BI Analyst Briefing Robots, Hackers, Amazon & Cloud Are Revolutionizing Retail

Company Participants

- Anurag Rana, Senior Technology Analyst, Bloomberg Intelligence
- Chen Grazutis, Consumer Analyst, Bloomberg Intelligence
- Poonam Goyal, Senior Consumer Analyst, Bloomberg Intelligence
- Seema Shah, Consumer Analyst, Bloomberg Intelligence

Presentation

Chen Grazutis {BIO 16090672 <GO>}

Good morning everyone, and thank you for joining us today for this Bloomberg Intelligence Briefing on Emerging Technologies and how they are changing the retail landscape. My name is Chen Grazutis, and I am the apparel and footwear analyst here at Bloomberg Intelligence.

With me today are Anurag Rana, our Senior Analyst for IT services and Software; Poonam Goyal, our Senior Retail Analyst; and Seema Shah, who covers consumer news in a variety of sub-sectors from jewelry to home improvement.

Before we begin, just a few housekeeping notes. At the bottom of the slide window, you will notice that you can adjust volume and maximize your screen. We recommend you maximize the screen for best quality. Feel free to ask questions using the Q&A panel to the right of the slide. We will address questions at the conclusion of the presentation.

A copy of the slides will be distributed via email following the presentation, and additional questions can be sent to BI Events at bloomberg.net.

For those of you who are less familiar with what we do here in BI, Bloomberg Intelligence provides unique analysis and contacts on industries, companies and government, litigation economic and credit factors that impact businesses. All integrated within the Bloomberg Professional Service.

BI coverage expands over 130 industries and 4,000 companies globally. We produce data driven research powered by our own data set and over 300 third-party data providers. Our analysts average over 20 years of buy and sell side research experience. We are neutral. BI research does not provide buy or sell recommendations, we give our clients the information they need to make a knowledgeable investment decision. Please note, those of you that have terminals, you can explore Bloomberg Intelligence by typing BI GO in the command line.

And with that, let me turn it into Anurag to give us a quick overview of the topic and heads. Anurag?

Anurag Rana {BIO 7440273 <GO>}

Thanks, Chen. So what we observed in last couple of quarters was really good results from some of the IT services and software vendors that were specifically talking about increased technology spending in the retail vertical. So, as a group, we decided to dig through this issue.

There are a number of things that are happening right now. The declining cost of sensors and data storage, along with the availability of wireless networks, which is really proliferating connected devices throughout the ecosystem, whether it be the front office or the retail store, or the warehouse. We are seeing a growth in Internet of Things, machine learning, artificial intelligence, robotics, supply chain management; and we will try to address some of them today in our briefing.

So first topic that we're going to talk about would be the increased use of robotics and virtual reality in the store. Seema, our hardline analyst, would give you some insight about how she is seeing those trends in her space.

Seema Shah {BIO 18919310 <GO>}

Hi. Thank you, Anurag. As the robots and robotics has been around for a while and now we're seeing them increasingly used in the hardlines retail space. One example of robotics use is at Lowe's through their Orchard Supply Hardware stores in California. They have a robot called the Oshbot, which you can see on the screen, that's basically an in-store shopping assistant that helps customers find products, and it also displays ads and promotions and it's a good way to integrate other in-store technology because we can see where the customer is and use that to promote or to purchase certain item or to help the customer.

Amazon also uses robots. They have over 15,000 robots made by Kiva Systems, and their performance that are -- they're using to sort and retrieve products for their employees to pack it. So in the longer time, we'll probably see this trend continue in different aspects of the retail space within fulfillment[ph] or in the store itself, and it may help retailers reduce the number of employees needed to provide the same service, that could be a potential margin booster at long term.

In virtual reality, which is another technology we're seeing increasingly, again Lowe's is at the forefront of technology, it has a 3D virtual room that allows customers to see how different merchandising color combinations would fit in their home. Wayfair, the online home furnishings company recently, I think, yesterday partnered with a company called roOomy to display 3D images on two of its websites, so their customers can experiment with textures, fabrics and get a good look at how this type of furniture what they're buying would look in their home.

And I think these technologies allow the customer, particularly for big purchases to get a better feel about what they're buying, they may be less hesitant to purchase such a big item if they can see how it look in their home, so that may drive conversion in same-store sales, and it may also help the company has lower the cost for themselves because they need to have less physical inventory, now they don't need to have 10 colors, they can show their customers the 10 colors online and people can buy it and then order it. So you can have more just-in-time inventory versus having it sit there and possibly going obsolete.

And lastly related to this, I would say, as Anurag mentioned, there is an increasing trend of Internet of Things where you have increased number of connected devices in your home. And Lowe's and Home Depot are two retailers who have created programs called Iris and Wink, that help customers manage all these different home devices from different manufacturers. And as that continues, it could be good for them because it allows them to maintain the relationship with the customer along after the sale is closed. So they're always with them and that might help drive future sales.

Anurag Rana {BIO 7440273 <GO>}

Thank you, Seema, for that. The next area of discussion for us is smart cloud, wearables. This has been a big driver for the consumer electronics industry for the last few years. We have seen Apple talk a lot about it, everyone has heard of Fitbit. This is becoming a big deal in the technology vertical, what we are seeing that is actually keeping its way in the apparel area as well, and then Chen can give us some insight of what he is seeing in his -- some of his companies that he follows.

Chen Grazutis {BIO 16090672 <GO>}

Thanks, Anurag. So when, like you said, when we come to talk about wearables, we probably are focused on what's available right now in the market, and like you mentioned it's what we wear in our wrist.

At this some point, some of it is, the iWatch by Apple, which is kind of an example for a smart accessory. And then the Fitbits, which are more like health tracking focused accessories. We just heard the other day of Target making the big deal with Fitbit, flying over 300,000 of those bracelet to their employee.

In terms of the numbers IDC projected, they're going to ship 76 million wearable devices this year, which is basically double what they did last year, and going forward they see it growing over 20% on a yearly basis all the way through 2019. So obviously the demand is there.

I believe this is just the first step when it comes to wearables. I think the big opportunity and lead time is the technology advances we are going to start seeing the closing itself become what we call smart, the closing articles actually communicate with other components of the system.

One of the first versions of this we saw a couple of weeks ago, and it's kind of a surprising player in this market, the PoloTech shirt by Ralph Lauren. The shirt actually has a built-in device that records work-out in real time and give you some information about your performance. It comes at a healthy price, it costs about $295 which kind of lacks the appeal for the mass market.

What I think the future is that products may go beyond is simply capturing the data. We might have built-in sensors that are going to be provide us with deeper insight about our performance, that is going to give you some ways to improve it. At the same time, they might have some predictive abilities kind of alerting you on an injury that might occur, just interacting with the way your muscle moves. That's a really interesting part of the business.

It's probably reasonable to assume that all the big athletic brands like Nike and Adidas are in some stage of developing this product, we just heard yesterday from executives in Under Armour in their Investor Day. They estimated that within 5 to 10 years, every article of clothing will have some kind of a chip in it. They will communicate with an system that is going to be able to track what we do, how we sleep, and kind of let us -- give us way to improve our performance in terms of our sport activity or even just improve our health. So I think there is a big market down the road, but we're not going to see it probably for another five years.

Anurag Rana {BIO 7440273 <GO>}

That is very useful, I can't wait to wear one of these shirts. So, moving onto the next area which is mobile, and since I cover technology, software and services, I'm going to give you some insight of what's happening there.

Over the last few years, we've seen an explosion in mobile devices, in fact smart devices in the workplace. That has completely changed the habit of how we operate, needless to say we want information on our finger tips, whether it's work related or whether it's personal related. So their lights have blurred quite a bit of how you work with and then how do you shop.

Mobile applications are becoming a much bigger piece of electronic commerce at this point, and what we are seeing at our end is, a lot of software and IT services companies are creating new applications for companies such as, you could name it, I mean, from Macy's to Target to Starbucks, all of them are using some kind of an app to make sure they can give you either customized service or some kind of customized coupons, or even payments through the system. So that is becoming a mainstream item.

This topic, I think is applicable for all of our retail analysts on the call. I'm going to start off with Poonam who covers Department stores.

Poonam Goyal {BIO 16489913 <GO>}

Thanks, Anurag. So as you said, mobile is obviously very important for retailers. And any retailer that isn't or haven't already started investing in mobile is at risk of losing market share.

So how are retailers investing in mobile? It's about 15% of more retail spending, and retailers such as Amazon, Apple, eBay, Target, Macy's, you name it, they're all on the mobile and they're all making huge investments to grow share through the mobile device. You can see in the chart that Amazon, Apple, eBay and Target all stand out. If you look at the right-hand side of the chart, more than 70% of their users time is spent on a app, leading the pack is Apple, where 99% of the shoppers browsing time is on mobile, so it's obviously very important.

How are these retailers driving time on the mobile? Various ways. One is through mobile coupon apps, as you've seen Target has Cartwheel, which has been a huge success and has driven many, many users new and existing to their mobile app and to their sites. And it's all about making it easy to use, making it accessible and having where it could be used in the store or online. And I think there is many more examples whether it's the mobile app or it's J. C. Penney's mobile app, which includes GPS based location finders.

So if you're near a J. C. Penney store and you've checked into it, you can actually find coupons for the retailer and walk in, that's a huge win for the retailer, any retailer that has that app, as they can detect their shoppers and their interest, and get them to come into the store. We know traffic has been dwindling at malls, at retailers. And if you can find any way to get the shopper back into the store, it's a huge win; and the mobile helps you do that, because you always carry the mobile device with you, and that's one easy way for retailers to reach out. I think Seema has some interesting examples as well that she can share.

Seema Shah {BIO 18919310 <GO>}

Thank you, Poonam. Yeah, just to add to what Poonam and Anurag had said. In the hardline space, mobile is increasingly an important component of the omni-channel strategy. And we're seeing this, it's particularly as the size of smartphones increases and most of mobile had been on tablets, but now with the iPhone 6 and 6 plus you're seeing more people use their smartphones for mobile commerce.

And as Poonam mentioned, it helps shoppers make on the spot purchases or do research while in store, and retailers can also tailor their mobile apps with their in-store weekend to drive in-store conversion and close the sale.

In the hardline space, particularly one of the, I guess most integrated retail or online and physical store presence, it has is at Williams-Sonoma, and last year I think they saw an 80% jump in their mobile revenue as they focus on improving the functionality and personalization of their mobile app.

Other retailers in the space like Home Depot, Tractor Supply and Auto-Beauty have also improved their -- and refined their mobile app. With the push, then the idea at

the end of the day is that the customer will have a better experience, will have more personalized content, better functionality. So wherever and whenever they want to shop, they'll be able to see the content, get the content in their car and close the purchase.

Overall, retailers, it's important push for retailers as the M-commerce market is forecasted by eMarketer to reach 153 billion by 2019. Chen, do you have any additional comments may be in.

Sure. I think it's interesting to look at a company like Under Armour that outside of just using mobile devices for M-commerce, kind of took it to the next level, they acquired a few apps a few months ago. I think, it was a little over $0.5 billion in acquisition, and what it gave them wasn't just like an M-commerce platform, but it actually created a community, people go in, they plug-in the work out, they plug-in, while they eat on a daily basis, and they gave them 170 million people that are part of community that kind of share with each other what they do or just basically give themselves an indication of how they like to look on a daily basis.

The numbers that they gave, the few numbers they gave sound very interesting, about 30% of those 170 [ph] users go on the app at least month to month to plug-in their workout or their food. Another very, very interesting data point was that from survey work they did, that (inaudible) people that actually use the app since the acquisition, they visited and purchased 30% more than they did last year on the Under Armour website. So using that app -- and being part of that community actually push them to buy more, and average order value is also up 30%. So there is definitely correlation as to how much a person use an app and use the mobile platform, and how much he purchase from the same brand down the road. So, and I thought it was very interesting.

Anurag Rana {BIO 7440273 <GO>}

Thanks, Chen. The next area where we're seeing a lot of traction right now is omni-channel. Now retailers were talking about it for the last few years, the IT Services and the software company has been talking about it last few years. But it's actually, this is kind of a gift that's been keep on giving for the technology vendors for a while, and this has made -- retailers are still spending a lot of money.

One of the things that we think here as a team, our retail team and the tech team that is, Amazon is one of the major drivers of why this is happening. Amazon, same day delivery, in order for any other retailer to compete with this level of service, I mean, forget same-day, even if it's next day or three day delivery, you need to have a thorough understanding of your supply chain, you need to understand what prices are in different parts of the companies. When I say companies, it could be the difference between your Internet store, your retail store, your store that's part of a department store. All of these inventory that's lying it on, you need to have a very good handle on it before you can you give out this level of service to your customers.

So, now with that in mind, a lot of companies are completely overhauling at IT infrastructure and spending a lot of money on it. And again, from the tech side, this is for good for the IT services companies as well as the software vendors that are giving us -- and selling the software. But I want to get some comments from our retail analyst as to what is that, you know what is happening in their end. Seema, what about your area, what are you seeing over there?

Seema Shah {BIO 18919310 <GO>}

Sure. Thank you. I just wanted to start off by stepping back, in case any of you are new to the retail space or to understanding what omni-channel is. And just like a brief background, omni-channel is basically in all -- a the term which describes the integration of multi-channel retailing. So if you're selling in a physical store, online or catalogs or through mobile is how is it integrated from the retailer side and from your customer experience.

So it's not just the mobile app, it's not just what you see in the stores, it relates to back-end infrastructure, such as inventory management systems, customer relationship management systems and any other supply chain systems, how you're going to get the product from the warehouse to the store or directly to the customer.

It's very important for retailers to build this infrastructure out and have a seamless process as Anurag mentioned in order to compete with online players like Amazon, but also to drive customer engagement, loyalty and eventually boost conversion and sales. So, in the hardline space, in order to compete with Amazon, home improvement companies are Lowe's and Home Depot at the forefront within their sub sectors, together they sell over a million items online, and despite the size and bulkiness of their items are able to ship to mostly the U.S. between 24 hours and 48 hours after the order.

And because of the way that they've managed their inventory and supply chain systems and the delivery, there are different warehouses that are able to get the products out quickly to customers when they want them. They also have other options which is increasingly common with retailers is to have a buy online pickup in stores, the customers like it, they see it on their way home from where they can pick it up, or ship directly to store, which may be cheaper for the customer if he don't have to pay for shipping, or again it's on your way home. And customers basically want to have choice. So that's what these retailers are providing.

Other retailers, such as Mattress Firm, they announced a deal yesterday to have an online-only product to grab the attention of millennial customers who are not comfortable making large purchases online without seeing it in the store at all, and Mattress Firm is also working with Wayfair to offer same-day delivery of mattresses.

So basically using mattresses for -- Mattress Firm over 2,000 stores as distribution centers, so that went away from make the sale on mattress. Mattress Firm will deliver it in the same day. So this, so what you're seeing is not just online, it's not just the store, it's a combination, even Amazon has experimented with physical stores and

has their Amazon Locker. So customers like the idea of having multiple -- have choice, having a physical store, buying online, and that also makes the return process easier, necessary. So, Poonam, do you have any other thoughts on omni-channel.

Poonam Goyal {BIO 16489913 <GO>}

Yeah. I think, one thing that you also want to keep in mind with omni-channel was extremely important to be omni-channel integrated, you also have to understand that it helps you save on the margin. So most recently, clothing[ph] exporters said that had gross margin compression due to free shipping charges, or shipping expenses, which are rising as both UPS and FedEx have been increasing their shipping rates on each year for the past three years, as far as I can remember.

So what omni-channel also helps you do, and Seema touched on it briefly, ship from stores, pickup in store. As if you are a customer and you order an item in New York city, there is no reason to have it shipped from California, a New York City store should be able to sell that order. And what that does is, that also helps prevent the fourth or fifth markdown, so if you have excess of inventories in the address that was just ordered, you can ship it from the store where there is excess inventory, or you can ship it from a nearby store, which helps save on the shipping expense. So omni-channel not only does it help drive sales, it also help save on margins by making sure that your inventory is well-managed and well-distributed. So there isn't an overhead with any one store or one location.

Macy's was probably the first retailer that I can think of that moved in omni-channel integration after the May acquisition about a decade ago, and right now they can offer same day shipping, which none of their peers really can in 17 markets; that's up from eight last year. And that's just a start, we'll probably see more retailers come and say to offer a same day delivery as they all have to compete with Amazon in order to gain share and avoid having to close stores.

And I think Chen has some examples to that he can probably share.

Chen Grazutis {BIO 16090672 <GO>}

Actually I'm going to jump in and try to talk a little bit about the increase in spending from some of the services vendor and the software vendor in this space.

Now, what this omni-channel has done is, it's given that if you have one single infrastructure talking about trying to connect technology from one end to the other, it's the neighbored companies to be more proactive when it comes to analytics. They're able to do much better data mining of their entire customers behavior records, and as -- in addition that, the data that they already own, plus the data that they can mine from third-party areas such as Facebook or Twitter.

So the manage[ph] of structured and unstructured data is creating great opportunities both for the retail industries in order to better understand their

customer or the technology industry to sell their new solutions, which is driving growth for both the areas. In fact, we can comfortably say that retailers that are not investing in analytics would find themselves a disadvantage going forward.

So with that, I'm going to try to get some insight from Poonam as to what she is seeing there. And then after that I'll give you a quick background of what kind of softwares we are seeing -- software spending we are seeing in this area.

Poonam Goyal {BIO 16489913 <GO>}

Thanks, Anurag. As you said, data -- big data, I don't think anyone has mastered this yet. But if there is a retailer that isn't moving towards that and may be left behind. Data (inaudible) about that, retailers can't make target of efforts to drive better results. So in order to drive results, in order to drive consumer spending they have to make targeted offers as consumers are just inundated with too many offers at this point. So you need to be targeted, you need to make sure you give the consumer what they want, and there is no better way to do that than to do it through data.

And the data, as you said helps drive loyalty, which is very important today as consumers are more fickle than ever before. So how they are doing this? And there is one example, it's on Macy's, which I think is a pretty neat concept. So, I'm sitting at a room with a bunch of friends and I like a dress that one of friends' friend is wearing, but I'm too embarrassed to ask, I don't want to ask, I can take a picture, scan it on the Macy's app, see if there is dresses that look like it and make a purchase if I find one. So the key here is as to build the successful app that can actually locate the item that you scan precisely and match it to what you're looking for. That not only gives you a purchase, but it maybe also gives you a customer for life, because you've now helped that customer save time by going to multiple retailers, or even shopping online and spending hours looking for something similar. And that's been a huge success, or can be a huge success for retailers that can do it properly.

We also have seen Macy's launch, Smart Fitting Room app, which is also I think a great way of just looking at what your consumers are shopping for, what they want, what sizes they're looking for. Imagine yourself in a fitting room and you picked up a dress, and you're like oh! it's too small. And you want to know their size, but you're too lazy to go out there and look for another size. But there is an app right there that you can touch and say, I have a size two, and I want a size four, and you see it's available here; order it online right away, or go pick it up in the store. That's also going to help retailers to have drive sales in the future.

Anurag, do you want add some more thoughts? Or Seema?

Seema Shah {BIO 18919310 <GO>}

Thank you. I just wanted to add we know that data analytics are being used as Poonam and Anurag mentioned, and also I'm seeing increasingly in the hard space, mind space, people are linking their loyalty program, they're becoming more hi-tech I should say their loyalty programs, that they can learn more about the customer and

segment their data, and as Poonam mentioned, have personalized direct marketing messages.

GMC for example is able to send personalized promotions and messages to each of its members of its GMC Gold card, and based on how the consumer is shopping or what they've bought previously and that special relationship in connection helps to drive converting into online or get people on the store and drives traffic.

Pier 1 has seen its direct marketing jumped 25% in the last year, and also in the hardline space we've seen analytics in the products themselves. Select Comfort Sleep IQ bed is actually using sensors and collecting data about a person's sleep cycle which can then be analyzed, the customer is interested in understanding how their sleep is affecting their health and things like that. But I see increasingly, you're seeing analytics use in the marketing aspect for these retailers to better -- they can better understand their customers, they don't want to just spend money on marketing, they want to spend money smartly. And the best way to do it is to target the customer of what they want and what you think they will actually buy based on prior experience with them.

Anurag Rana {BIO 7440273 <GO>}

Thanks, Seema. So, I just wanted to spend a little more time on this topic. This is I think one of the single biggest area of spending amongst almost companies from every vertical, and then a great growth driver for the software and services industry. We just heard a couple of days ago salesforce.com launching its Internet of Things Cloud. Oracle is really a big head, S&P is really big head, IBM has been championing it's Watson product, but the real frequency[ph] here is that the manage or the combination of structured and unstructured data, it's something I've touched upon briefly. But what is happening here is, initially what -- let's go back a few years ago, 5 year to 10 years ago with loyalty programs, retailers were able to identify what a customer is doing based on their spending habits. They know exactly what they buy, so they could send them coupon books at home figuring out. But they only had one piece of the information as to what they're buying in their store. They didn't have any information on other preferences of the customer, or what are some of the future things they are likely to buy. Then came the combination of structured and unstructured data.

Companies are able to mine data from Twitter feeds, from Facebook posts, from other areas where you could say sending emails to somebody and they're able to mine as to what exactly could be something that you're looking for in terms of your taste.

So with that in mind, a number of companies have developed these applications that they do some predictive analytics, also called cognitive software. IBM's Watson is a very good product over there or an area that is catching a lot of attention. It can go through a lot of text based data and try to predict what could happen in the future. It's this kind of technology that's emanating from a lot of software and services vendor that's been included in a particular retailer's sales strategy or future

marketing area. So, lookout for companies that are across the ecosystem all the way from data mining to visualization, and it's becoming increasingly important.

Segmentation of one, this is just part of something Seema just brought up about GNC sending emails to each and every customer. What used to happen previously was, you have -- customers were divided by whether they are male or female and the age group, let's say plus or minus five year. So if you're a male between 20 and 25, you have certain habits that people would market down in a particular category, and you will market at certain products.

With analytics, and with this big data, they're able to segregate two people of let's say if there are two 25 year old males, they will -- they could have and I'm sure they do have separate habits, they could target products very differently to them, this has become really important in space; and as Poonam said, if there is a company out there not doing this, it would be a disadvantage going forward.

Now moving on to the next topic and I'd say, I'm not sure everyone is, anyone who follows the retail industry or the software industry is very, very interested in this area, and that's the area of security.

Over the last few years, we have seen an acceleration in cyber attacks[ph] across the ecosystem, and more so in the retail vertical than probably any other largely because they have a lot of credit card data, and it becomes extremely important once something like this leaks out, and it can impact retailer's reputation and sales.

So that's an area of increased spending for the software spend, software vertical, I want to get opinions of both Poonam and Seema as to what they're seeing in their respective companies as to what is the -- what kind of scare at this point.

Poonam Goyal {BIO 16489913 <GO>}

Thanks, Anurag. I guess we'll start with the most recent data breach that actually had a large impact on the retailer, and that was Target's data breach in 2013 if any of you remember, during the Christmas holiday season, it couldn't have come at a great time for Target as then. And I think when we heard about the breach, a lot of us had thought that, it's okay Target will get pass this, the stock really didn't move much, in order their investors have as much concern as they did on before, but I think what we saw happened shortly after the data breach was that Target had cut its earnings and sales guidance and the stores were left empty.

The breach cost Target, and I think the counting is still going about $250 million plus that includes insurance proceeds, if you strip those that's about $160 million, that's still a lot of money, but not only the money that it cost Target, it left shoppers astray, I mean shoppers were forced to go somewhere else as they were concerned about their data and it being breached.

And we saw a similar example, not too long ago with other retailers even markets was also privy to this data breach. And while it didn't impact it's sales as much, because it didn't occur in the peak holiday season. Retailers are now investing more in cyber security, and Target itself has set up a center where actually it monitors now what's happening in the cloud space to make sure or to at least be alerted if another measure was to happen or another breach was upcoming they could probably to detect it faster and be cautioned.

And we saw similar examples outside of the apparel space. And I think Seema has one that she can share which didn't have as much impact, but it also was a recent data breach.

Seema Shah {BIO 18919310 <GO>}

Thanks, Poonam. In the hardline space, there's been a couple of breaches, one was Sally Beauty Holdings, they've actually been breached twice, once in March of 2014, and again in May of 2015. I think the second breach was caused by malware that was deployed on their point of sales system. Their sales had been weak in the last year, a combination of company-specific issues and possibly the lingering effect of customers being wary of visiting the store and having their credit card data breached and just the risk that someone will find their information.

Home Depot, much larger had a breach in September, August-September of 2014. I think there was a slight woe to their image, but really had a very negative -- it didn't impact sales very much at all. Home Depot quickly address the problem though and was very forthcoming about what happened and what they've done to improve their security.

So unlike the Target breach, the breach at Home Depot was not, I guess, the peak selling time and also did not have much of an impact on the sales and that might be that Home Depot's also being helped by other secular trends in their favor unlike the recovery in the housing market and other things like that. So it's less susceptible. There is not as many alternatives also for consumers in that space, perhaps.

But overall, I would say these breaches have forced other retailers to really consider their data security, because the risk of a breach is really a risk to their public image and in the Target's case, a risk to their sales.

Chen Grazutis {BIO 16090672 <GO>}

I'm going to try to go through this entire segment without mentioning Ashley Madison, but it's really hard. So there I did it. Now seriously though, I had to go back to the Under Armour apps, but yesterday they mentioned the interaction that their app is going to have. And they give an example, when we talk about health tracking apps, there is the opportunity to connect health insurance companies like they did with Wellness Management providers and there when we get to that level of interactions between all those companies using a mobile app.

It's one thing to have your credit cards stored and where you can actually cancel it, but you get to a different level with hackers can get access to your actual health data. So I'm guessing as we get more and more of those interaction between all those app, even these companies will have to significantly increase their investment in the cyber security, because then we're dealing with a very sensitive data, much more than just a credit card number.

Anurag Rana {BIO 7440273 <GO>}

The security software vendors have been actually doing extremely well over the last 12 to 18 months driven by a lot of breaches across almost all verticals. But what's happening also right now is there a lot of emerging technologies, upcoming technologies that are helping retailers to prevent such breaches in the future and one of the most important ones right now is tokenization and end-to-end encryption.

So what a lot of retailers would be doing, following Apple's lead of the Apple Pay example, where when you swipe a credit card through the terminal, what will happen is, it will -- that the card will be, that the number would be converted into a particular token and that's the token that's going to go across the network and even if someone taps into that token, they won't have the technology to unlock it and that can make things a lot more secure.

With -- retailers are also increasingly using security and service monitoring advanced threats as lot of vendors out there that are providing the services right now. Now what has happened is, advanced threats that cannot be detected by traditional signature base, technologies are then becoming increasingly pervasive in the space that you have these attacks that never have happened before through a particular malware that is brand new. Those kinds of things are -- cannot be easily detected by your legacy firewall technologies and there are the bunch of companies that are offering software and services, security and the service offerings in this area that can help to secure things a little bit better.

We are also seeing increased security software spending on virtual devices, a lot of virtualization in the data center and sometimes they are not as secure as the physical hardware machines, so there is a lot of focus that are coming out of that as well.

So what we're going to do now is, we're going to reach out and look at all the Q&A that we have received from the audience. One of the ones that is very interesting for us is, what defensive strategies work for brick-and-mortar retailers compared to as the world moves towards e-commerce. So I will ask this to Poonam. Poonam, do you have any insights on this questions, Poonam?

Poonam Goyal {BIO 16489913 <GO>}

Yeah. I think, what you're seeing right now is basically -- as you just asked the question, what's happening and what are we seeing, it's really the integration of technology that I think is most are in. Hello, can you hear me?

Anurag Rana {BIO 7440273 <GO>}

Yes.

Poonam Goyal {BIO 16489913 <GO>}

Hello?

Seema Shah {BIO 18919310 <GO>}

Hello, we can hear you.

Chen Grazutis {BIO 16090672 <GO>}

I can jump in here and I think that the lot of the defensive mechanisms that the retailers actually have is to increase the experience, the shopper's experience within the stores. They have to be very creative about it and part of it is to put a lot of investment of how the store look, what kind of experience they give to the shopper as he comes in, the way that the shops are actually -- the merchants as they presented.

I think that the companies that will have more advantage there are the companies that actually have the story to tell. If we look in a retailer, just to give an example, like Ralph Lauren or like the North Face, brands that have some kind of a story to tell and niche, let's see, if we talk about North Face, it's an outdoor retailer, so people that are interested in that kind of activities will go into the stores. They will still have that value add to go in and actually look at the merchandise and kind of see or speak to a customer representative. And that store gives them a different experience than go online or go on Amazon. Seema, you wanted to add something?

Seema Shah {BIO 18919310 <GO>}

Yeah, I would just say that, also I think it's an opportunity for retailers to focus more on the customer service or sales associates can be more knowledgeable.

So if you're looking for a paint and you go to Home Depot and now you can talk to someone who is knowledgeable about the area, the different brands, you can see how it looks through their technology, where the tablets of Lowe's, how it looks in your home, so that differentiate experience means you don't just go online and pick a different blue off of Amazon, you want to go into the store. And I would say, lastly, stores are so important because people still return items and the fact that you don't have to pay for shipping to return an item and you can do it, that also may drive some consumers to certain retailers over others.

Chen Grazutis {BIO 16090672 <GO>}

I think also instead of fighting that e-commerce threat, I think a lot of us have to embrace that, then I would give that example of the shoe store that -- and I haven't personally many times encourage that problem, when you go in and you look for a certain pair of shoes and you find a pair of shoes and you love them, but unfortunately they don't have your size. To embrace that e-commerce part and have that sales rep with the iPad just in front of you, ordering a shoe in the size you need and tell you they're going to have it by tomorrow night. I think it's very powerful and actually what it does, it just increase the conversion.

To get the same amount of people that come into the store, to that 10% of people that went out because they couldn't find the size, that they couldn't find the color. If you do enable your sales rep and you give them the -- you empower them to do a kind of transaction using the technology and using the e-commerce capabilities of your companies, I think that part of the defense you play, but the best defense is offense, that's my opinion. Here anyone?

Poonam Goyal {BIO 16489913 <GO>}

I do agree with you Chen, I'm sorry about earlier. Basically what I was saying was that, the way to be defensive is actually to go head to head and compete with these online retailers and that's why retailers are investing in the technology and the infrastructure to go ahead and not let go of the share that they have been giving up to e-commerce and try to win it back. So the investments in the e-commerce are a huge way to get back that share and in addition to that personalization services we've heard, customization and just being unique in what you offer.

You can offer what everyone else is offering. You have to differentiate and that's really the way to win the customer back and you also have to offer value. I think if you're competing just in the mid-market you can offer what is a staple item, it's not going to really when you back customers unless you can offer once again price or experience and we've seen retailer shift either one spectrum or the other, either they win on price and they offer the best price or they offer the best experience that you can get to get the customer back into your door.

Chen Grazutis {BIO 16090672 <GO>}

Thanks, Poonam. We have another question; it says, how do we track these retailer technology trends on the terminal? I would say a couple of things; one would be, we have a lot of dashboards in both the verticals on technology and retail that addresses a lot these things through same pieces that we do. Second is, a lot of services and software company breakdown their revenue by different verticals. And that's the very interesting area, because if you see kind of the organic revenue growth in some of these verticals that has been accelerating over the last few quarters, and those are some of the better areas to pick it out from what exactly our customer is spending on. We will see, if we have any other questions.

We have one question, asking if we're going to have the transcripts? The answer is yes. And I believe the link is going to be mailed to you in a couple of days. It seems like there are no other questions at this point.

Anurag Rana {BIO 7440273 <GO>}

I just want to thank everybody for their time. Please email us if you have any questions. Thanks for taking your time.

Poonam Goyal {BIO 16489913 <GO>}

Thank you.

Chen Grazutis {BIO 16090672 <GO>}

Thank you.