upgrades with less grief – appears to be yielding mixed results (Figure 9).

Figure 9: Cloud Providers Get Tepid Reviews On Delivery



Source: RSR Research, April 2019

Very few respondents are overtly negative about anything their cloud providers do, but they also damn them with faint praise. It's not good that less than two-thirds believe their providers do a good job of letting them know what changes are being implemented. It's not good that less than half are clear on the process and timelines vendors use to implement application changes. And it's definitely not good that less than half are generally pleased with enhancements their vendors roll out.

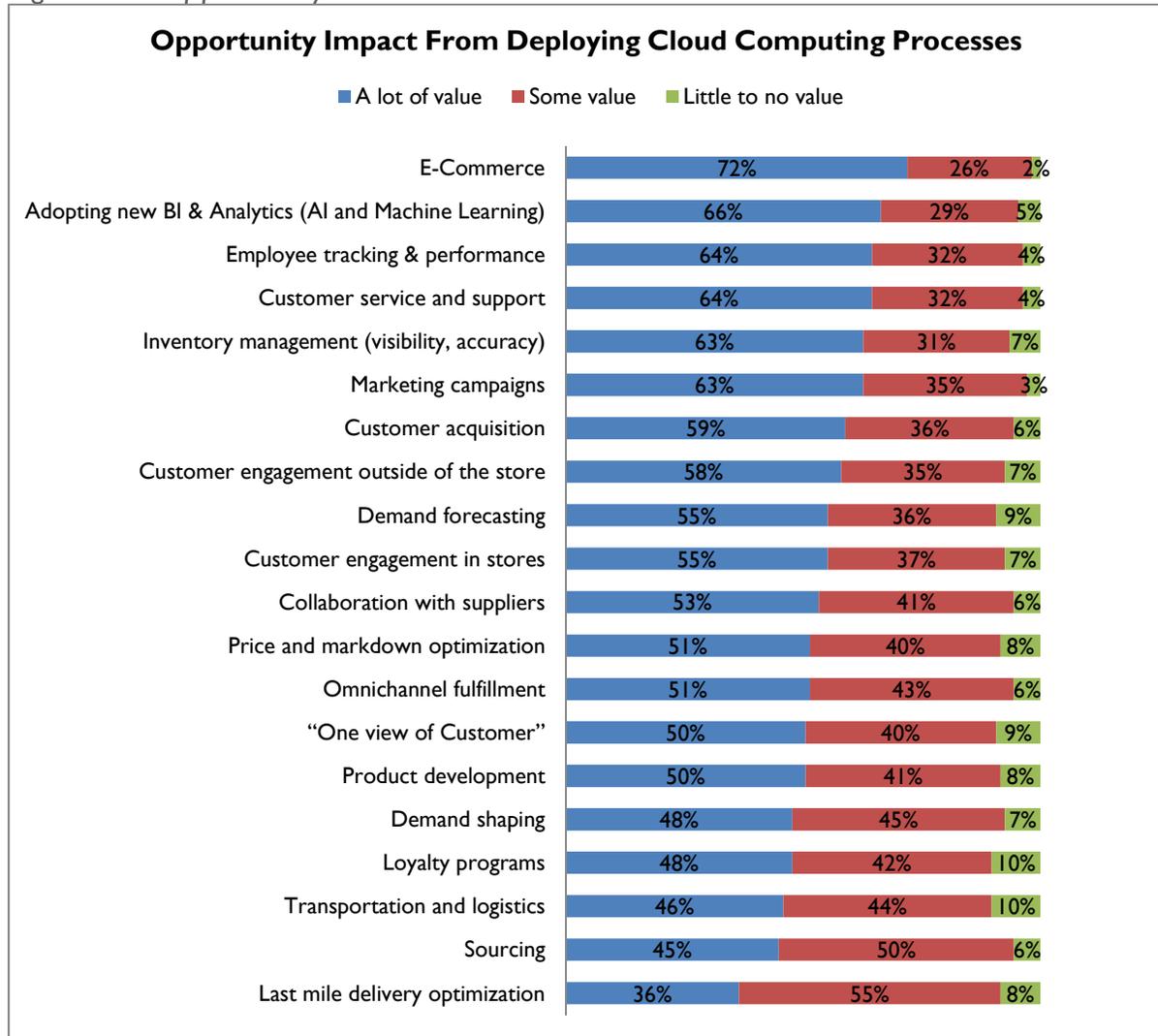
In fact, the only truly high marks cloud providers get is their ability to provide the features and capabilities retailers need. Of course, that's no small thing.

This tells us *that vendors have to work harder, establish better lines of communication within the enterprise and generally communicate more clearly, more often.*

What Processes Benefit The Most From Deploying Cloud Solutions?

In the Overview section of this report, we highlighted the functional departments that have the most to gain from cloud computing solutions. Now we'll take a look at the impact respondents believe cloud will have on a variety of organizational processes (Figure 10).

Figure 10: Opportunity Knocks For Retail Processes



Source: RSR Research, April 2019

Not surprisingly, retailers believe eCommerce, AI and machine learning, the “newer” application suites in retailers’ portfolios, hold the greatest promise. And the resurgence of the store drives employee tracking and performance near the top of the list as well.

We were, however, disappointed to find retailers were less enthusiastic about transportation and logistics, sourcing and last mile delivery optimization. It strikes us that these functions, above all, benefit from pushing the “go faster” button. It also doesn’t hurt that far-flung operations like sourcing programs can take advantage of incremental upgrades in place, with no personnel needed to support deployment.

We confess to a certain befuddlement over the choices retailers have made here. We can only assume they are looking at their biggest pain points and are presuming that cloud will solve them. We strongly encourage taking a deeper dive into the opportunities that can be derived in the supply chain and think about how that will help them “go faster.”

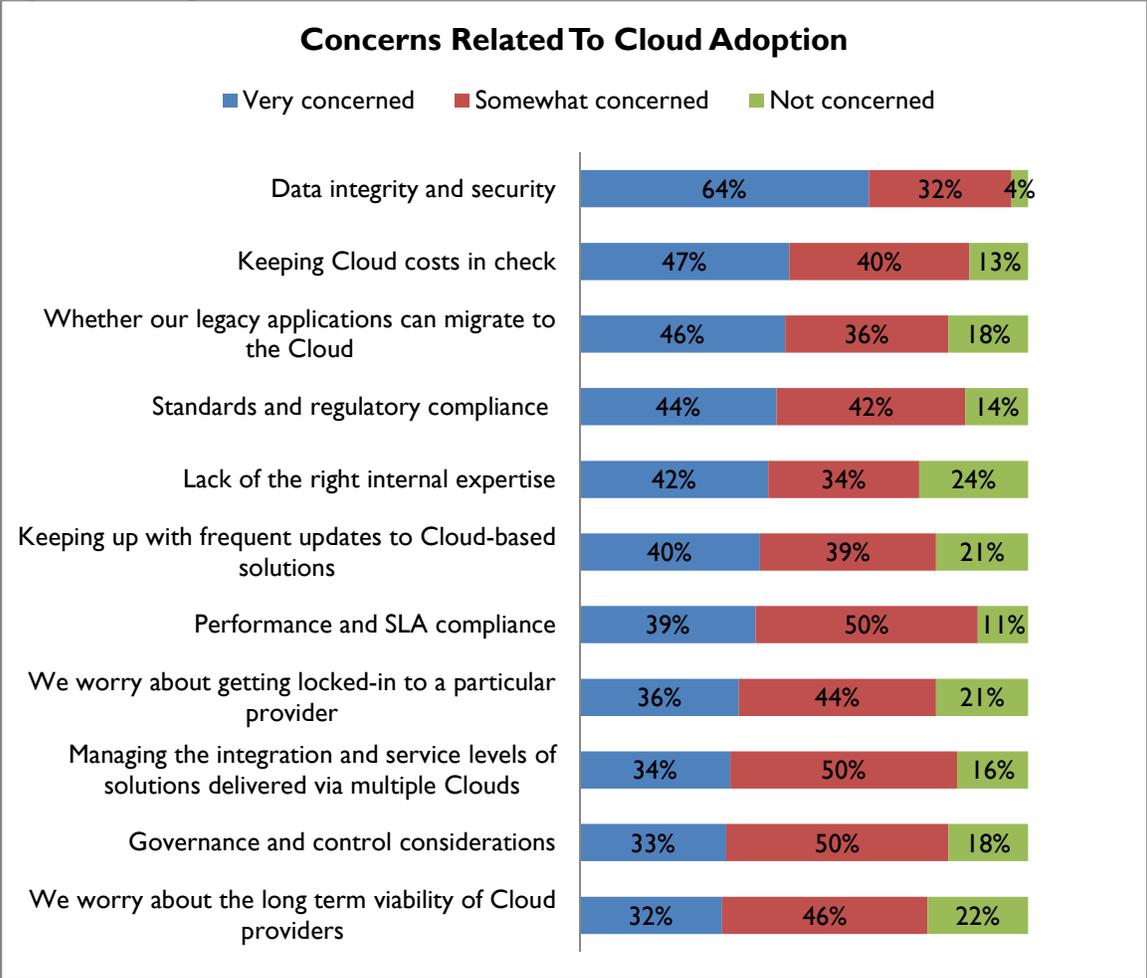
Retailers have clearly made a strong case for cloud migration. It’s clear that they want to speed up reaction time and business agility. So what could possibly go wrong? What’s holding them back? To get the answers to these questions, we have to take a long look within the enterprise, and at the organizational inhibitors that stand in their way.

Organizational Inhibitors

More Questions Than Answers

When it comes to adoption, retailers are in a damned-if-we-do-damned-if-we-don't paradox. Earlier in this report, we noted that the top operational challenge that cloud adoption can help address is that “data and network security is increasingly problematic – we want someone else to manage it”, according to one-half of retailers surveyed. While RSR is on record for expressing a strong concern about the need for retailers to take the necessary policy and technology measures to ensure the privacy of consumer data, that concern by retailers doesn't necessarily equal a win for cloud providers. In fact, “data integrity and security” is *also* the #1 concern that retailers express when thinking about a possible a move to a cloud environment (Figure 11).

Figure 11: Big Concerns



Source: RSR Research, April 2019

This is an important finding for cloud providers; while top cloud providers do in fact make statements about the importance to data security (for example, “Cloud security at AWS is the highest priority...”), there is clearly a need for providers to push that promise forward.

But data integrity and security is far from being the only concern for retailers that are considering adoption of a cloud strategy. Interestingly, “*performance and SLA compliance*” rates as the second greatest concern for the overall response group (“very concerned” + “somewhat concerned”), followed closely by “*keeping cloud costs in check*”. These issues are closely related, since poor performance will inevitably trigger additional unanticipated costs to rectify the problem.

Earlier in this report, we warned average and under-performers about the dangers of “magic bullet syndrome”. Cloud *may* deliver more or better functionality and service at a lower cost, but that outcome is at least partially dependent on how reliably (and well) performance and service levels are planned for and managed. Retailers should be concerned that fluctuating or exploding costs associated with cloud adoption will make resources forecasting difficult, and that budgeting on a month-to-month basis will be burdensome.

Non-winners are leery of getting caught in such a situation, and therefore express uncertainty more frequently than Winners do. We’ve consistently found in our many years of benchmarking retailers’ attitudes, this is a hallmark of non-winners’ point-of-view when it comes to technologies of any kind. But the surprise here is that the dual issues of performance and cost management track more closely to how big a retailer is than to whether a retailer is an over-performer or not (Figure 12).

Figure 12: The Bigger The Retailer, The Bigger The Concern

Top Concerns About Cloud Adoption ("Very Concerned")						
	Winners	Others	<\$500M	\$500M-1B	\$1B-\$5B	> \$5B
Performance and SLA compliance	44%	31%	37%	33%	38%	52%
Keeping Cloud costs in check	46%	49%	32%	45%	44%	67%

Source: RSR Research, April 2019

RSR believes that *all* retailers should be concerned about unanticipated costs associated with cloud adoption – even the smallest retailers. While top providers highlight the fact that cloud services can be expensed rather than capitalized, shifting from Capital Expense (CapEx) to Operating Expense (OpEx) isn’t a panacea. Companies may be reluctant to let go of the tax benefits associated with a CapEx strategy, and the CFO may favor the predictability of owning the solution rather than the unpredictability of the OpEx associated with pay-for-performance cloud-based services.

These are all concerns that must be addressed while retailers consider the benefits of moving to the cloud.

Special Considerations

In examining the concerns noted above, we also identified a few special considerations worth mentioning:

- **Retailers with over \$5B** in annual revenue are far more concerned that their legacy applications will be able to migrate to the cloud (71% vs. 40% for all other retailers). In the past, the largest retailers were the most prone to adopt a “roll your own” strategy when it came to business applications. There were many valid reasons for this, not least of which was that the commercial applications of the day could not handle the volume of business

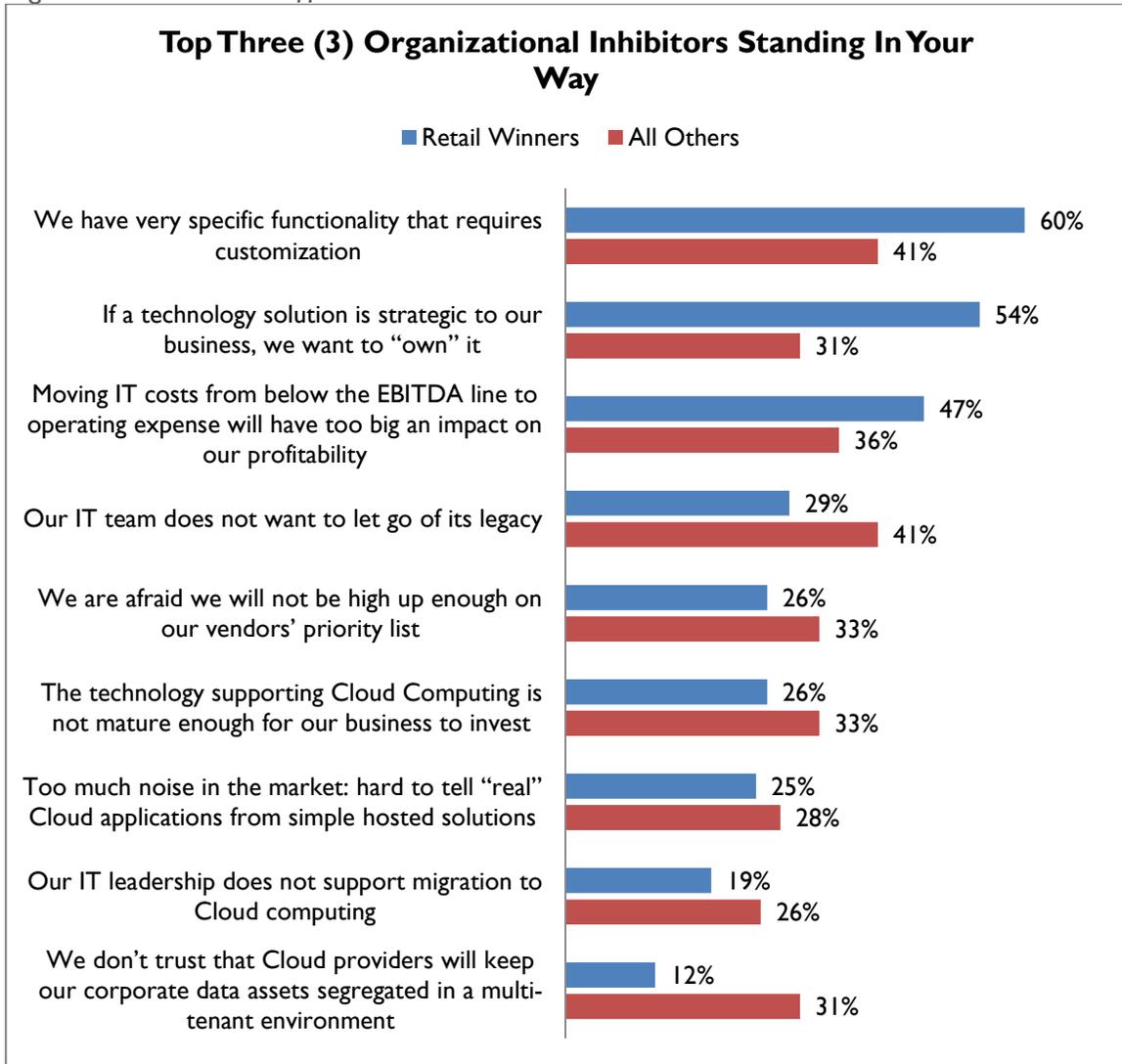
that the largest retailers created. Today, big portfolios of custom-code can be problematic for those retailers that seek to move their legacy to the cloud.

- **Retailers over \$1B in annual sales** are more prone to be concerned about standards compliance (PCI, Sarbanes-Oxley, HIPAA, GDPR, etc.) than smaller retailers (51% compared to 37%). We're surprised both by the fact that the concern isn't greater and that it isn't shared across the spectrum of retailers. The issue is certainly real enough, and as other American states consider California's GDPR-like regulations, it will assume only greater visibility and importance.
- And **fast-moving-consumer-goods (FMCG) retailers**, who are far more than likely than the overall response group to be very concerned about "data integrity and security" (86% vs. 59% of all others), are the most reluctant retail sector to consider cloud adoption. Whether their fears about data integrity and security are justified or not, it is clearly an issue that prospective providers need to address head-on.

Old Beliefs Remain

When it comes to the top inhibitors that stand in the way of cloud adoption, we were surprised to learn that the #1 inhibitor for Winners and non-winners alike (although by a nearly 20-point differential) is that **retailers feel they have very specific functionality that requires customization** (Figure 13).

Figure 13: 'We're Different'



Source: RSR Research, April 2019

These results are nothing short of stunning, and demand some kind of explanation. Here's a try: as we noted in the Research Overview, respondents overwhelmingly feel that the IT department is the top beneficiary of a move to the cloud. It turns out that it is the IT group itself that makes the claim for special customizations that could preclude choosing cloud-based commercial business applications (61% compared to only 44% of non-IT respondents). But looking at the next-up inhibitor for Winners complicates the picture somewhat: over one-half of Winners also feel that if a business solution is strategic to the business, the company must own it. The implication of this is clear: the business application must be licensed.

These attitudes are both an artifact of the past (when commercial applications were more of a framework than a working application, and retailers were actually encouraged to modify and extend the code), and also a startling indictment on the believability of solution providers' assertions that retailers can trust their most important requirements to cloud-based solutions. The fact is, retailers are not sure they can entirely believe the promise.

Late To The Party

RSR has often pointed out that fast-moving-consumer-goods (FMCG) retailers were the last retail segment to feel the impact of omnichannel retailing. Even as recently as June 2017, we noted that:

“While grocers in particular once might have felt that they were immune to the digital challenge, those days appear to be drawing to a close...”¹

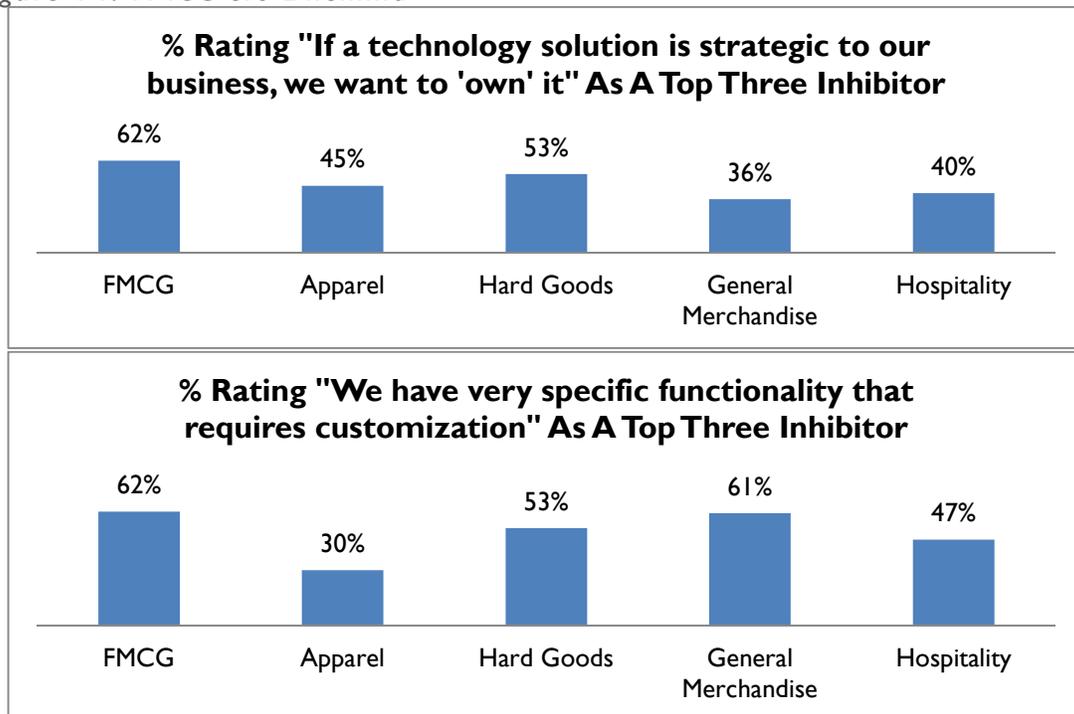
Cloud-based solutions are at the heart of every omnichannel strategy – after all, that’s how consumers connect with retailers. Retailers’ confidence in cloud-based e-Commerce offerings grew as the volume of business grew, and now many big businesses run their digital operations with a heavy reliance of commercial solutions that operate in the cloud.

We also noted in another recent report that:

“FMCG... is the single most conservative vertical... While this is understandable on one level, it also underlines just how hard it is for retailers to overcome their cultural bias towards caution and face disruptive competitive forces proactively.”²

As a result, FMCG retailers generally don’t have the same level of familiarity that early e-Commerce adopters do. They also have a long history of caution when it comes to being anywhere close to the front edge of technology adoption. So it’s no surprise that we see a reflection of caution in their expression of concern about owning the software and special functional needs that would require customization (Figure 14).

Figure 14: FMCG’s Dilemma



Source: RSR Research, April 2019

¹ *Omnichannel Retailing 2017: Retail’s Existential Challenge*, RSR Benchmark Report, June 2017

² *Ramping Up Retail Innovation*, RSR Benchmark Report, September 2018

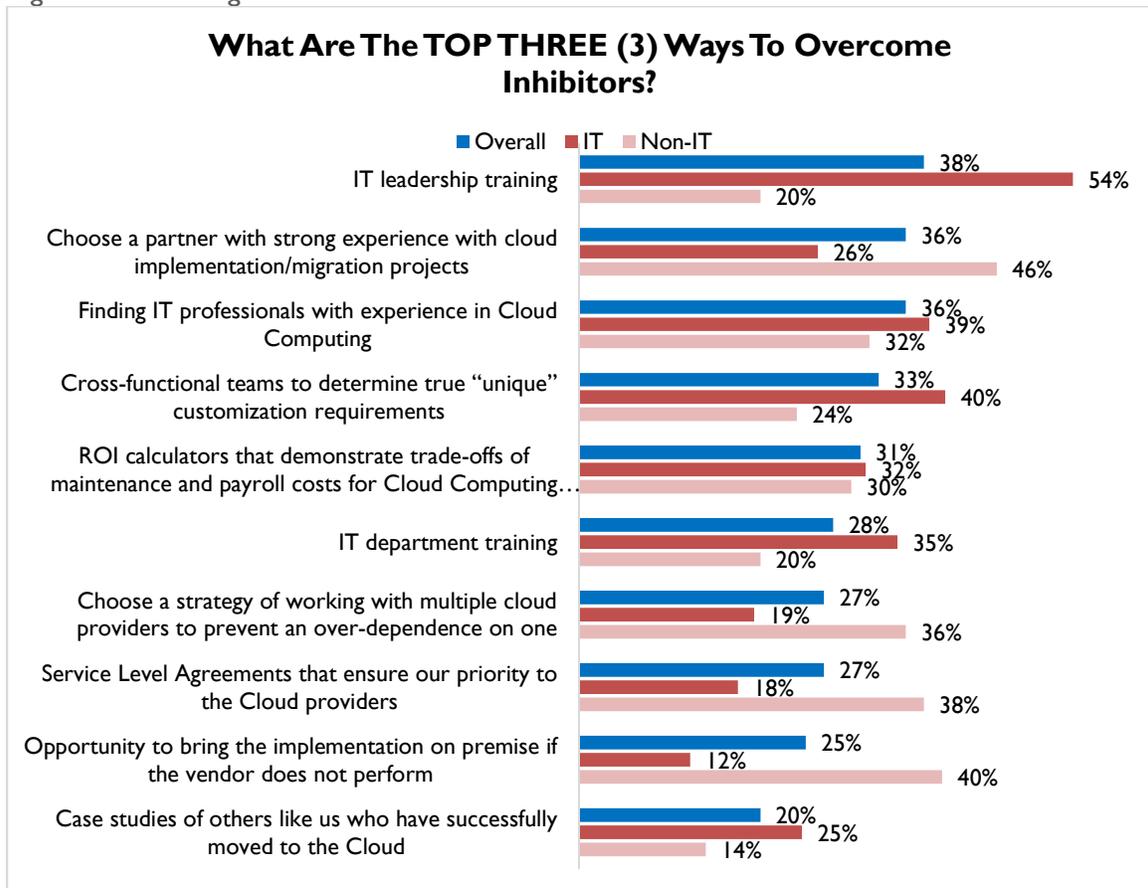
Experience must be the teacher for these retailers. But those solution companies that want to win FMCG's business have got their work cut out for them. Notwithstanding U.S. companies like Kroger and Walmart's recent proclamations that they are now technology companies, FMCG'ers in general take a go-slow approach. And the truth is that some of their functional needs *are* unique to their segment (for example, grocers' multi-tiered price management capabilities are often unique to their Brands). Trying to sell cloud to this segment will require a special touch.

Overcoming Inhibitors

We noted at the beginning of this report that roughly 50% of respondents come from the IT function: highly atypical for an RSR benchmark study. That unusual split has yielded some interesting insights into the forces driving companies towards cloud strategies, but none is more startling than the finding that 98% of IT'ers believe that *they* will be able to make best use of the cloud. IT'ers see cloud-based offerings as ways to blow through a big and growing backlog of demands from the business to deliver new digital capabilities faster.

Given the inhibitors to cloud adoption noted above, it makes sense to see how IT'ers vs. others prioritize the way to overcome those inhibitors – and their comparative answers are revealing (Figure 15).

Figure 15: Disagreement



Source: RSR Research, April 2019

IT'ers seek to make the IT function better. They see opportunities to train IT leadership about cloud capabilities, to work more closely with the user community via cross functional teams to determine "true" customization requirements, and for more training for themselves, all as keys to getting around the uncertainty that the enterprise expresses about a move to the Cloud.

Non-IT'ers seek to counteract what they clearly perceive as IT's inexperience with cloud technologies, as well as their own uncertainty about cloud providers. *Non-IT'ers want strong cloud-experienced partners, multiple cloud providers as a buffer against over-dependence on one, strong service level agreements with cloud providers, and their "ace in the hole" – the ability to bring an implementation on-premise if a chosen cloud vendor fails to perform.*

Rarely in our benchmark studies do we see such a dichotomy about how to overcome internal obstacles. Often in our studies, the top choice by respondents is for strong C-level vision and leadership. In this case, that kind of leadership is particularly needed. Line of Business (LOB) and IT have to come to consensus about how to get past the roadblocks that prevent them from moving forward to take advantage of what cloud solutions may have to offer. Without a commonality of purpose and agreement on how to prepare the organization to move forward, little will get accomplished. Business cannot count on a move to the cloud bubbling up from the ranks either of the IT group or from LOB managers. In the end, it will take leadership from the top of the company to dictate the direction.

Technology Enablers

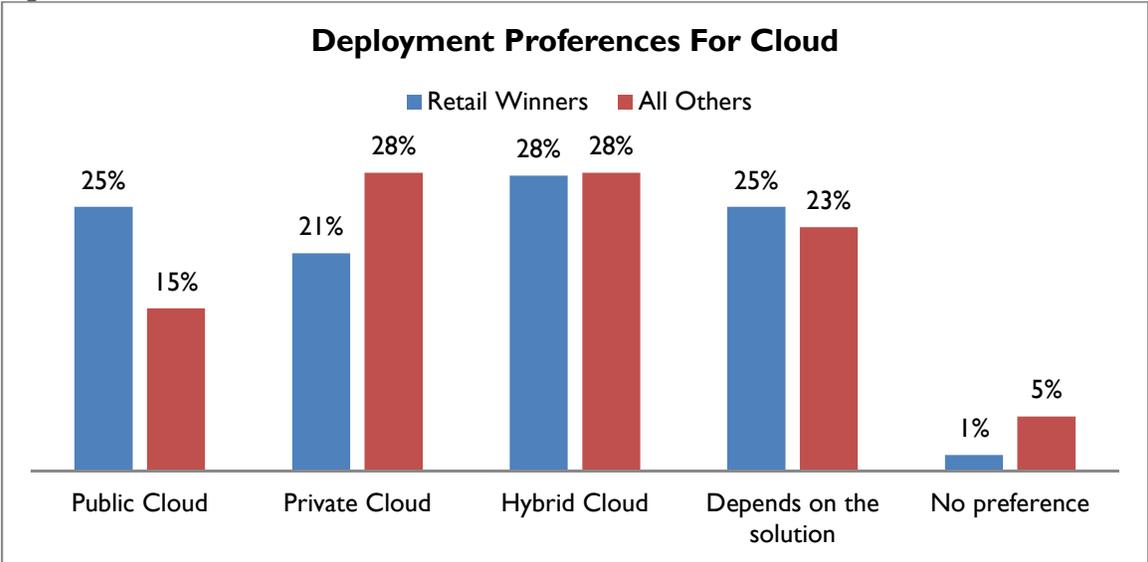
Preferences? Not Yet

Despite the reservations that retailers expressed in the **Organizational Inhibitors** section of this report, the fact remains that companies are drawn to the advantages that cloud providers promise, particularly advancing business functionality faster, saving time and money, and being more nimble and agile in their response to market changes. The need is great and the potential is enormous, and so many retailers are proceeding to plan a migration to the cloud.

But which type of cloud? It turns out that retailers as a whole aren't locked into any one strategy, although Retailer Winners show a slightly greater level of confidence in public clouds, while non-Winners slightly prefer a private cloud strategy (Figure 16).

Looking further inside the responses, we see that while there is little variation by vertical or revenue band, the largest retailers (those with over \$5B in sales) lean more towards a private cloud strategy, 33% compared to all others. This finding intuitively makes sense; we saw earlier how the largest retailers tend to worry most about migrating their legacy (and likely highly customized) code base to the cloud. Some of these same retailers see a "corporate cloud" as their best way forward, indicating a desire to extend legacy functionality with API's and micro-services, rather than to engage in a wholesale migration to the cloud. Thus, they are willing to take on the capital costs associated with owning the environment.

Figure 16: Whatever Works



Source: RSR Research, April 2019

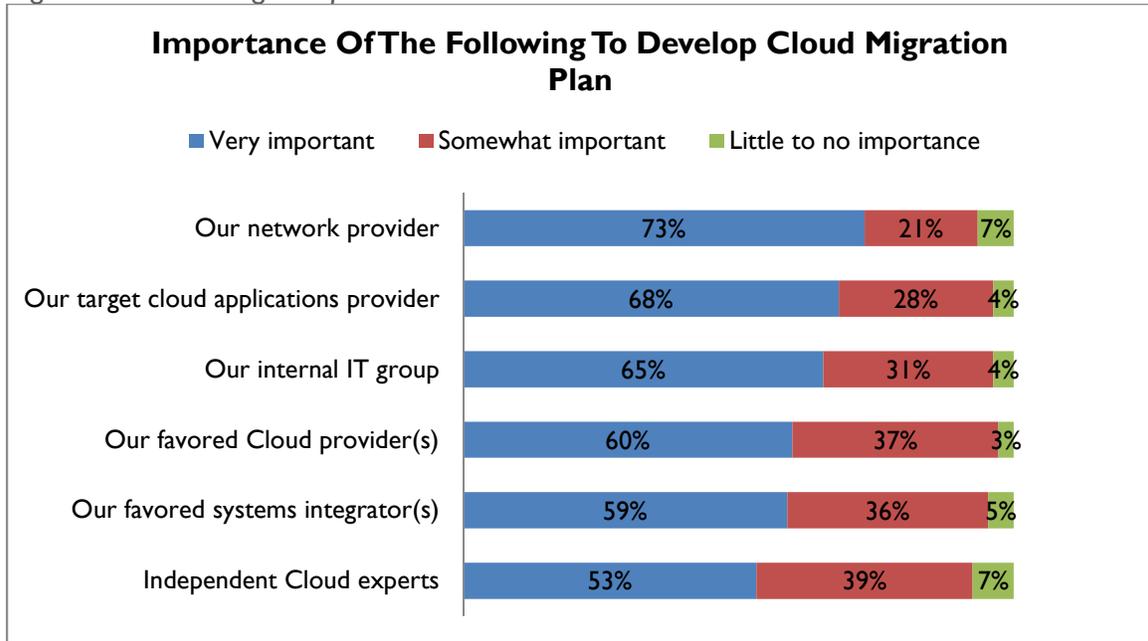
Generally, retailers seem to be saying, "whatever works" – they lean towards either a hybrid environment or whatever environment the chosen business solution dictates. But by geography, American retailers most favor a hybrid environment (32%) whereas UK retailers take more non-committal position: "<lt>depends on the solution" (41%).

Netting it out, retailers are fairly non-committal about which type of provider has the most compelling value proposition. Undoubtedly, their generally agnostic position is the result of inexperience, more than the ubiquity of the cloud alternatives available to them at this time.

Calling In The Experts

Given retailers' relative inexperience with cloud environments, it's encouraging to see that they are not afraid to seek outside expertise during the planning phases of their migration projects. What is a little surprising is the relative importance that retailers assign to their helping hands. Across verticals and performance, retailers seek cloud expertise from their network providers first (Figure 17). The only difference of opinion comes - once again - from the largest retailers (>\$5B in revenue) who overwhelmingly look first to their internal IT group for guidance (95%). For reasons we've already discussed, this is consistent with their general point-of-view about the difficulty in migrating their legacy portfolios to the cloud.

Figure 17: Getting Help



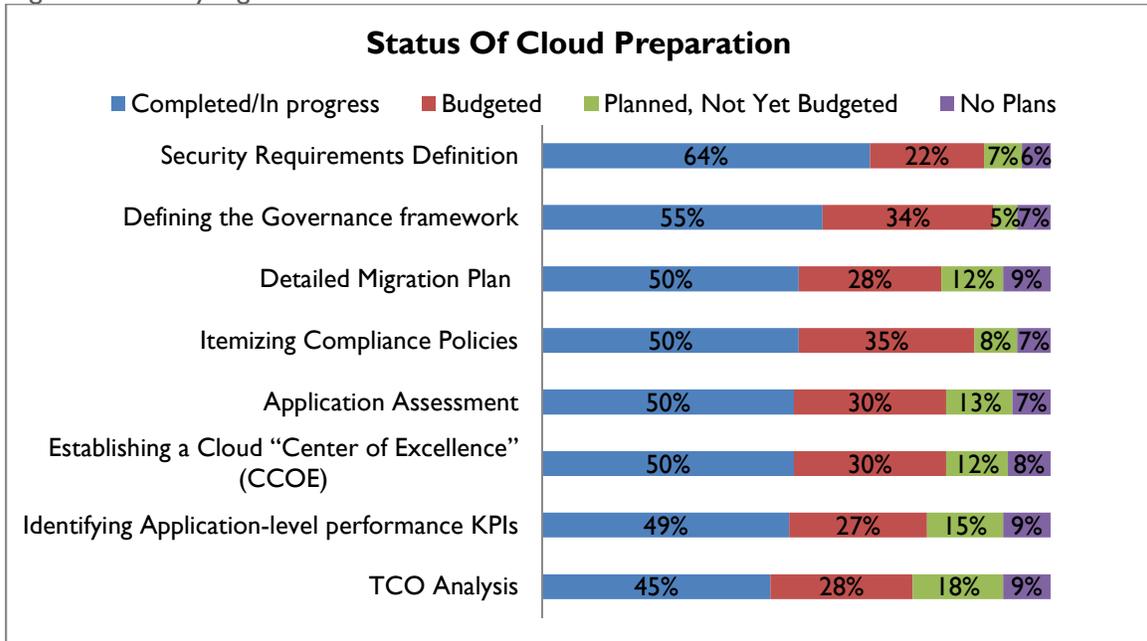
Source: RSR Research, April 2019

Beyond seeking expertise from the network provider, retailers' preferences are clear. The only "loser" in this list is unaffiliated "independent cloud experts". Retailers clearly most favor participants who have something at risk.

Planning, And More Planning

We saw earlier the top operational challenge retailers hope to overcome with cloud computing pertains to data integrity and security (Figure 6), but we also saw that it is their top concern about cloud computing (Figure 11). So it's highly consistent that retailers have made the most progress in the migration planning stages in developing a "security requirements definition" (Figure 18).

Figure 18: Laying The Groundwork

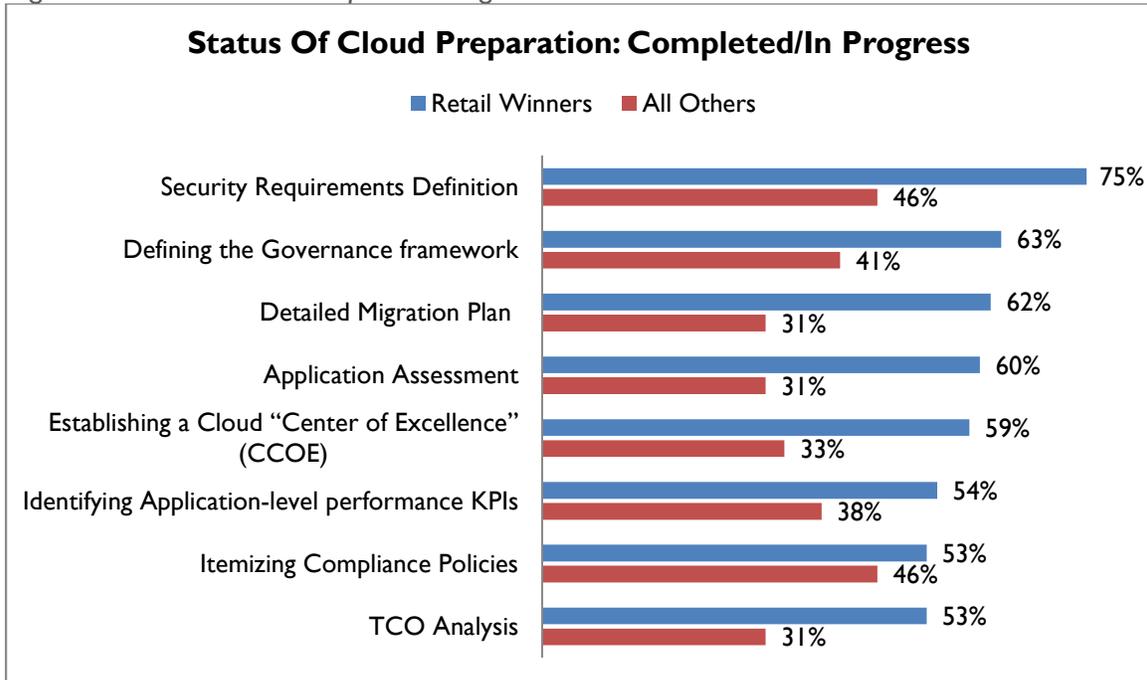


Source: RSR Research, April 2019

Other planning tasks aren't far behind, the only oddity being that retailers lag in developing a Total Cost of Ownership (TCO) analysis for a migration.

When we look at the planning tasks by performance, the order of the tasks is almost identical, but Retail Winners are far ahead of their lesser performing peers (Figure 19).

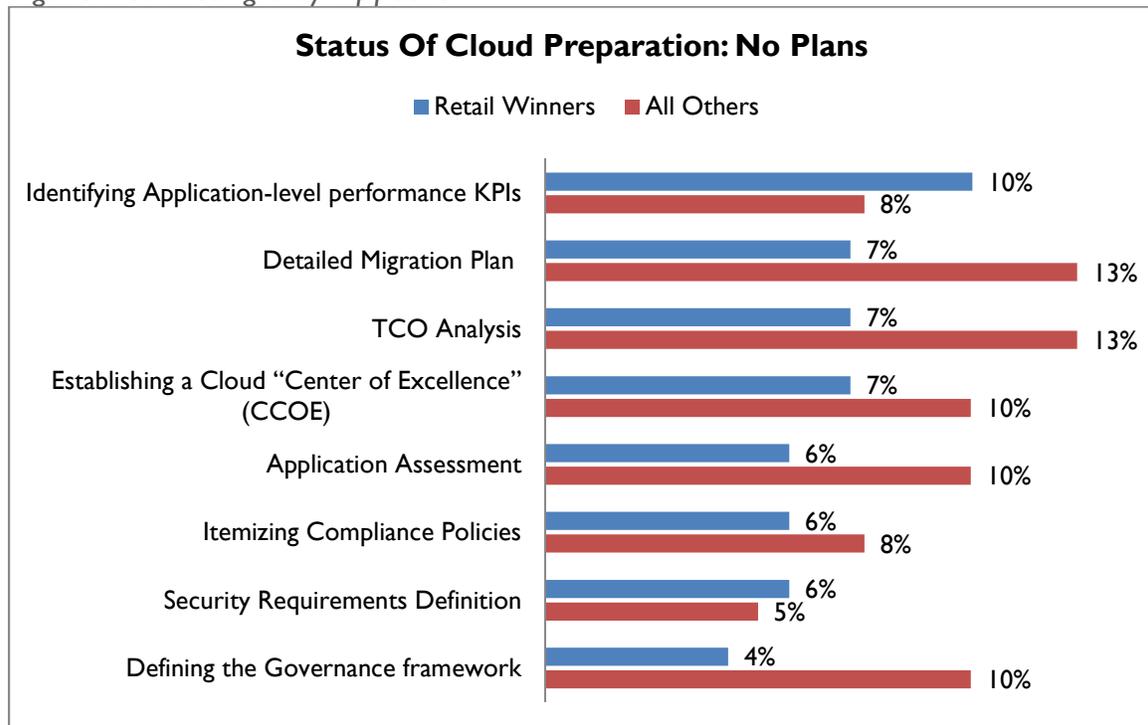
Figure 19: Winners Keep Winning



Source: RSR Research, April 2019

What is more interesting – and incongruous – is the number of retailers that have no plans to undertake certain planning tasks (Figure 20). As one might expect, fewer Winners than others report “no plans” to the various tasks. But where retailers lag is instructive, *especially when it comes to developing a detailed migration plan and conducting a TCO analysis. We have to assume that these are the number of retailers who aren’t considering a migration to the cloud at this time*, since entering into a migration effort without having started these tasks would be tantamount to malfeasance.

Figure 20: Incongruity Appears



Source: RSR Research, April 2019

The Bottom Line On Technology Enablers

It’s clearly early days for an enterprise-wide migration to the cloud, although retailers undoubtedly have been running some cloud-based applications for some time (especially for e-Commerce and Marketing). And whether it’s IT or business management that is pushing the go faster button, retailers across the spectrum of size, vertical, and performance band are clearly investing time and personnel into planning for a move towards the cloud. How quickly or completely they make that transition is still an open question, but the direction is clear.

Now it’s up to those partners who have a significant stake in retailers’ continued success (network providers, cloud application providers, systems integrators, cloud platform providers, and integrators) to commit to helping retailers take the next big steps.

BOOTstrap Recommendations

In theory, cloud computing's compelling value is that it accelerates the adoption of business applications while at the same time freeing companies from the complexities of 'owning' the computing environment. Cloud providers also tout flexible configurability, faster software development capabilities, an improved ability to collaborate, better disaster recovery options, modern business solutions based on Internet native design principles, and smaller capital expenditures. All of these value propositions are *interesting*. But retailers have to decide which of those promises are actually *important* for the business. Depending on the challenges that retailers face and the opportunities they see, their rationales for moving to the cloud can be quite different.

With the provision that the business rationale for considering a move to the cloud may differ from company to company, there are still several recommendations that we offer to retailers based on our observations in this study:

Realize That Cloud Technologies Aren't A Silver Bullet

Cloud computing is just the latest turn of the information technology wheel. Although it's easy to get caught up in the excitement surrounding Cloud-related technologies, stay focused. **Be explicit in your business expectations, and demand that those providers that you are working with are explicit in how they will meet your expectations.** How it gets done is secondary.

Take The Opportunity To Buy Goodwill With This Early Win

Many retailers have traditional – and very expensive - disaster recovery (DR) plans in place, which include replicated hardware, a complete duplicate of the operating environment and application portfolio, and duplicated data. But spinning up a backup site takes time, transactional data may be lost, and the business will experience some down time. On the other hand, cloud-based DR plans use virtualization technology to take an image of the entire production environment. This virtual image can be backed up to an offsite data center in the cloud and can be activated in a matter of minutes in the event of a disaster – at far lower cost. In spite of the obvious benefits of cloud-based DR, only 1% of our survey respondents rated it as "important". **RSR recommends that retailers take advantage of this opportunity early on, for the obvious reasons that it will (1) save money, (2) offer more security, and (3) showcase the benefits of the cloud.**

Establish A Cloud Center Of Excellence

This study highlights that internal IT departments are excited that cloud computing will act like a "go faster" button and help them to catch up with the increasing demands of the business. But as we stated earlier, cloud computing won't magically accomplish that goal. **An internal "cloud center of excellence" (CCOE)** should be established to address some of retailers' top concerns about cloud computing, including data security requirements, a governance model, TCO analyses, standards compliance considerations, performance and service level KPIs, and "best practices" for developers. In this study, almost twice as many Retail Winners as average and under-performers have or are in the process of establishing a CCOE, but **any company that is seriously considering a migration to the cloud should establish a CCOE at the start.**

Cloud Services Won't Automatically Integrate With Legacy Apps

The Top-2 opportunities that retailers hope to achieve from cloud computing have to do with adapting to market changes more quickly, including having the ability to quickly add new capabilities "on top of" legacy applications. **That *can* be accomplished *if* the retailers invest the**

time and effort to establish an integration layer between services available in the cloud and on-premise legacy applications. Cloud practitioners recommend implementation of an API (“application programming interface”) layer between services cloud-based services and legacy applications. The good news is commercial API layers can be had – for a price.

Expect To Operate In Dual Mode For Years

Few companies have the luxury of being able to re-tool their computing environment from the ground up. The analogy of “changing tires while driving the car” is an apt one. So, while retailers can lean on cloud services providers to control the quality of software version releases and maintain service levels, the legacy environment must continue to operate. Assuming some level of integration between new services via the cloud and legacy on-premise applications, many companies have implemented a “DevOps” discipline, which is essentially a collaborative methodology between developers and systems operations, to enable continuous testing of code changes, integration testing, and maintaining a continuous delivery to the production environment.

Recognize that this is as much a cultural change as it is a technology change!

Develop A Roadmap

It should go without saying: “Rome wasn’t built in a day”. Prioritize applications to be migrated to the Cloud according to the business need. Many retailers already depend cloud-based business applications for e-Commerce, Marketing, Human Resources management, and Analytics. This study shows the priorities that surveyed retailers assigned to business functions (Figure 10), but **each retailer must decide for itself what the most important candidates for modernization are.**

As a side note, we were disappointed to learn that transportation and logistics, sourcing, and last-mile delivery optimization aren’t high priorities for retailers – they should be.

Get Guidance From Those That Have a Vested Interest In Your Continued Success

As it happens with any new breakthrough technology, the world is suddenly awash with cloud computing experts. It’s in a retailer’s best interests to ask for guidance from companies who have a long-term interest in its continued success. Retailers give most weight to their network providers to help them navigate the complexities of cloud adoption. That makes sense – the network is probably the most foundational component of the technology environment. Second in importance is the “target” cloud applications provider. Again, that makes perfect good sense – after all, they are selling the features, function, and reliability of their cloud solution.

Do You REALLY Need That Customization?

Retailers are (in)famous for demanding customizations to commercial applications so that the code will conform to their peculiar ways of doing business. Before making customization demands that make it impossible to adopt a multi-tenant solution, retailers need to ask themselves if the “need” is real. **Ask yourself, “will my customers drive past a competitor to shop with us because we have this unique capability?”** If the answer is “no”, think about modifying the business process to conform to the capabilities of the cloud app.

Now More Than Ever: Get Top Level Buy-in

Despite the fact that IT’ers are most excited about the possibilities of cloud computing, adoption of the cloud is a business- not a technology – decision. Such a change is far bigger than just choosing

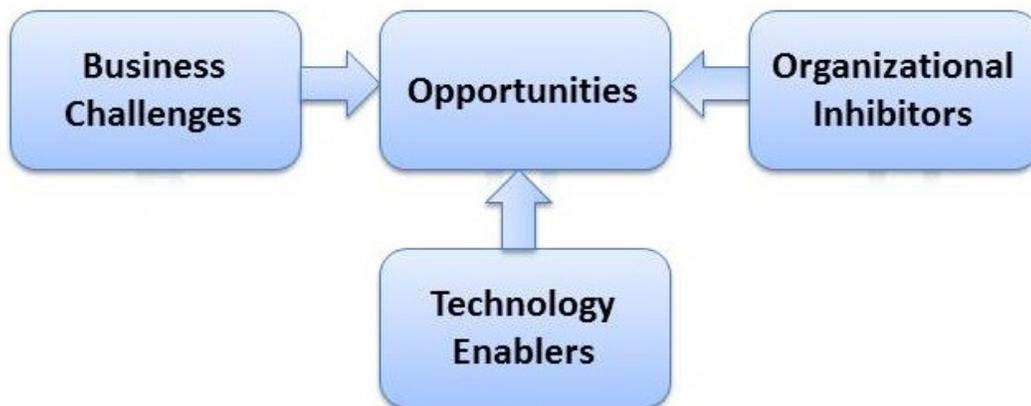
a new programming language. The CEO and operating committee must be solidly behind a move to the cloud. Don't proceed without it.

Appendix A: The BOOT Methodology[®]

The BOOT Methodology[®] is designed to reveal and prioritize the following:

- **Business Challenges** – Retailers of all shapes and sizes face significant **external** challenges. These issues provide a business context for the subject being discussed and drive decision-making across the enterprise.
- **Opportunities** – Every challenge brings with it a set of opportunities, or ways to change and overcome that challenge. **The ways retailers turn business challenges into opportunities often define the difference between Winners and “also-rans.”** Within the BOOT, we can also identify opportunities missed – and describe leading edge models we believe drive success.
- **Organizational Inhibitors** – Even as enterprises find opportunities to overcome their external challenges, they may find **internal** organizational inhibitors that keep them from executing on their vision. Opportunities can be found to overcome these inhibitors as well. Winning Retailers understand their organizational inhibitors and find creative, effective ways to overcome them.
- **Technology Enablers** – If a company can overcome its organizational inhibitors it can use technology as an enabler to take advantage of the opportunities it identifies. Retail Winners are most adept at judiciously and effectively using these enablers, often far earlier than their peers.

A graphical depiction of the BOOT Methodology[®] follows:



Appendix B: About Our Sponsors

CLUDERA

At Cludera, we believe data can make what is impossible today, possible tomorrow. Cludera delivers an enterprise data cloud for any data, anywhere, from the Edge to AI. We enable our customers to transform vast amounts of complex data into clear and actionable insights to enhance business capabilities. Powered by the relentless innovation of the open source community, Cludera advances digital transformation for the world's largest enterprises. Achieve the impossible with [Cludera](#).



Salesforce helps retailers engage and inspire customers throughout the entire retail journey, bringing seamless interactions across Service, Marketing, and Commerce that are powered by a single view of the customer.

For more information, visit: <https://www.salesforce.com/solutions/industries/retail/overview/>.

Appendix C: About RSR Research



Retail Systems Research (“RSR”) is the only research company run by retailers for the retail industry. RSR provides insight into business and technology challenges facing the extended retail industry, providing thought leadership and advice on navigating these challenges for specific companies and the industry at large. We do this by:

- **Identifying information** that helps retailers and their trading partners to build more efficient and profitable businesses;
- **Identifying industry issues** that solutions providers must address to be relevant in the extended retail industry;
- **Providing insight and analysis** about a broad spectrum of issues and trends in the Extended Retail Industry.

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