

Research Study:

2015 Store Infrastructure Study Impact of Store Networks and WiFi on Customer Experience



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About IHL Group

Who We Are

IHL Group is a global research and advisory firm specializing in technologies for the retail and hospitality industries. The company, based in Franklin, Tenn., generates timely data reports, offers advisory services and serves as the leading retail technology spokesperson for industry and vendor events.

What We Do

IHL provides customized business intelligence for retailers and retail technology vendors, with particular expertise in supply chain and store level systems. Our customers are retailers and retail technology providers who want to better understand what is going on in the overall technology market, or wish to identify specific equipment needs for the retail market.

When We Started

Greg Buzek served as Product Development Manager for two Fortune 500 retail technology suppliers for 6 years. Faced with making recommendations to senior management with spotty reports stuffed with technical jargon and unsubstantiated data, in 1996 he left to form IHL Group as an arms length consulting firm that delivers exacting research to corporate managers.

How We Work

Reliable market analysis is essential for corporations to accelerate revenue and expand their market share. Most research providers do not disclose data sources or statistically defend the validity of their assumptions. We do. We disclose in precise detail exactly how and why we reached our conclusions so that our customers can be comfortable with the data they are using.

What We Know

Our associates and advisors have over 100 years combined years of retail technology experience. Our associates have worked as product managers, sales representatives and executives in the retail market. We have the relationships, tools, and experience to meet your research and consulting needs.

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INTRODUCTION

Background and Objectives

Over the course of the past couple of years, a fundamental change has started in the architecture of store IT systems. While a detailed discussion about this subject is beyond the scope of this study (we do take time to detail it in our [Retail 2018 - Retail Transformed](#) study), some of the foundational and complicating issues are as follows.

- Distributed Order Management (DOM) represents a serious departure from traditional store systems siloes, but it can help retailers get to a "single version of the truth" that allows for a consistent customer data experience across channels.
- Mobile technology has changed how customers shop and how store associates interact
 - Still, less than half of retailers effectively use customer profiles in their stores
- There is no centralized returns management
 - Returns accounted for \$15 Billion more than e-Commerce sales this past Christmas shopping season
- Omnichannel, especially ship-from-store, requires significant store pipe-size increase
 - Beacons and IOT (Internet of Things), while not big yet, it will be soon.

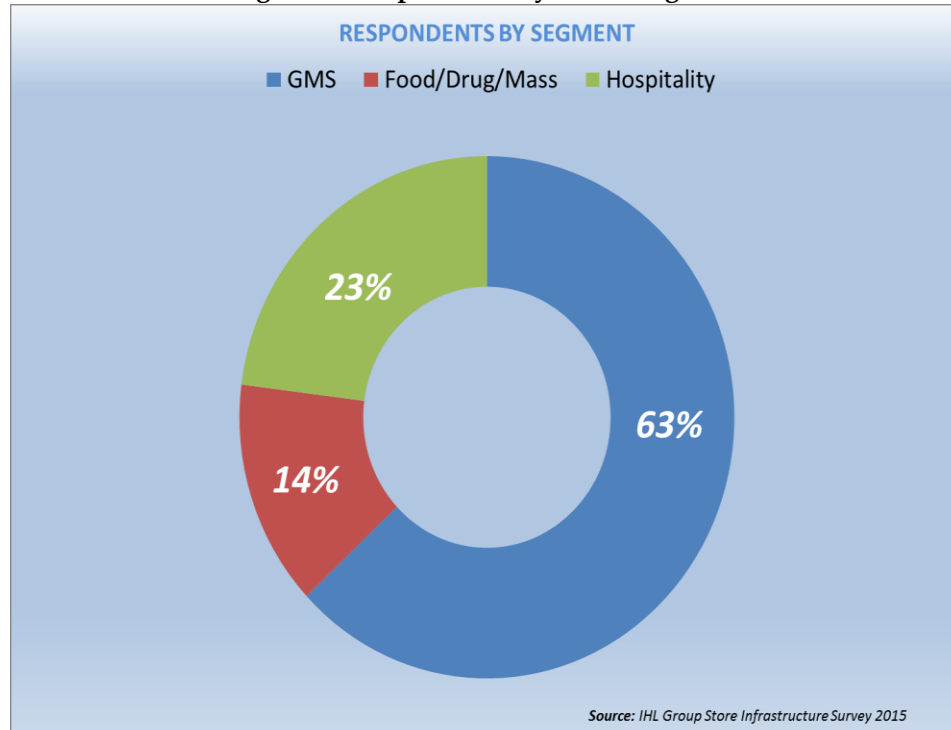
What became very obvious from these results was that there is a tremendous need for a communications infrastructure upgrade at the store level if retailers wish to achieve the goals of fulfilling an Omnichannel strategy and generating a positive customer experience. What had yet to be measured, however, is just where retailers were on the upgrade path and what was the ROI for those who have already completed an upgrade.

This study is the result of an online survey of over 100 retailers regarding their readiness in key WAN, Wireless, and Security initiatives that must be complete for their vision to become a reality. The results really surprised us. Although we have heard anecdotes of upsell opportunities when WiFi and associate mobile is used, for the first time we have the data to quantify that impact to the average retailer of such an upgrade.

1.0 DEMOGRAPHICS

1.1 Retail Segments

Figure 1 - Respondents by Retail Segment

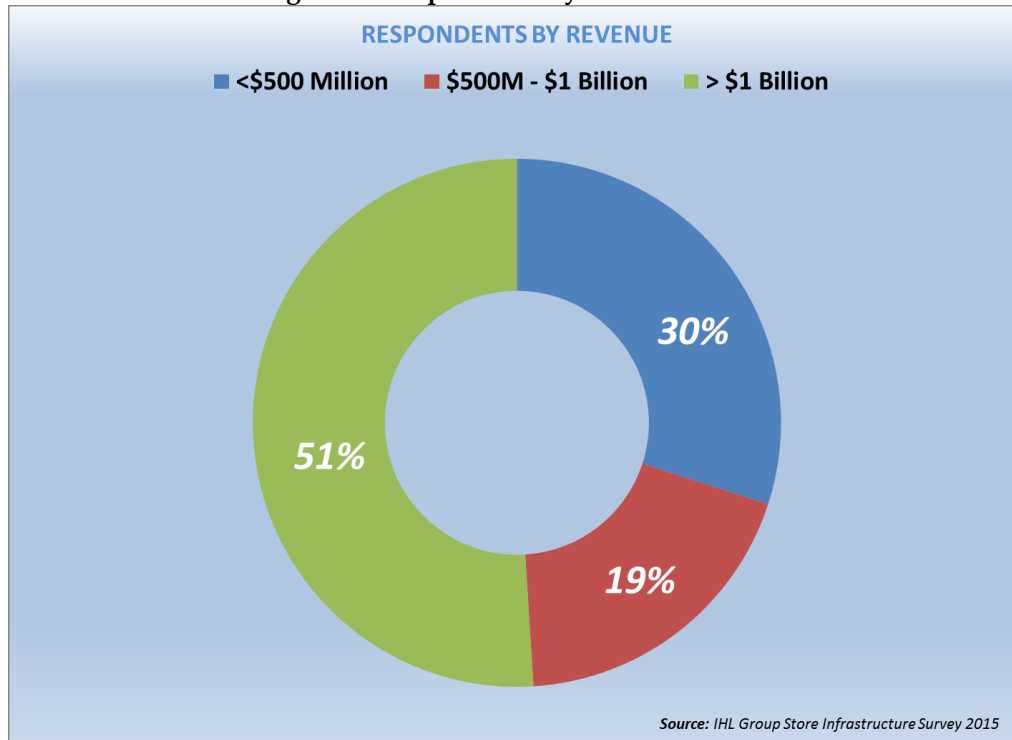


Our respondents covered the full spectrum of retail and hospitality. The nearly two-thirds of respondents (63%) that were in the Specialty (both hard- and softgoods) and Department Store segments may seem heavily biased, but the reality is that this is a reasonable approximation of the retail landscape in terms of the number and types of chains operating today. Hospitality consisted of 23% of the respondent population, and Food/Drug/C-Stores/Mass Merchants (FDC going forward) the remaining 14%.

One core thing to keep in mind as we share these results; although data is segmented by size of retailer, the data is not weighted based on size. For the sake of these results, a \$500 million retailer is the same as a \$50 billion retailer. 1 = 1. The data simply denotes the number of decisions to be made, not necessarily the full impact on the market. Needless to say, if we did weight the results the market for infrastructure upgrades would be quite bullish.

1.2 Annual Retailer Revenues

Figure 2 - Respondents by Retail Revenue

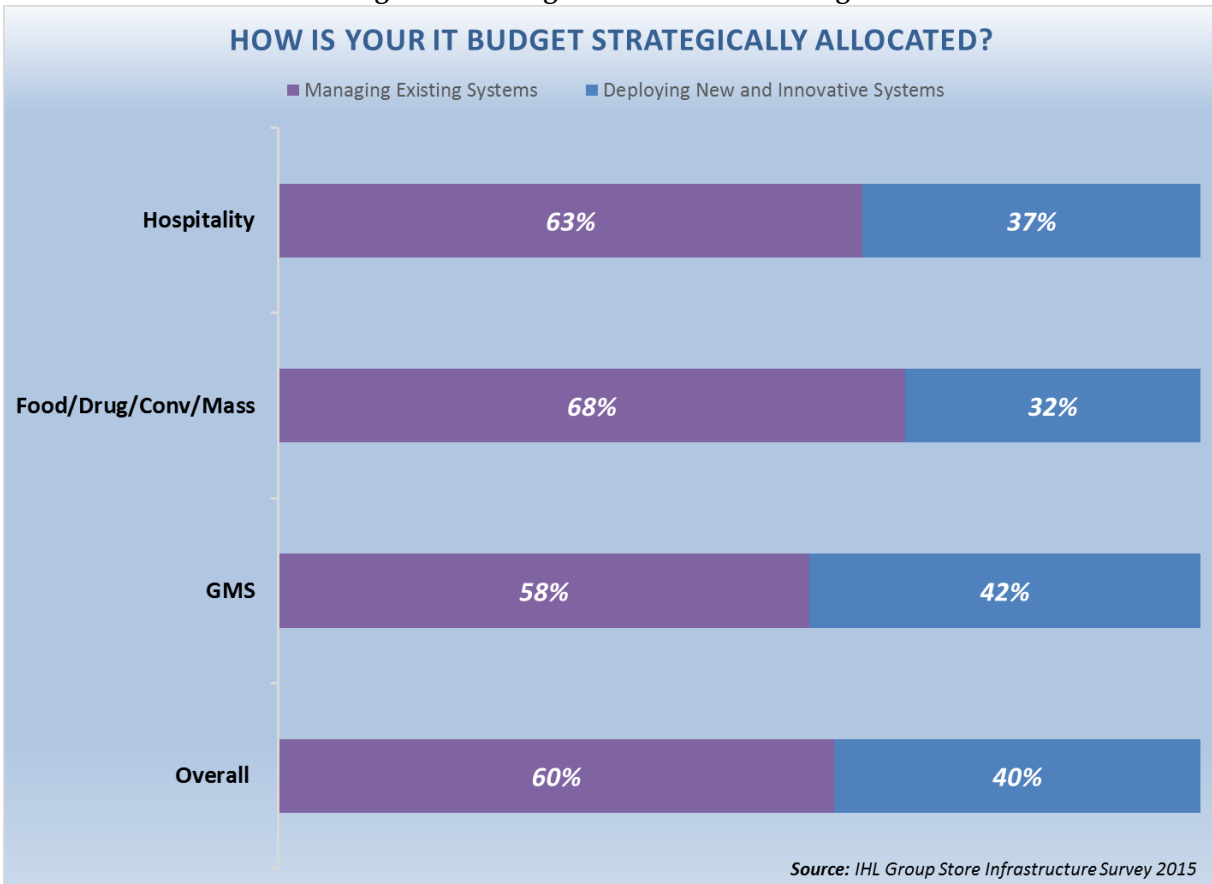


At IHL, we identify Tier I retailers as those who do over \$1 billion in annual revenue, Tier II retailers as those who recognize \$500 million to \$1 billion in revenue, and Tier III retailers as those whose annual revenue falls below \$500 million dollars. More than half (51%) of the respondent population were Tier I retailers, while 19% were in Tier II and 30% in Tier III.

In North American retail, there is no doubt that Tier I and Tier II retailers drive the market. These retailers are the early adopters and set the stage for what technologies will be in play going forward. At the same time, Tier III retailers work hard to keep pace with their larger competitors, and in many cases are able to deploy more advanced technology more quickly (due to their small size) than their big brothers. Taken together, this indicates that the survey respondents are retailers that are looking ahead and buying now; in short, retailers who are in the know.

2.0 IT BUDGET FOR INNOVATION

Figure 3 - Strategic Allocation of IT Budget

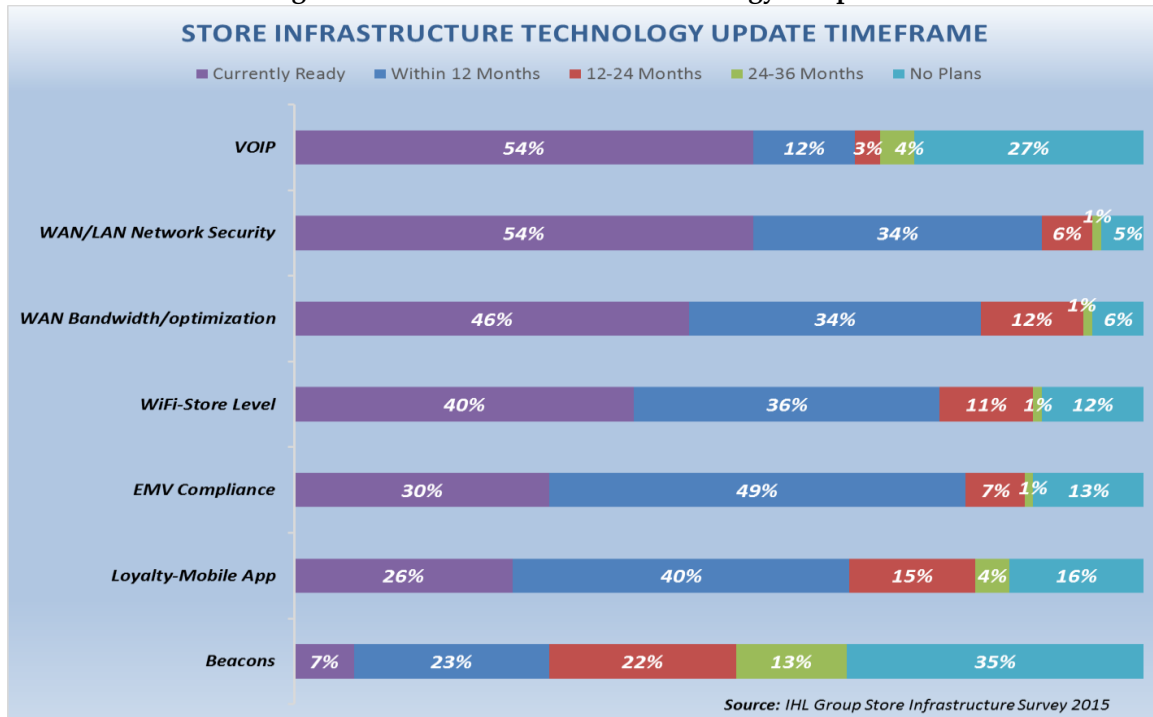


One of the factors that we researched in this study was to see if there is a change in the percent of IT budget that retailers have for innovation. Historically, retailers only had 15-30% of their budget available for new innovative systems and 70-85% was used simply to keep the lights on for existing systems and to pay for depreciation. One point is clear, retailers are spending a much larger percentage of their budget on innovation. Some of this is due to Software as a Service spending, some is reduction of hardware and thus depreciation expense, but at least half of the gains appear to be coming from a specific willingness on the part of retailers to spend more on new systems for their future. This is terrific news for consumers and for the industry as a whole.

The area with the biggest jump has been those General Merchandise retailers like Specialty Stores where over 40% of IT spend goes towards new systems.

3.0 STATUS OF INFRASTRUCTURE UPDATE

Figure 4 - Store Infrastructure Technology Adoption



This chart shows the current status of various store-based infrastructure technologies. VOIP and WAN/LAN Network Security both show a current use rate of 54%, leading all others. These two diverge going forward, however, as 34% more respondents expect to update WAN/LAN Network Security in 2015, but only 12% more plan to adopt VOIP.

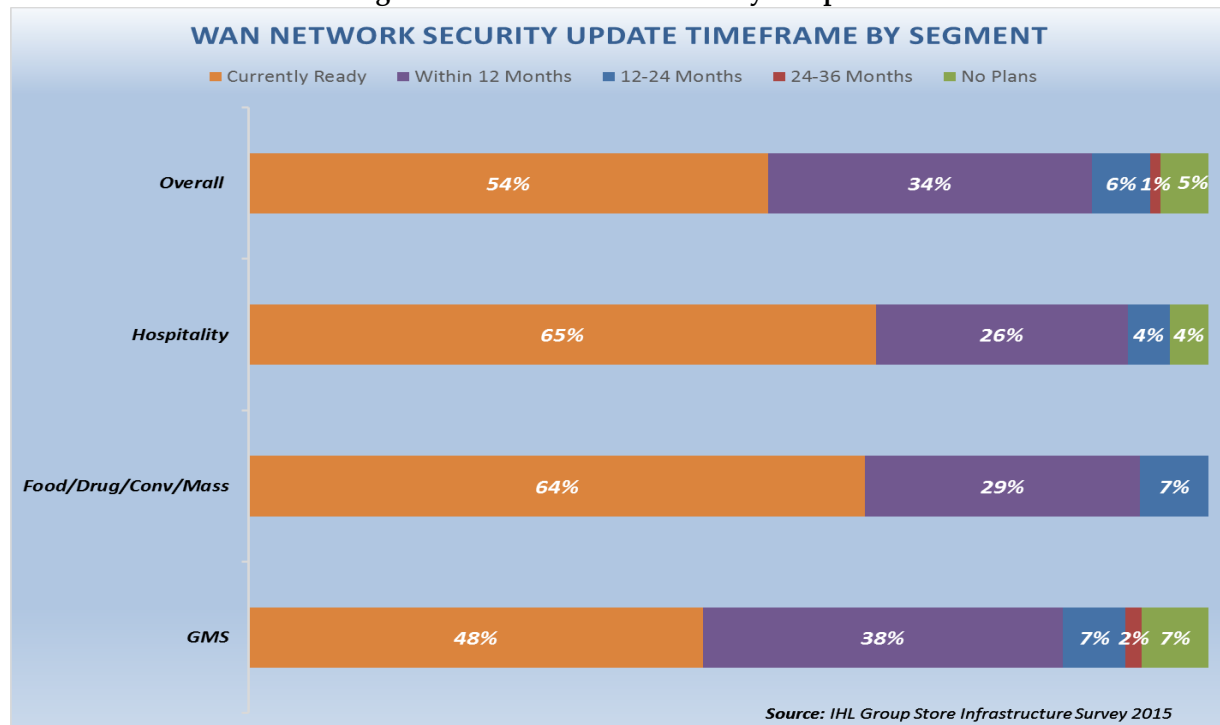
WAN Bandwidth/Optimization naturally follows the first two, and 80% of retailers will have updated their bandwidth by 2016 to take advantage of changed software architecture and enhanced customer experience options at the store. WiFi at the store level shows a current adoption of 40%, with 36% of our respondents planning an upgrade for 2015.

EMV Compliance is the largest spend area for 2015, as the EMV mandate kicks in this October. Loyalty-Mobile App is also going to be big in 2015. We know from other research that currently less than 50% of retailers have the ability to use a loyalty profile in real-time at the store level. Upgrading this technology is aimed at bridging that gap.

The jury appears to still be out on Beacons, although 30% plan to be deploying them in some capacity by the end of 2015. A big challenge here is the unknown consumer response to the technologies. It is our contention that Beacons will be one of those technologies that won't quite hit the adoption levels at the end of the year that retailers expect in the beginning of the year. In a sense, it is technology on the budget bubble this year and most likely will get delayed due to other lower hanging fruit.

4.0 WAN NETWORK SECURITY STATUS

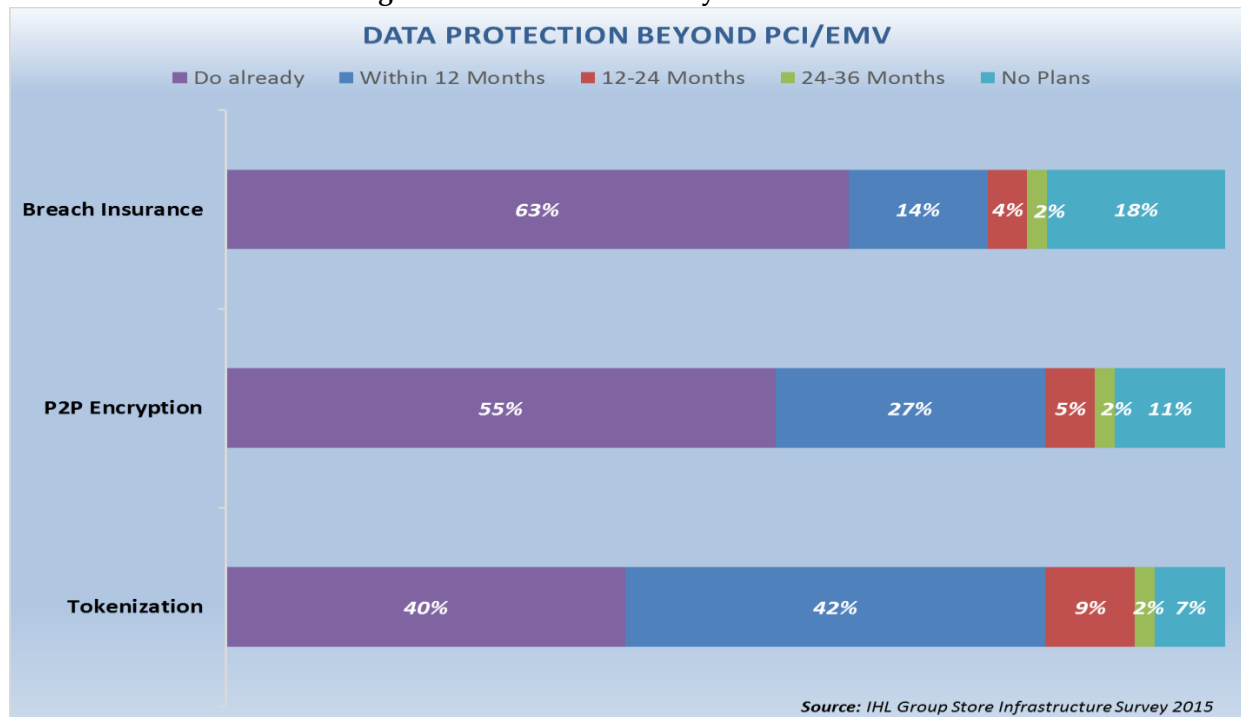
Figure 5 - WAN Network Security Adoption



Looking deeper into the WAN Network Security updates, the Hospitality and FDC retailers are the most up to date, but for different reasons. The Hospitality retailers have historically been among the "most-burned" as a result of dine-and-dash, card skimming and the like. Add to that the fact that there is a significant "franchise mentality" at play (the restaurateur who owns 6 restaurants can go under if his network is compromised), and the result is a retail segment that is highly sensitive to nefarious activity on their networks. FDC retailers, on the other hand, tend to be more conservative in their planning (recall Figure 3), so their network security has been a part of their regular planning all along. Their needs are due to the high volume of transactions that go through their system. So a single lane or a breach of the network from the outside can provide mountains of data for the bad guys. Additionally, since these retailers often have thousands of stores, they also know the bad guys are looking for the weakest point into the network.

5.0 PCI VS DATA SECURITY

Figure 6 - Data Protection Beyond PCI / EMV



It has long been our contention that PCI compliance is not security. In fact, every single retailer that has been breached in the last two years was PCI compliant at one point. The problem is that PCI standards were designed as an ongoing process, yet retailers look at it as an event. This is because it is too costly for retailers to maintain as an ongoing process. Later we will review the actual costs of PCI compliance on the IT budget as done by retailers today.

This particular question looks at data protection technologies beyond what is being mandated by the card brands. Fully 63% of our respondents claimed that they already have Breach Insurance, which isn't a network technology but rather a financial payment for damages sustained as the result of a technical problem. The fact that Breach Insurance is currently more widely adopted than P2P Encryption and Tokenization (both considered to be table stakes in payment security at this juncture) should not be lost on the reader.

Figure 7 - Data Security IT Spend by Retail Segment

Retail Segment	% of IT Budget Spent On Data Security	% of Data Security Spent On PCI
Overall	14.1%	37.7%
General Merchandise	15.1%	33.0%
Food, Drug, C-Stores	14.8%	55.4%
Hospitality	10.8%	37.3%

Source: IHL Group Store Infrastructure Survey 2015

As has been told to us many times, the costs to comply with PCI initiatives takes up an inordinate amount of the Data Security budget. Historically, less than 5% of a retailer's IT budget was spent on Data Security of any kind. That has jumped to 14.1% in the last two years. But even with this increase, upwards of 55.4% of the Data Security budget for Food/Drug/Convenience stores is tied up just trying to stay PCI compliant, leaving 45% of the budget for the broader security concerns. This is a big problem in that PCI seems to focus on the breaches of the past such as skimming, terminal tampering, etc., and there is less budget to focus on the real issues retailers face today from hackers trying to gather large amounts of sensitive data from afar.

Figure 8 - Data Security IT Spend by Retail Tier

Retail Tier	% of IT Budget Spent On Data Security	% of Data Security Spent On PCI
Overall	14.1%	37.7%
Tier 1 (Over \$1 Billion)	13.8%	32.6%
Tier 2 (\$500M - \$1B)	13.3%	40.6%
Tier 3 (Under \$500M)	15.1%	42.3%

Source: IHL Group Store Infrastructure Survey 2015

This figure takes the same data and slices it by retailer revenue. Simply, it's the smaller retailers that are getting hammered by PCI implementation costs.

Figure 9 - Data Security IT Spend by Number of Stores

Number of Stores	% of IT Budget Spent On Data Security	% of Data Security Spent On PCI
Overall	14.1%	37.7%
> 500 Stores	13.0%	32.8%
50 - 499 Stores	16.0%	34.6%
< 50 Stores	11.7%	57.8%

Source: IHL Group Store Infrastructure Survey 2015

To drive the point home even more, we took the same data and sliced it by the number of stores each retailer had. Again, it is the smallest retailers that are being hammered the most by PCI implementation. Retailers with fewer than 50 stores say that 57.8% of their Data Security budget is being spent on PCI compliance initiatives, leaving much less to protect against external attacks than the larger retailers.

IHL has made no secret of our concerns about the fact that PCI is not only a moving target, but inadequate. Nearly all of the major breaches in the past couple of years, starting with Target, have been through some external system that came through the back end and not through the POS. PCI ostensibly protects from the store out, but that's not where the main threat to the retailer is. The end result is retailers are being required to spend money in places that to date have not proven to be a threat to them.

6.0 CUSTOMER WiFi

Figure 10 - Customer WiFi Influence on Loyalty / Sales

Retail Segment	% Claiming Impact on Customer Loyalty	% Claiming Increased Time in Store	% Increase in Sales
Overall	28%	28%	2.0%
General Merchandise	22%	21%	2.2%
Food, Drug, C-Stores	0%	11%	0.3%
Hospitality	61%	59%	2.7%

Source: IHL Group Store Infrastructure Survey 2015

One thing that we did want to measure in this study was the impact on loyalty, dwell time, and sales due to both customer and associate WiFi access. Here, the data did not disappoint.

Nearly one-third of retailers (28%) claim that they have experienced a positive impact on customer loyalty as a result of offering in-store WiFi, and an associated 2.0% increase in sales. The largest increase comes, understandably, in the Hospitality segment. Here, 61% of these providers claim an increase in customer loyalty, and an associated 2.7% uptick in sales per customer. This amounts to another drink or a piece of pie that the customer otherwise would not have purchased simply because they have access to WiFi. In fact, one could argue that WiFi has become so established in Hospitality establishments that it is almost table stakes. Not only do you get a bump if you have it, but there is an adverse impact on loyalty if you don't.

Likewise the numbers for the GMS retailers (22% and 2.2% uptick) are healthy and worthy of further consideration by these retailers. It is interesting to think that the big worry here was that if WiFi was offered, customers would use it to showroom. What these retailers are finding is that instead it has become a great resource to get more product information and for consumers to promote the retailer and their purchases via social media. Overall, 21% said it increased the time the customer stays in the store. While this could be a negative in a hospitality environment, it is almost always a positive in a GMS retailer, as more time generally leads to more sales.

For FDC retailers, the picture isn't quite so rosy, but that is due more to the fact that these are high-volume retailers whose customers are more interested in getting their shopping done. Customer WiFi access does not have much an impact on loyalty, time in the store or increase in sales.

7.0 EMPLOYEE WiFi

Figure 11 - Employee WiFi Influence on Loyalty / Sales

Retail Segment	% Claiming Impact on Customer Loyalty	% Increase in Sales
Overall	48%	3.4%
General Merchandise	53%	4.3%
Food, Drug, C-Stores	11%	0.6%
Hospitality	61%	2.5%

Source: IHL Group Store Infrastructure Survey 2015

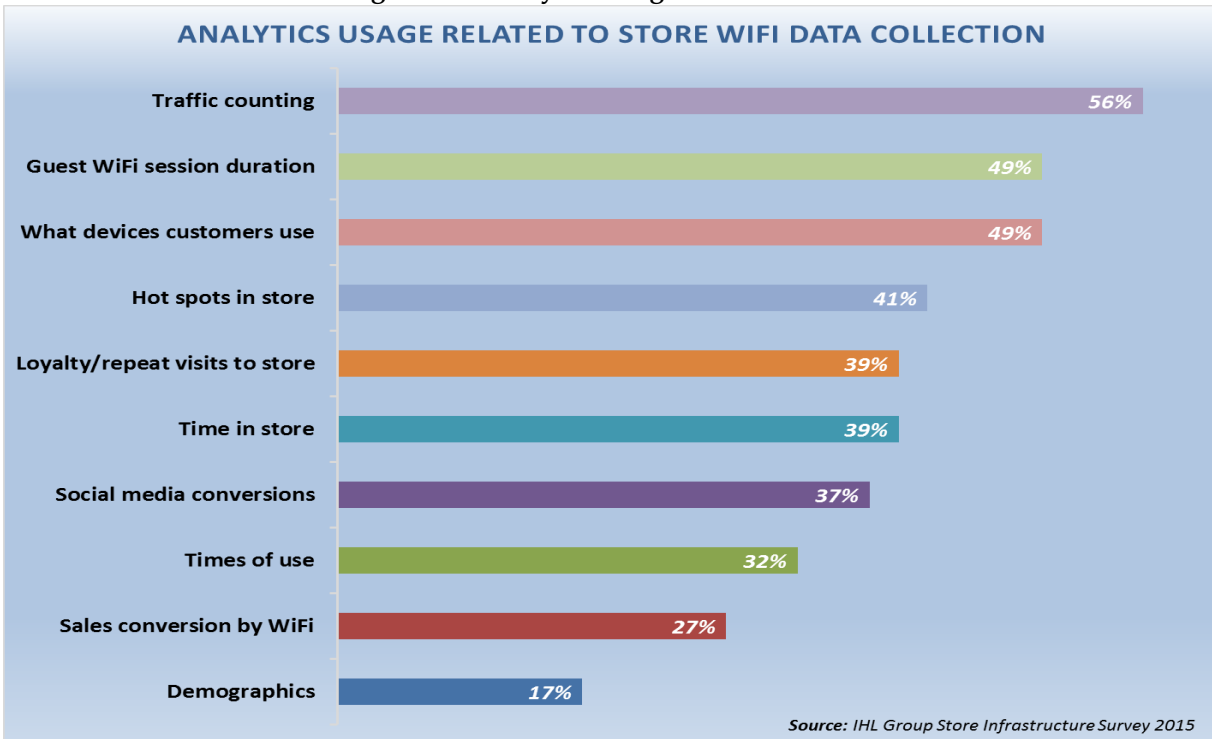
While the benefit of consumer WiFi ranges has a moderately positive impact on loyalty and sales, our respondents made it quite clear that the associate having access to WiFi on a mobile device has a dramatic increase on both loyalty and sales. Nowhere is this greater than GMS retailers where 53% claimed increased customer loyalty could be attributed to the fact that associates had access to WiFi and on average this meant 4.3% more sales. What they shared is that associates were now able to have the information in their hands to make the sale, to add an accessory and actually replicate their best sales people by providing the right information at the right time to all of their sales people.

Likewise, with the Hospitality establishments, WiFi here can mean more table turns and less time that a manager is in the back office. We have seen time and time again that the more a manager is on the sales floor, the higher the sales and performance of those stores.

Once again, the Food, Drug, and Convenience Stores retailers see the least amount of benefit, although 11% said the associates having access to WiFi increased customer loyalty. The simple tools of being able to look up inventory status, delivery status, etc. makes an impact on the consumer.

7.0 ANALYTICS FOR WiFi

Figure 12 - Analytics Usage of In-store WiFi



Related to the WiFi deployment, we also asked the respondents which analytics they are tracking for WiFi use in the stores. Traffic counting (retailers tracking customer phones) is the most common analytic cited at 56%, and that serves as a replacement for other technologies. Some of the more mundane analytics include Session Duration (49% of respondents claim they use), Device Used (49%), Hot Spot Used (41%), Repeat Visits (39%) and Time of Use (32%).

One of the really interesting findings was the fact that more effort was being spent on social media conversions (37%) than for actual sales conversions (27%).

In general, retailers are much further along on the key technical analytics that are low hanging fruit. However, they still struggle with the deeper data analysis of social media and sales conversions that they can be attributed to WiFi in the stores.

9.0 WHAT IS WiFi IMPACT ON RETAILERS FINANCIALLY

Figure 13 - Impact on Sales / Profitability for the Average Retailer

Retail Segment	Average Sales Increase (%)	Average EBITA % Revenue Before WiFi/Mobile	Average EBITA % Revenue After WiFi/Mobile	% Increase in EBITA
Overall	5.4%	5.5%	6.4%	17.3%
General Merchandise	6.5%	6.2%	8.2%	32.1%
Food, Drug, C-Stores	0.9%	4.8%	5.1%	5.8%
Hospitality	5.2%	6.1%	7.2%	17.4%

Source: IHL Sophia and IHL Group Store Infrastructure Survey 2015

Sections 6.0 and 7.0 of this study showed clearly that there was a benefit to retailers adopting WiFi for their customers and employees, respectively. That's all well and good, but what kind of impact does that have for the average retailer? When we factor in the stated sales increases that retailers could attribute to WiFi and matched that to average retailers in the category, we see some pretty dramatic results. The assumption is that if a retailer sells one more item or increases the ticket by 6.5% (as in the case of GMS retailers), that beyond the product cost, the gross profit drops to the bottom line. For instance, there is no more labor cost to sell 1 additional item per transaction, no more rent required, and everything drops to the bottom line. The really big numbers belong to the GMS retailers, where a 32.1% addition to the bottom line can be attributed to availability of WiFi for customers and associates. This is indeed impressive. Hospitality shows a 17.4% addition, and FDC retailers show a 5.8% addition.

Figure 14 - Impact on Sales / Profitability for the Average Retailer

Retail Segment	Average Sales (Millions)	Average Sales Increase (Millions)	Average EBITA Before WiFi/Mobile (Millions)	Average EBITA After WiFi/Mobile (Millions)	Increase in EBITA (Millions)
General Merchandise	\$850.0	\$55.2	\$52.7	\$74.1	\$21.4
Food, Drug, C-Stores	\$8,000.0	\$72.0	\$384.0	\$410.0	\$26.1
Hospitality	\$1,100.0	\$57.2	\$67.1	\$83.0	\$15.8

Source: IHL Sophia and IHL Group Store Infrastructure Survey 2015

Taking the data from Figure 13 and applying it to a typical retailer's revenue numbers results in those same type of dramatic results for individual retailers. An \$850 Million Specialty retailer would experience a \$21.4 million increase to the bottom line as a result of adding WiFi for the customer and for the employee. Likewise, the \$1.1 Billion restaurant would experience a \$15.8 Million addition to the bottom line. The real story, however, is the \$8 Billion Supermarket who saw "only" a 5.8% increase. In this case, that 5.8% means \$26.1 Million added to their bottom line, which is especially poignant given the low margins these retailers face.

What does all this mean? Well, we can think of a couple of things.

- First, these numbers indicate the kind of bottom-line increase for solving a problem that we haven't seen since we began looking at inventory distortion. It's an effect that starts small but permeates through the income statement in favor of the retailer.
- Second, this can be construed as a "first-cut" type of analysis in that it really only addresses the addition of WiFi/Mobile capabilities. The reality is that all of the supporting systems need to be in place as well for such benefits to accrue to the retailer.
- Third, it shows that the payback for implementation of WiFi is easily attained simply from increased sales alone in under 12 months for most implementations.

The conclusion of the study is that retailers are dramatically upgrading store infrastructures to create the store experience of the future. The single version of the truth for data, the move to mobile devices in the store, and the accompanying systems are driving a tremendous need for increased bandwidth and security to the store. A key opportunity for increased loyalty and sales comes in the form of WiFi availability to both associates and consumers. Without question, the greatest bang for the buck comes from enabling associates with mobile devices access to information that levels the playing field and provides them with the tools required to help the customer with their buying decisions. The results are undeniable. Keen retailers are racing to upgrade their stores to take full advantage of the opportunities.

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