Stores Are Ground Zero in Digital Transformation

A spike in network upgrade activity will enable stores to become gateways to innovation and digital transformation

BY JOE SKORUPA

In the current era of retail reinvention, stores have emerged as proving grounds for technologies that blend the digital and brick-and-mortar worlds. Inspired by consumer expectations, stores have become gateways to innovation and digital transformation.

Many retailers are pioneering the use of mobile devices for associates, omni-store services in the cloud, endless-aisle ordering of products unavailable on shelves, pick up and return of web purchases, magic mirrors, RFID, location-sensors and mobile POS. All of these technologies are part of a retail revolution that has put brick-and-mortar stores on the front lines of an industry-wide shift to a digitally transformed future.

It is worth noting that all of today's disruptive and advanced technologies have one thing in common: they are dependent on the store network for success.

This is good news and bad news. The good news is many technologies have proven benefits and use-case examples that show a path to value if deployed correctly. The bad news is the benefits won't materialize if performance is degraded by store networks not designed to accommodate increased workload.

Many retailers are making smart investments in new store technologies, but unless the projects have realistically assessed network readiness they could deliver post-implementation disappointment or outright failure. These outcomes are not uncommon when retailers discover too late they have unreliable WiFi coverage in stores, insufficient bandwidth to handle new applications, or inadequate network control to ensure that high-priority bandwidth is available for key applications.

Store Infrastructure Today

In this *RIS* Targeted Research report, we explore the status of store networks today and where they are heading in the near future, as well as context surrounding the important

FIGURE 1

Status of store network infrastructure's ability to manage requirements today and in 18 months

	INADEQUATE FOR CURRENT WORKLOAD AND FUTURE PLANS	ADEQUATE FOR CURRENT WORKLOAD BUT NOT FOR FUTURE PLANS	ADEQUATE FOR CURRENT AND FUTURE WORKLOAD
Wi-Fi For Customers	24%	24%	48%
Wi-Fi For Manager And Associates	9%	18%	70%
WAN Bandwidth	6%	33%	61%
LAN Management And Control	3%	21%	76%
Security	9%	33%	58%

FIGURE 2

Current network infrastructure in stores

Wi-Fi	88%
Ethernet	64%
Cable	42%
Fiber	42%
4G	36%
WAN	27%
T1 Lines	21%
MPLS	18%
VLAN	18%
SD-WAN	15%
DSL	15%
Satellite	12%
3G	9%

FIGURE 3

$3,900

Average network cost for hardware, software, monthly fees, maintenance, and staff per store per year.

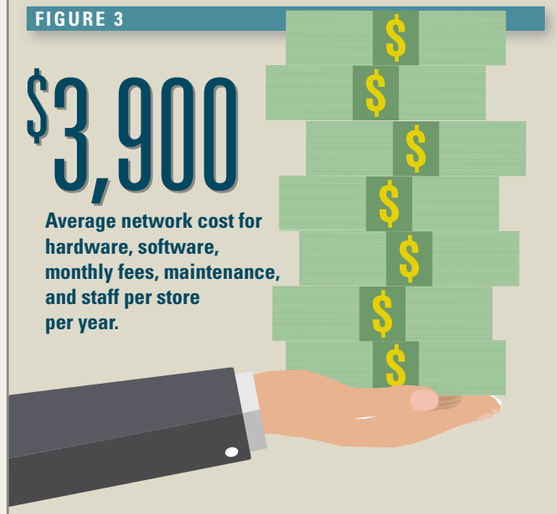


FIGURE 4

Future applications that will have a major impact on current store networks

Wi-Fi for customers	61%
Mobile devices for associates and manager	52%
Training and education	48%
Omni-capabilities (order from web, check order status, etc.)	45%
Mobile POS	42%
Shopper tracking	42%
Digital displays (signage, magic mirrors, etc.)	36%
Mobile workforce and/or HR applications	27%
RFID	18%
Employee monitoring	15%
Location-based sensing	12%
Electronic shelf labels	12%
Clienteling/guided selling	9%
SaaS applications	6%

FIGURE 5

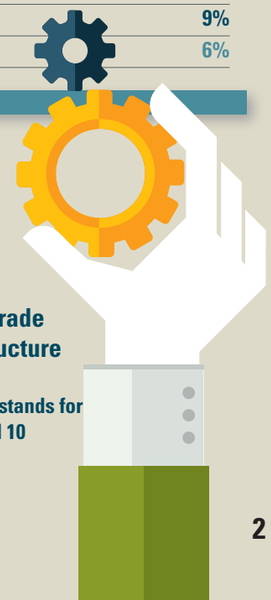
Top business goals for store-level network infrastructure

Improve the customer experience	78%
Increase staff productivity	50%
Support employee engagement (providing useful tools)	38%
Support omnichannel or unified commerce initiatives	34%
Increase size of market baskets	31%
Improve promotional effectiveness	28%
Collect more store data for analysis	28%
Improve customer conversions	25%
Save the sale (when product not available in the store)	22%
Build agile and robust infrastructure for future needs	19%
Endless aisle (ordering product not carried in store)	13%
Support shift to cloud solutions	13%
Build a key component of digital transformation	9%

FIGURE 6

6.3

Priority rating placed on carrying out plans to upgrade in-store network infrastructure as needed
(On a scale of 1-10 where one stands for the lowest level of priority and 10 the highest.)



changes that are occurring.

Study data finds most retailers feel confident their store networks can manage workloads today and for the foreseeable future. Really? (See Figure 1.)

Store networks, like infrastructure in general, are only noticed when they fail. As long as the network is up and running, few executives pay attention to the need for constant maintenance, service and upgrading. This out-of-sight and out-of-mind mentality is probably why 58% of respondents say security is adequate for current and future workloads. Again, really? It may also be the reason behind the 70% who say WiFi for managers and associates is adequate. Hmmm.

The likely reason for this confidence is a slight disconnect between top-level executives, those who typically respond to *RIS* surveys, and direct managers of store infrastructure. There are just too many stories in retail about associates unwilling to use mobile POS due to poor device performance to justify such high confidence levels.

Fortunately, about half of retailers recognize their WiFi is inadequate for customers and this may drive in-store network upgrade plans. This group consists of 24% who say their current WiFi for customers is inadequate and another 24% who say it is inadequate for future plans.

The key elements in store networks today include: WiFi (88%), ethernet (64%), cable (42%), and fiber (42%). Software defined WAN (SD-Wan), a relatively recent management and control technology that ensures high-priority bandwidth is available for key applications, is currently in about 15% of stores, a number that will surely rise as store network demands increase. (See Figure 2.)

Although it appears many senior-level executives don't pay sufficient attention to the status of their store networks, the **cost of these networks is worth paying attention to at $3,900 per store per year.** This includes hardware, software, monthly fees, maintenance, and staff. (See Figure 3.)

For a small retail chain with 100 stores, the cost per year is $390,000. For a mid-size chain with 250 stores the figure is $975,000, essentially a million dollars per year. For a large chain of 500 stores or more the figure easily goes into the millions of dollars.

Future Store Network Demands

As noted in Figure 1, about half of retailers believe WiFi networks for customers in their stores is inadequate for their future needs. This is confirmed in Figure 4, which shows that 61% of

FIGURE 7

Ever postponed new in-store technology because of network limitations?

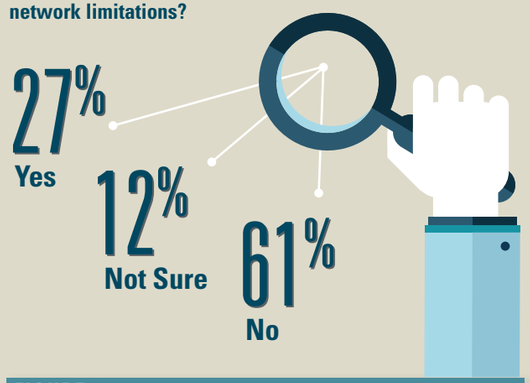


FIGURE 8

Time frame for next major upgrade to store-level infrastructure

Within 6 months	9%
12 months	30%
18 months	12%
24 months	12%
>24 months	36%

FIGURE 9

Top areas of emphasis for next store network infrastructure upgrade

Fiber
POS (hardware and software)
SD-WAN
Security

FIGURE 10

6.8 **Satisfaction level with current ecosystem of hardware, software and services providers that contribute to store network infrastructure.**

(On a scale of 1-10 where one stands for the lowest level of satisfaction and 10 the highest.)

FIGURE 11

Biggest store network infrastructure challenges

Maintaining security	58%
Insufficient bandwidth (Wi-Fi is slow)	36%
Difficulty making changes across all stores	24%
Dead spots/dropped connections	21%
Inability to manage high-priority users/applications	21%
Treating stores as their own IT installations	18%
Achieving remote/ centralized management	15%

FIGURE 12

Annual revenue

< $100 million	33%
$100 million to $500 million	24%
$500 million to $1 billion	12%
$1 billion to $5 billion	15%
> $5 billion	15%

retailers understand their future plans to add store applications will have a major impact on their networks.

More than half (52%) say mobile devices for associates and managers cause a major impact on their store networks. Other plans that will also impact store networks include: applications for training and education (48%), omni-capabilities (45%), mobile POS (42%), and shopper tracking (42%). This long list of applications will clearly have a major impact on store networks in the near future.

As retailers proceed with these roll outs they will count on store networks to support the key business goals of each project. (See Figure 5.) **Topping the list of business goals sought by adding new applications to stores is improving the customer experience, which was chosen by 78% of retailers. In second place is increasing staff productivity (50%).**

With so much riding on the line for stores in the age of reinvention, we wanted to get a sense of prioritization that retailers have for carrying out necessary upgrades in their store infrastructure. On a scale of 1-10 where one stands for the lowest level of priority and 10 the highest, retailers give a 6.3 rating to the importance of carrying out necessary store network upgrades.

This score indicates middle-of-the-road prioritization. In other words, there is no sense of urgency. This conclusion points to another disconnect in understanding the role played by networks in supporting the success of technology deployments. In this case, the disconnect occurs between setting goals for stores and the ability to achieve them caused by disappointing network performance.

In a worst-case scenario, limitations in store networks are actually fully understood and the IT team is forced to postpone adding a new application or system to avoid performance failure. This has occurred for more than a quarter of respondents (26%). Six out of 10 (61%) say this worst-case scenario has not occurred in their organizations. (See Figure 7.)

Store Network Upgrade Plans

One indication that store network limitations may become less of an issue in the near future is the high level of upgrade activity retailers are planning. More than half (51%) say their next store network upgrade will occur within the next 18 months. This group includes 9% who will upgrade within six months, 30% who will upgrade within 12 months, and 12% who will upgrade within 18 months. (See Figure 8.)

Top upgrade technology areas are fiber, POS (hardware and software), SD-WAN, and security. (See Figure 9.)

The biggest challenges retailers want to solve with network upgrades are security (58%) and insufficient WiFi bandwidth (36%). Other areas cited by a large number of retailers in Figure 11 include: Difficulty in making changes across all stores (24%), dead spots and dropped connections (21%), and inability to manage high-priority users and applications (21%).

Methodology

This study was conducted during the month of April and only senior executives from national or large regional retailers were invited to participate. The results do not include any store-level, field-level or regional employees. Only headquarters-level staff responses were included.

Conclusions

As stores become laboratories for advanced technologies attempting to blend the digital and brick-and-mortar worlds, they also become testing grounds for what store networks can and cannot do.

Inspired by consumer-led demands, retailers have shown a willingness to experiment with in-store reinvention. This includes testing, piloting and rolling out a host of network-dependent technologies, such as mobile devices for associates, omni-store services in the cloud, endless-aisle ordering of products unavailable on shelves, pick up and return of web purchases, magic mirrors, RFID, mobile POS, and more.

But there appears to be a disconnect between the long list of applications retailers plan to roll out and the store networks in place to support them. A majority of retailers believe their current store networks are in great shape today and many also believe they are adequate for managing future needs.

Despite this high confidence level, more than a quarter retailers have postponed rolling out new applications because of network limitations.

Fortunately, the disconnects uncovered in the study may be just issues of timing, because one of the major findings in the study is that a big majority of retailers is planning to make a store network upgrade within the next 18 months. These upgrades should go a long way toward solving current limitations and enable stores to become customer-driven gateways for innovation and digital transformation. RIS

FIGURE 13

Revenue last 12 months

Decreased	24%
Increased up to 5%	55%
Increased more than 5%	21%

One of the major findings in the study is that a **majority of retailers is planning** to make a store network **upgrade within the next 18 months.**

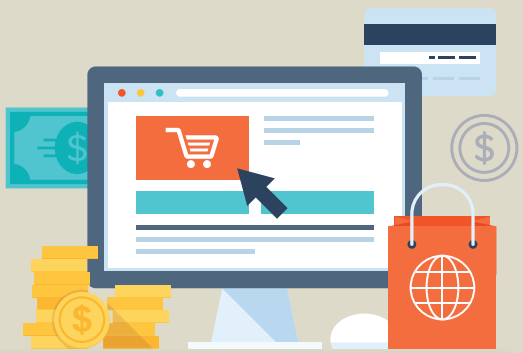


FIGURE 14

Retail segment

Grocery/Convenience/Drug	45%
Specialty (sporting goods, electronics, crafts, gifts, beauty, etc.)	27%
Apparel	15%
Mass market/General merchandise/ Discount	6%
Other	6%