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Digital



Retail360 / Connected Stores

Transforming store fleet through technology

January 2018

Preface

You're about to read the paper 'Connected Stores: transforming store fleet through technology'. Inside are the results of a thrilling experiment - a tale we'll try to do justice to throughout this paper, which is aimed at providing guidance to retailers around the world.

We wrote this paper for executives that are interested in retail innovation & technology, specifically those who work with brick & mortar stores. It's been five years since we predicted that digital channels would reshape store footprints. This year, we saw retailers investing to make that happen. This was also the year we reinvented stores as we knew them, opened shops based on data, and used smart technology to generate insights. We did away with 'black boxes' where customers went into shops and revenue flowed out, and said yes to new and exciting store concepts that deliver outstanding experiences.

To reflect on this retail renaissance, we joined forces with PTC (IoT platforms), Monolith (Computer Vision), Impinj (RFID) and NCR Corporation (POS) to create an alliance with enough capabilities to connect stores and learn from the process. We were honoured when Legend World Wide, a Serbian fashion retailer let us use their flagship store in the high streets of Belgrade, Serbia, as an innovation lab. The experience with Legend World Wide proved invaluable, and everyone benefited. The store is now up and running, and we are continuing to learn from it.

We turned our findings from that experience into a report that executives can consult when it comes to questions like:

"What is the purpose of stores in the future?"
 "What is the role of technology in my stores?"
 "How do I transform my current store fleet?"

To answer these questions, we took our learnings and shared them with companies inside and outside of the retail industry. Through our interviews, we were able to get context and capture the challenges executives face today. We would like to thank the following companies for their input and perspective:

- adidas AG.
- IKEA
- Ahold Delhaize
- Black Red White
- Estee Lauder Companies Inc.
- Vodafone Group Plc.
- Trading Company
- Global Fashion Retailer
- Premium Fashion Retailer

We hope you will enjoy reading our paper as much as we enjoyed writing it.

Victor Hoong & Morris Boermann (Deloitte Digital)

On behalf of our retail partner team:



Table of Contents

1. The eCommerce dragons that have reshaped retail	4
2. The purpose of a retail store	11
3. Technology - the right tools and setup	16
4. Associates - will robots run all of our stores?	21
5. Product - getting it right every time	23
6. Turning data into action	26
7. Transforming your store fleet	31
8. The Belgrade Connected Store experiment	34
9. Closing thoughts	36

The eCommerce dragons that have reshaped retail

Imagining the future

The year is 1994, and somewhere on Wall Street, an ambitious 30-year old named Jeff is looking at a statistical paper that will change his life and the world as we know it. Jeff can't believe his eyes when he sees that internet usage has grown by 2300% annually. Jeff decides to quit his job and, as all good entrepreneurs do, work from his garage to set up a company that will sell products via the internet. Jeff founded Relentless.com and, if you visit it today, you will be directed to the website that has dominated the eCommerce market for the last ten years and continues to set the bar for retailers around the world: **Amazon.com (\$590 Bn. market cap.)¹**.

Meanwhile, on the other side of the world

After Richard Nixon's landmark visit to Hangzhou in 1972, an 8-year old boy eager to learn English offered to guide tourists around the Chinese city in exchange for English lessons. One of these tourists gave the boy an English nickname he still uses today: Jack. Years later, this same boy, Jack Ma, built his own internet company after noticing he couldn't find a single website that sold beer on the internet. While Jeff was creating Amazon.com thousands of miles away in America, Jack asked 17 of his best friends to invest in a start-up company that we know today as **Alibaba Group (\$490 Bn. market cap.)²**.

We're telling you Jeff and Jack's stories because their companies Amazon.com and Alibaba completely changed the way that customers access products. Jack and Jeff succeeded because they dared to imagine a new future, one where business decisions are based on science and data. Even today, these companies continue to disrupt retail thanks to their visionary leaders. We're bringing up these dragons of eCommerce because they represent a new kind of organisation: one in which data-driven decision making is the norm, not the ambition.



Figure 1: Amazon.com's willingness to fail^{3,4}

Throughout this paper, we'll show the success of data-driven decision making, as well as touch upon some of its challenges.

A dragon's game

Amazon.com and Alibaba's origin stories read like a novel, with its main characters Jeff and Jack, two visionaries, who once conquered separate online marketplaces. Amazon.com and Alibaba started as pure-players (i.e. companies that only operate on the internet) but continue to invest in new ideas and concepts. The way they operate has, and will continue to inspire companies and business leaders around the world. As their revenue grew, these companies turned into retail dragons without having lost their start-up mentality or hunger for adventure.

The success of Amazon.com, and also Alibaba, does not just come from their vast amount of success stories. It is just as much about their failures (figure 1). Success is a result of an innovative mind-set, which only really works when you are able and willing to fail. That is why Jeff Bezos, at a Business Insider conference in 2014, when asked about his failures, said that he has made 'billions of dollars of failures' at Amazon.com⁵.

Willingness to fail is one of the traits of successful organisations. With that comes an entrepreneurial mind-set that has driven companies like Alibaba (and its peers Baidu/Tencent) to kick-off an aggressive investment game to take their successful business model, and diversify that into industries that were traditionally out of scope. Looking at their recent investments (figure 2) really shows the magnitude of their ambitious growth plans and their desire to move away from pure-play and into a multichannel retailing game. Their power, platform, and logistics have allowed them to step into an industry like grocery (e.g. Amazon.com's \$13,7 Bn. acquisition of Whole Foods) through strategic acquisitions and immediately become a leading competitor, shaking up the market as a consequence.

Game of dragons

Selected investments over \$1bn, since Jan 2016 by groups led by major Chinese internet firms

Target Company	Sector	Amount, \$bn
Intime	Retail	2.6
Didi Chuxing	Transport	4.5
Ele.com	Food delivery	1.2
Lazada	E-commerce	1.0
Lyft	Transport	1.0
iQiyi	Online video	1.5
Uber China	Transport	2.0
Flipkart	E-commerce	1.4
Tesla	Automobiles	1.8
China Music Corp	Online music	2.7*
Didi Chuxing	Transport	4.5
Supercell	Online gaming	8.6*
Meituan-Dianping	Ticket booking/restaurant reviews	3.3
Lufax	Financial	1.2
Alibaba		
Baidu		
Tencent		

*Estimate

Sources: ITJUZI; Crunchbase

Figure 2: Chinese dragon's aggressive investment game into multichannel retailing⁶

What we take from Amazon.com and Alibaba, is how they have fundamentally changed the way consumers get access to products, with which they became the driving forces behind the major trends and developments we have seen in retail.

The journey of retail

In order to understand the effect that Amazon.com and Alibaba have had on retail, we will discuss four trends that we have seen in retail since their arrival. Appreciating the journey that retail has taken, will provide you with the right context on why it is important to think about stores, again.



2012

Channel Shift - Death to the Store

"Time to let the British high street die." – Financial times⁷

Retailers have faced tremendous changes in their industry over the past several years. With the rise of the internet, many saw an opportunity to drive sales through one extra channel: eCommerce. Most organisations viewed the internet as an experiment and made sure that their eCommerce channels were built separately from their traditional business. Because of this, most retailers still have completely separate on- and offline entities.



2014

Omnichannel Retailing - Digital Influence

"eCommerce is not eating retail." – Harvard Business Review⁸

When customers started to use digital touchpoints (see our report on Navigating the Digital Divide)⁹ during their shopping journey, issues began to arise. For example, customers would interact with the same retailer on different channels (e.g. online and offline) and encounter discrepancies, like price difference. As a response, retailers started to focus on seamlessly integrating experiences across channels, which we now call the Omnichannel experience. However, for organisations to deliver an Omnichannel experience, which has now become standard hygiene in the minds of customers, one of the biggest challenges has been to organise against that Omnichannel promise and break down the walls between online and offline functions within the same organisation.



2015

Customer experience: everything is branding

"Foster Innovation in Customer Experience." – National Retail Federation¹⁰

The last years have shown an increased focus on customer experience. Retailers noticed that connected consumers became more demanding and expected instant gratification and convenience. Consumers were looking for personalised experiences, which created loyalty. As a response, retailers heavily invested in personalisation and concentrated on delivering the right experience based on their value proposition.



2017

Rebirth of the store: IoT in retail

"Is brick and mortar retail making a comeback..." – Business Today¹¹

Stores have become the focal point for traditional retailers once again. Former online pure-players like Amazon.com and Alibaba have started opening brick and mortar stores to provide the full experience offline that customers expect online. Pure-players have traditionally run their business online, where everything is measurable and where data drives their decisions. When opening brick and mortar stores, pure-players have kept this data-driven mentality and designed their brick and mortar stores accordingly. Most of these stores are equipped with technology that enables them to collect data from their customers and use this data to make educated decisions.

Retail reshaped - the ecosystem of touchpoints

Reflecting back upon these trends shows how, with the rebirth of stores, we are coming full circle on the developments in retail. It has become evident that retailers should think about stores again. Even more so as the number of touchpoints average retailers have with their customers, is dramatically increasing. Therefore, we believe it is important to think about stores and the unique role they play in the ecosystem of touchpoints (see figure 3).

Retailers should think about the unique characteristics of online and offline channels instead and try to optimise them accordingly. Appreciating the entire ecosystem of touchpoints will help retailers improve each channel and deliver a more powerful and holistic customer experience.



Figure 3: Ecosystem of touchpoints

Imagine a future where you operate your household through AI-powered home assistants like Amazon.com's Alexa, or Google's Home. They enable you to order products or services through voice-command, manage your schedule and autonomously interact with other touchpoints. Home assistants are just one of many touchpoints in the lives of consumers. If they are able to help consumers gather information and order products, then retailers should really think about what stores can offer that is uniquely different in order to remain relevant for consumers to go to.

Customers should always be in control of the way retailers and technology approach them. Not everyone would like the example above. Which is one more reason why it is so important for retailers to get to know their customers and their preferences. However, research has proven that customers are willing to provide personal information if they receive relevant communication and offers in return¹². That is why one of the key terms in this paper is **relevancy**.

"We first determine really how we want to meet our customers in whatever meeting or touchpoint we have. Then, in the next step we can detail the interaction between the physical environment and digital possibilities, in a pop-up store for instance."

Global Manager Digital Touchpoints
(Furniture Retailer)



"You're not fighting for the wallet, you're fighting for the time. As we're a company targeted towards families, we need to make sure that they want to spend time with us. Therefore, we are not just competing with the usual suspects, we're competing with any place where families spend time together, like cinemas or even the zoo. We need to make sure that if families spend time with us, the customer experience is as much about entertaining kids, as well as serving the parents."

Michał Jaskulski, Marketing Director at Black Red White



Optimising the store vs. Reinventing the store fleet

During our experience and research for this study we have observed a large number of retail innovations being executed in the market. Several of the retailers we interviewed also cited that they have been able to develop and successfully Deploy innovations. However, these have been optimisations of existing processes rather than a fresh look at the ideal store set-up today. Frequently, we see point solutions layered on top of existing processes often driven by the vision of technology vendors of just one piece of the store operation. This results in incremental benefit but not a re-invention of business process/model that will bring a step-change in business performance. We have found that the real challenge for most retailers is not creating isolated and incremental optimisations but in developing holistic innovation that can transform major processes across the store operation and reshape the fleet operation to better suit needs of customers today. Take for example the vision Amazon.com demonstrates with its pilot Amazon GO concept¹³ that removes the checkout process (and many human intensive tasks) altogether. Once the technology is feasible, then this offers the potential to radically improve the retail operation.

The challenge of holistic innovation

So why do we not find more retail organisations tackling such holistic innovation efforts? There are a number of reasons behind this but we find some relevant factors in the book "The Innovators Dilemma" by Clayton Christensen¹⁴. This book outlines how disruptive innovation tends to be brought in from the outside of a market by new entrants rather than being developed by the incumbent market players. While

this important research is largely focused on product innovation there are also findings applicable more generally to the introduction of new business propositions such as a new retail store proposition.

In particular, Christensen puts forwards that incumbent players have the advantage of large existing customer sets but with it high expectations of yearly sales. New market propositions find targeted customer niches away from the incumbent's focus to build up the new proposition. The new entry companies do not require the yearly sales of the incumbent and thus have more time to focus and innovate on this smaller venture.

Reflecting on the project portfolios of well-established retail organisations, we believe these factors are also at play. Retail businesses are managed to hit short-term targets resulting in more tactical projects to better serve existing customer and business needs rather than exploring the potential opportunity outside of the immediate needs of the present customer base. Inherent system bias then naturally focuses limited resources on the more obvious business cases.

One of the approaches to tackle this challenge is to enforce a balanced project portfolio over different innovation categories (figure 4). We categorise projects over core, adjacent and transformational. Ensuring adequate investment across these (70%, 20%, 10% is our rule-of-thumb) doesn't "bet the farm" on innovation but invests in building the business for tomorrow as well as trading for today. The final category - transformational, is where we would find the kind of holistic innovation we believe can transform the store fleet.

The purpose of a retail store

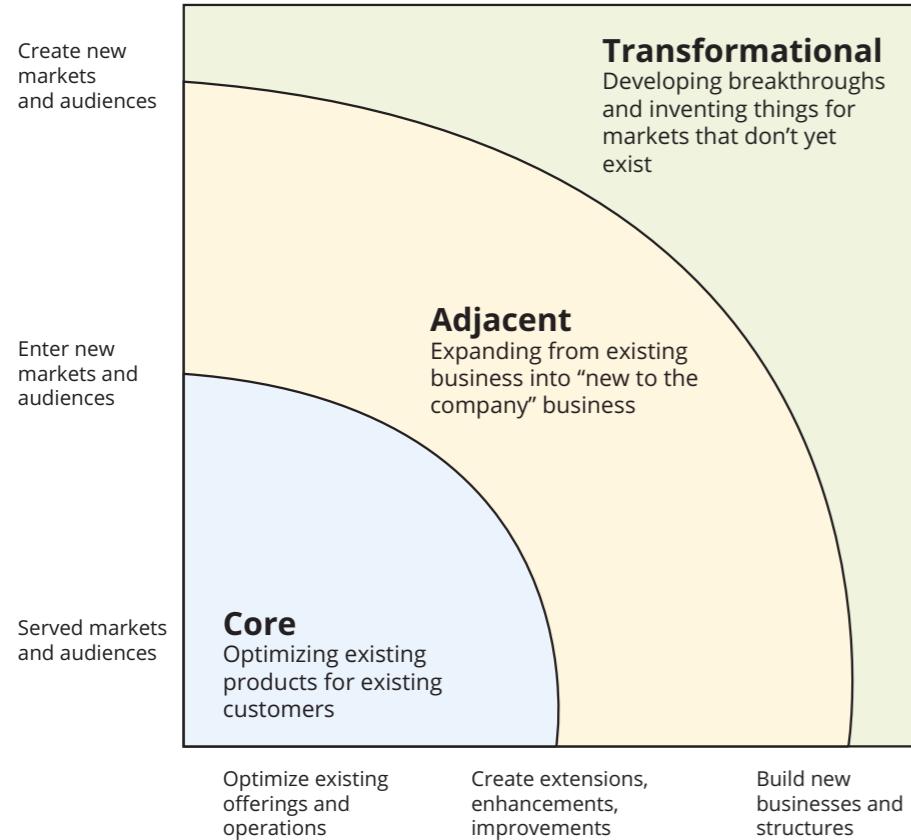


Figure 4: Balanced project portfolio methodology (HBR, Managing your innovation portfolio by Nagji & Tuff)

We propose that retailers push the boundaries towards holistic store innovation to deliver substantial customer value that is differentiated from their competitors. In order to do so, retailers must start with re-aligning the purpose of the retail store fleet for their customers that are now operating in the new context of the digital world.

Over the following chapters we will discuss how to transform your store fleet by tackling a number of questions we often hear from retail executives:

- *"How do I determine my store concept?"*
See chapter 'The purpose of a retail store'
- *"How do I select the right technology for our stores?"*
See chapter 'Technology - the right tools & setup'
- *"What is the role of our associates in the future?"*
See chapter 'Associates - will robots run all of our stores'
- *"What products do I put on shelf?"*
See chapter 'Product - getting it right every time'
- *"How do we turn data into action?"*
See chapter 'Turning data into action'
- *"How do we scale our store concept?"*
See chapter 'Transforming your store fleet'

What do stores look like in the digital era?

We live in a digital era, which challenges the traditional rules of retail from the way companies organise to the way that they design stores. Hence, we've received many questions from executives that wonder what stores should look like today. We dedicate this chapter to those who are ready to embrace the necessary mind-set to design stores of this age, which starts with appreciating the way consumers have changed.

In this digital era, driven by a wide array of smart consumer technologies, we have seen a complete change in consumer behaviour. Shoppers are more informed than ever, having access to multiple sources of information, which makes them more demanding and less forgiving to mistakes. Furthermore, they expect that retailers intimately know them and will not shy away from switching to a different brand. We have seen retailer fight the decrease of brand loyalty through promotions or heavy discounts. However, we believe that will only decrease brand loyalty even more as relationships with brands are not built on price or product, they are built on a much deeper level: **the brand**.

We believe that store design has much to learn from these developments and the unique opportunities it provides. Retailers who understand and appreciate that, will quickly find competitive advantage over others.

Brands like Red Bull and Acne Studios, a Swedish high-end fashion retailer, understand that customers are looking for that brand experience. The Acne Studios New York flagship store is a perfect example. Highly aesthetically pleasing, the store immerses the customer in an experience that helps them understand what the Acne Studios brand stands for. They've executed this with considerable attention to detail, almost at the cost of actually selling products. We believe that Acne Studios use stores as an opportunity to build a relationship with customers first, which will yield product sales later, or in a different channel (i.e. online). First and foremost, they make sure customers connect to their brand and make it part of their life story.

Of course, not all retailers should build stores like Acne Studios, which almost entirely focus on brand experience. There will still be stores that tailor to instant

transaction at low-cost (e.g. pound-stretchers), but for those retailers looking to increase brand loyalty, we suggest to learn from the way brands like Acne Studios or Red Bull convey their brand story across every touchpoint they have with their customers.

Acne Studios

New York City Flagship Store
(926 Madison Ave)



"To clarify the role digital would play in our retail stores, we had to reflect back to who we are as a brand and what it means to play across both the sport and retail segments. We kept coming back to this element of physicality and humanness, and we put that at the core of our retail experience - with digital serving a role to enable and heighten that."

Worth Darling, Director Consumer Experience (adidas AG)



Why do people visit stores?

Consumers are increasingly attracted to brands that tell a story, as they seek brands that fit into their personal life stories (often displayed on social media, see shareable experiences¹⁵). Stories help people relate to a brand and create a connection that transcends the product. The branded experience reflects the relationship retailers want customers to have with their brand. Retailers should consider what values will make the relationship meaningful in the eyes of the customer. Actively deciding what the **brand values** are determine the principles that retailers can use to design stores and the selection criteria with which they select and prioritise in-store technology.

Shareable experiences

With the rise of social media, customers started seeking authentic and shareable experiences and products that reflect the personal brand they promote on social media.

Barneys co-operated with a creative agency to develop aesthetically pleasing objects that were on display in their windows, creating a social media frenzy.

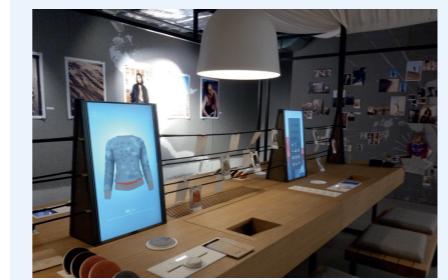


The iconic sports brand adidas is investing in building their brand values and work from a clear vision about the role they want to play in the lives of their customers. They differentiate between experience and transaction across their touchpoints, recognising that customers seek different things at each touchpoint. Therefore, **the purpose of their store** is to provide a unique opportunity to convey the adidas brand story to their customers (see an example of conveying the adidas brand story 'we are here for the creators' to a store purpose in Knit for You¹⁶).

Knit for You

Launched in the middle of Berlin, adidas has launched a store that allows the most creative amongst us to imagine and design products and walk away almost instantly

Standing in a room full of sensors, customers interact with different patterns & colours. Body scans will make sure that the body is measured in great detail, ensuring a snug fit! A true example of living the brand story and being there for the creators!



"Obviously we want high transactions in store, but for us it's really about taking time, exploring the store and being surprised by our brand and products. As we sell premium products we want our customers to really feel like they received a premium experience in-store or anywhere else. That is why we design aesthetically pleasing stores that tell our brand story when you enter"

Retail Executive at Fashion Brand



So, determining the purpose of your store is the first step we urge executives to take, which, in the end, boils down to a simple question: **why do people visit my store?** In the next paragraph we aim to help retailers answer that question.

Determining the purpose of retail stores

A visit to the store is just one of many moments in the journey customers take while shopping for products. Designing stores starts with understanding the full **customer journey** (i.e. the journey customers take from the moment they hear about a brand or product, to the actual purchase and service afterwards) and specifically what she or he needs at each phase. Each phase meets a very specific customer need and therefore determine the guiding principles with which retailers should design their stores.

We have seen successful retailers that take into account all of the touchpoints they have with customers (figure 4) and ask themselves how to allocate those to the different phases of the customer journey (figure 5) to build a meaningful customer-brand relationship.

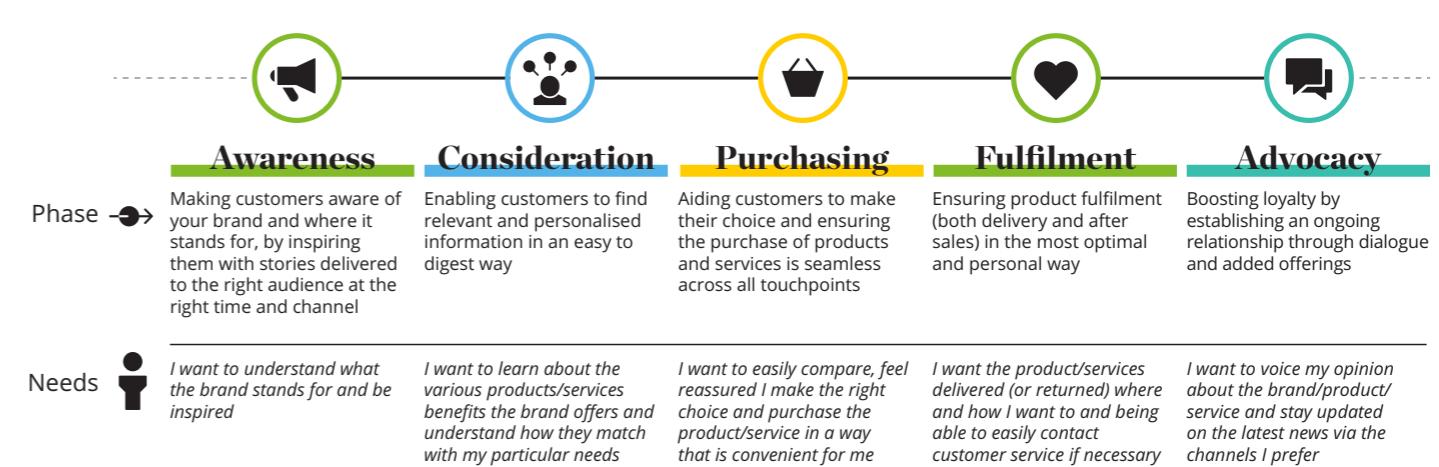


Figure 5: Example of a Customer Journey

Hence, we see retailers like Acne Studios and adidas, who really allocate their stores to the first phases of the journey, which are Awareness and Consideration. That does not mean they neglect the other phases, but they emphasise on brand experience and making sure customers understand their brand story. They recognise that their other touchpoints (e.g. social, eCommerce) do not have the unique and physical characteristics that stores have, which makes them so useful in conveying brand stories.

Therefore, the purpose of stores highly depends on which phase of the customer journey retailers want their stores to play an increased role. Hence, the store types we have come across range from transaction focus to emphasis on brand experience.

Five archetype stores

We've mapped out the different store archetypes (figure 6) we foresee in the future. As you'll see, the store archetype on the far left (Sensory Playground) is most concerned with brand experience. The one on the far right is most concerned with transactions (Vampire Vending).

Each store type has different characteristics that are tailored to specific customer needs. Using in-store technology to gather data about customers provides insight into what visitors experience in the store. With this information, retailers can iterate and evolve their store's concept until it meets the specific customer needs.

In summary, we advise retailers to think about which phase in the customer journey they want their stores to play an important role. Based on that, they determine how to align their store concept to the customer needs of that specific phase. In the next chapters we will explain how to translate the purpose of your store into a store concept, by discussing the implications on technology, associate and product.

"Often customers are going to stores in order to be consulted by our beauty advisors. They are looking for advice, but also to relax, have fun and reward themselves. In the future, we need to continue focusing on providing a reason for consumers to come to our stores. Through unique experiences like, for example, we do with pop-up events targeted towards Millennials."

Joanna Zboch, General Manager Central Europe at Estee Lauder

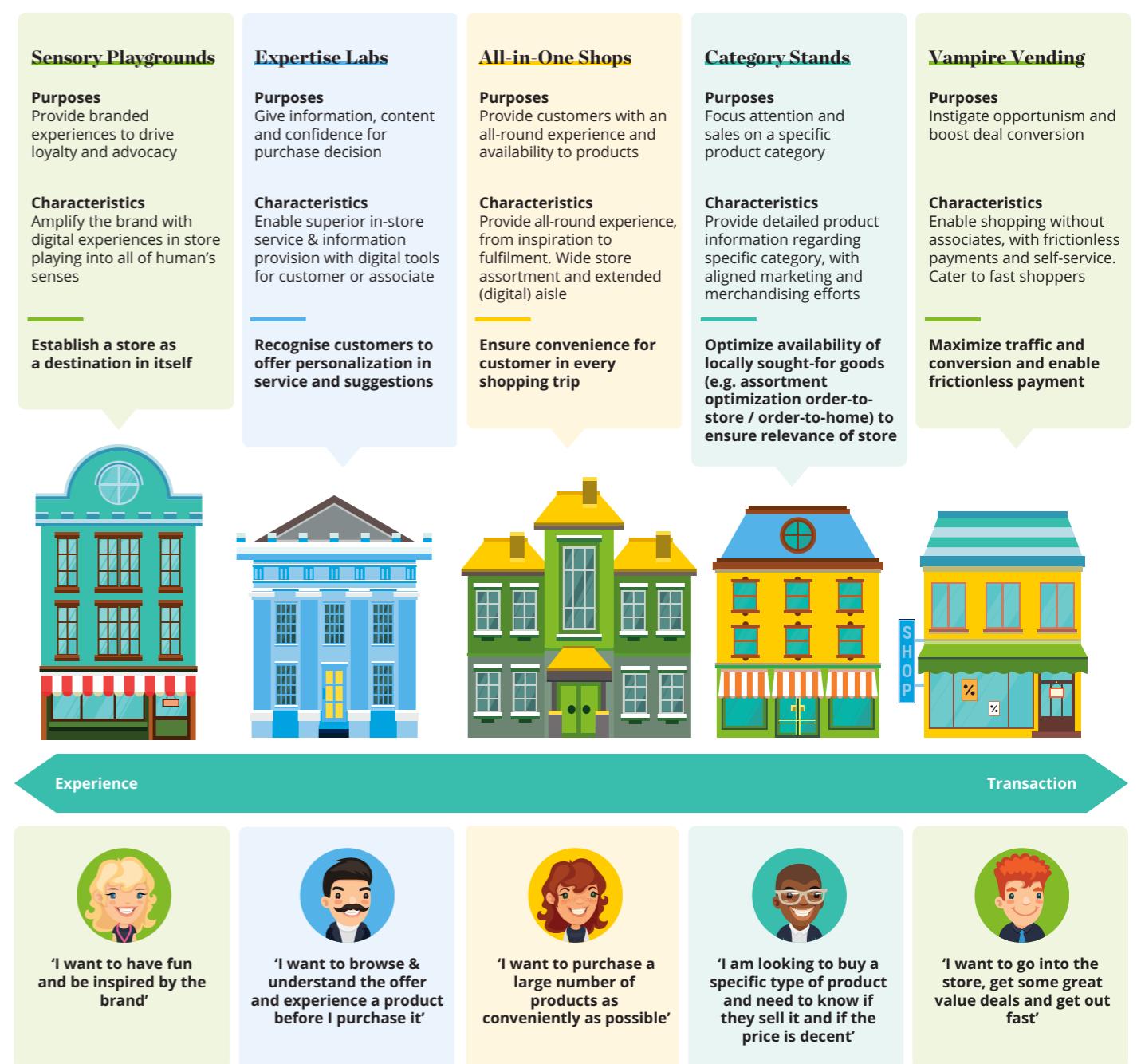


Figure 6: Store Concept Archetypes

Technology - the right tools and setup

Trends in technology

As retailers, it's important to keep up with the latest trends in technology. Retailers should ask: do you know what's out there and what's coming? In order to help you, we have selected four trends in technology we think are most relevant to brick & mortar stores and our story today.

Key Trends

-  1. Biometric technology
-  2. AI & self learning machines
-  3. Computer vision
-  4. Internet of Things

Biometric technology

We've seen an increase in biometric technologies, mostly focused on using fingerprint or facial recognition to identify and authorise in-store activities like payments and checkout. In retail, multiple payment vendors are experimenting with biometrics. 'Pay with a Selfie'¹⁷ by Alibaba is a great example.

Biometric technology enables retailers to dramatically change their checkout process, which increases customer satisfaction and decreases staff time (due to automated POS systems and unmanned touchpoints).

Pay with a Selfie (Alibaba)

Using facial recognition, Alibaba customers can now purchase products by taking a selfie.



AI & self-learning machines

Retailers have started to use Artificial Intelligence (AI) and machine learning to both increase operational efficiency but also improve the customer experience.

Macy's uses AI to power their in-store app¹⁸, which helps customers navigate their stores and North Face¹⁹ has introduced AI to assist shoppers on their website. In the future, we think it's likely that AI-powered solutions will also support store associates. For instance, AI-powered software might be able to provide live detailed product

information or recommendations with which associates are able to better serve customers.

North Face AI support

Customers at North Face receive interactive support through natural conversations with AI-powered tools



Computer vision

With computer vision, retailers get real-time feedback through images and videos. This is an easy way to automate visual tasks humans would usually do, like checking inventory on the floor and observing customer preferences and profiles as they move through a store.

In retail, companies like Monolith²⁰ have developed camera vision algorithms, as part of their offering, which track customer profiles and in-store behaviour to provide recommendations for optimising category performance, shop layout, and allocate associates efficiently. Computer vision enables retailers to understand their customers and provide actionable insights based on that.

Linking computer vision with other in-store technologies like radio-frequency identification (RFID), which enables analysis of product interactions, provides value through the aggregation of data and cross-touchpoint analysis. In the chapter 'The Belgrade Connected Store Experiment', we will elaborate on the use of computer vision in an actual store.

"By using Monolith's intelligent camera solutions at a pop-up store, we were able to test the technology but moreover get new insights in the shopping behaviour of our customers. Hence, we were able to try out different store environments every month. We then scaled up the technology to four of our showrooms which really allowed us to do all sorts of A/B-testing in the automotive environment. Thus, optimising the shopping environment for all of our stores."

PM Digital (Trading Company)



Computer Vision

See the chapter 'The Belgrade Connected Store Experiment' for more detailed information about how we applied computer vision to an actual store!



Internet of Things

It has been nearly two decades since the Internet began to fundamentally reshape the retail landscape. Yet even as the Internet's place in retail strategy has come to define the new normal, another suite of technologies — the Internet of Things (IoT) — threatens to reshape the competitive landscape, again. Through the deployment of sensors and the collection and analysis of the data they generate, the IoT opens new avenues to influence and augment actions, from urging you to get up from your desk and move, to replenishing inventory when a store shelf empties.

We have seen IoT platforms move their way into retail, to help aggregate data from different solutions and assist retailers in making sense of all the data that is being generated in the store. One of those platforms, PTC ThingWorx²¹, is currently being used in our connected store experiment in Belgrade. It's been successful in enabling data management, generating insights and providing analytics.

IoT platform analysis

See the chapter 'The Belgrade Connected Store Experiment' for more detailed information of how we used IoT platforms in Retail



We believe these trends are important to retail at the moment. However, retail is continuously changing and new trends will develop. Therefore, we believe that successful retailers do not read about trends, they know them before they even happen. The only way to do that is when you have actually welcomed technology in your organisation, including the mind-set it requires.

Traditionally, retail has not been a tech-savvy business. However, with the rise of technology, start-ups and new innovations have increased dramatically over the last decade and will continue to do that in the future. Therefore, we feel it is necessary for retailers to understand the role technology plays in the stores, but moreover in their entire organisation.

How to become a tech-charged business

Fostering innovation has become one of the main priorities for Target Corporation (\$34 bn. market cap.). Therefore, they launched a start-up accelerator program called Techstars Retail - in partnership with Target²².

The program is a three-month intensive start-up accelerator focused on bringing new technology, experiences, products, and solutions to retail. 10 start-ups are selected each wave and will be allowed to work with a 150 mentors from within and outside the Target network. 50 of those are target executives at VP level or above, including their CEO Brian Cornell.

Last year, Target + Techstars companies collectively raised \$32 million post program, and eight of the 10 companies went on to work with Target on pilots or in some other way. Ryan Broshar said in an interview with Retail Dive²³:

"The main takeaway with our program is the sense of scale. The difference in scale between a start-up and a fortune 50 retailer like Target is there's a huge gap there. It's hard for start-ups to fathom the scale of Target, and it's hard for Target to learn how to work with a team of four from a start-up. We aim to bridge that gap and set up some meaningful relationships. One of the biggest benefits for Target is getting an inside look at the "secret sauce" that produces value and drives change." (Retail Dive, July 18, 2017)

Target is just one of the retailers out there that have invested in start-up accelerators, which really glues them into the start-up scene and enables them to act quickly on technology trends, but moreover, stay on top of them by continuously inviting them into your house.

Some of the other trends we see with retailers trying to become more technology-charged are:

Business changes

-  1. [Centres of Excellence \(CoE\)](#)
-  2. [Product focused agile teams](#)
-  3. [Innovation labs](#)

Centres of Excellence (CoE)

Technology expertise can be organised in a centre of excellence: a ring-fenced entity with co-located professionals that work for the entire company. By bringing technology talent with similar expertise together, a company can create a stimulating environment to attract, develop and retain digital talent. CoE's can have their own culture and thrive through cross-pollination and idea sharing. When a traditional company acquires a digital team, using a CoE as initial landing place is often a good choice to prevent them from being assimilated by the traditional culture. As the CoE and the expertise in it matures, the best practices and learnings of the CoE can be adopted by the business units after which the CoE can be integrated in the wider organisation or dissolved as organisational entity. Note that a CoE differs from just a central IT unit as it has real value for external parties. If you competitor would not want to buy your CoE, it's probably not a CoE anyway.

*"How we deal with and prioritize technologies? We decided to divide the world into three - **Commodity**, **Creator** and **Crazy**.*

***Commodity** is something you need to do (basic consumer expectations) where the pure players are setting the benchmark and we seek to fast-follow. We call ourselves the **Creator** brand. It is our strategic positioning. This is where we carefully select the areas we want to lead, ensuring we pay into our core competencies & strategies.*
***Crazy** is the space to play; recognizing there is so much stuff going on that you need to simply try things out without being overly thoughtful about it."*

Worth Darling, Director Consumer Experience (adidas AG)



Setup product focused agile teams

With different departments being responsible for only a part of the product or experience delivered to the customer, precious time and resources are lost in handovers and alignment, locked by operational KPIs and budget allocation not incentivising cross-functional and more innovative development. Therefore, we see retailers shifting to agile teams centred around value streams and products. This provides an end-to-end responsibility to the teams with autonomy to make own decisions (within the boundaries of standards and principles set by the organisation). This enables a more collaborative and engineering culture, fostering the usage of new technologies and methods to solve old industry problems and test new ideas and features. It also provides a means to expand from a technology centre of excellence to the broader organisation.

Innovation labs

An innovation lab is an entity that is fully focused on delivering new concepts. Where in the rest of the organisation innovation activities are mostly related to improving the core business products and processes, the innovation lab is separated from business as usual and covers the full innovation life cycle with ideation, prototyping, development, testing and scaling up. It has teams working on different projects, where failure is part of the normal process. For a successful innovation lab having an ecosystem with partners is essential to bring new ideas and capabilities. In the war to be first some retailers started acting as early stage investor providing seed money to start-ups buying concepts and ideas before they come public. Also starting partnerships with players such as Alibaba and Amazon.com becomes more common practice.

After having determined ways for retailers to become more technology charged, we will now focus on the role of technology in stores, and how you can select and prioritise which ones you install.

Selecting and prioritising technology

Considering the amount of technology around, investing in the right technology is key but find the right technology isn't always easy. A common mistake we observe, often driven by technology vendors knocking on the door, is when retailers go for the 'whizzbang' objects and observe that very few customers are actually using it. By thinking beyond the 'shiny objects', successful implementation of in-store technology is highly dependent on the needs of customers and the store purpose.

We advise clients to look at technologies through the lens of the Gartner Hype Cycle (figure 7)²⁴, which helps retailers think about the promise of specific technologies in the context of their industry as well as their appetite to risk.

The hype cycle basically depicts the technology's lifecycle in five stages, all the way from the moment the technology is created to mainstream adoption. During any stage of the model, technologies can either perish or survive and proceed to the next stage.

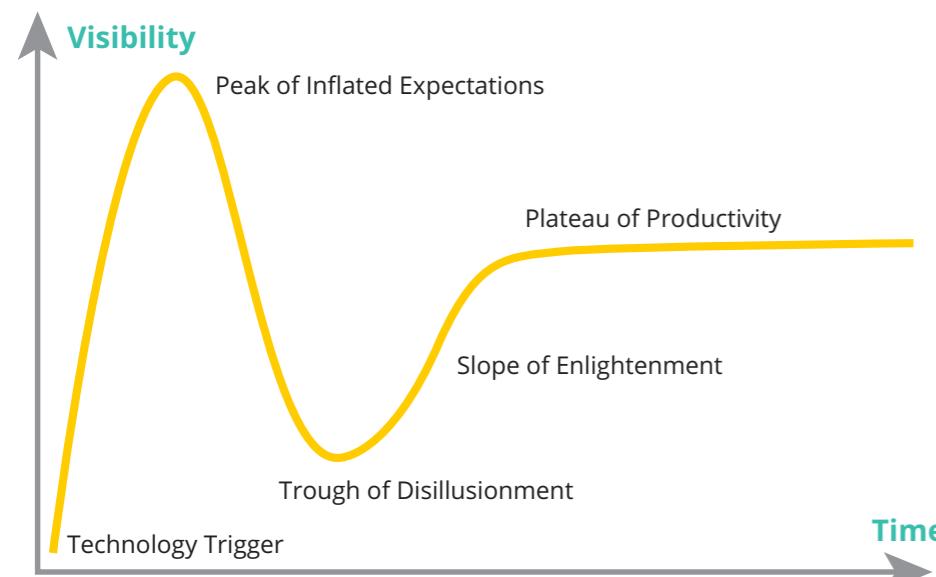


Figure 7: Gartner Hype Cycle

This helps retailers select and prioritise technologies, it enables them to categorise new technologies in the following buckets:

1. Make an early move

(everything before trough of disillusionment)

Technologies that are very new and include a high risk factor. Often the practical application has not been crystallised yet. They require pilots in order to understand the technology in more detail. For example, Smart Dust²⁵, which are tiny computers the size of a grain of sand, that work together as a wireless sensor network. We often advise retailers to monitor technologies in this category closely and pilot them to prepare for the future when they have proven their worth.

2. Monitor & tailor to your needs
(everything before plateau of productivity)
Technologies that have shown promising results and practical applications, but still require investments in order to be tailored to a retailer's specific need. For example, we have seen large retailers publicly implementing AI and Augmented Reality. Hence, we urge retailers to think about the practical application of these technologies by co-developing with partners and exploring the right moment to invest and roll-out.

3. Investment now and roll-out

(after plateau of productivity)
Technologies that are mature and well-developed, something you should invest in as it becomes a 'basic' need. Often core technologies are driven by major (technology) players and retailers merely wait for the optimal moment to invest in terms of money & maturity. For example, CRM or DMP have proven their worth many times and are seen as a must for many retailers.

Brands often use different terminology as adidas does (see quote by Worth Darling, Director Consumer Engagement at adidas).

If technology is selected based on the purpose, archetype and the above categorisation, it's time to acquire the technology. Technology can be acquired by building, buying or partnering up with an existing player. These decisions depend on the amount of influence you want to have, as well as in which bucket you have categorised the specific technology.

Associates - will robots run all of our stores?

Who will work in the stores of the future?

Picture, for a moment, the tasks of today's store employees: they checkout customers, act as security, open and close the shop, fold clothes, stock products, answer questions and are sources of knowledge for customers. It's not hard to imagine that these tasks, tasks that have gone mostly unchanged for the past several decades, could be taken over by automated processes and machines. In fact, many of these tasks are already becoming automated. Just think of the automatic checkout line in the grocery store.

So, it's only natural to ask the question: will stores even need human employees in the future? And if so, what will they do?

Our short answer? Yes! We'll still see real-life humans in our future stores. Of course, retailers will use technology to automate store processes and create operational efficiency. And some of these efficiencies will translate into cost savings, which will give associates the opportunity to dedicate more time to providing a delightful store experience.

No matter the type of store, customers will always have a desire to interact with human beings. Human interactivity and engagement is one of the key drivers of overall store experience and satisfaction and will continue to be in spite of technological advances.

"Our associates are pivotal in our stores, through NPS we were able to figure out that positive NPS scores were often attributed to store staff, whereas negative NPS was often due to product in-availability. Therefore, we do not just need our associates to make sure technology works, but moreover to enhance the customer experience."

Neelendra Singh - Senior Vice President Global DTC & Franchise (adidas AG)



So, we don't anticipate the end of the store associate, but the dawn of a new era where store associates have the potential to become central players in developing the brand experience. By providing a wonderful in-store experience, associates can help transform happy visitors into loyal advocates and brand ambassadors.

Tomorrow's brand rock stars

As stores evolve, retailers must ensure that their associates add value for the customer on top of what is provided in the technology-enabled store experience. Employees should be given the means to assist customers and deliver the right service. We've seen many cases where the customer and associate have access to the same level of information, making the employee's knowledge rather useless.

It's critical to empower the employees and elevate their position within the store experience as they embody the brand values and vocalise the story you want to convey to your customers. Enable them to become efficient, automate any in-store processes that you can and educate your associates so that they fulfil one of the three roles we foresee in the future (see figure 8).

Product - getting it right every time



The Storyteller

Lives the brand story, able to explain brand values and deliver the desired experience



The Best Friend

Knows you intimately, able to provide personalised advice based on deep understanding of you as a customer



The Scientist

He or she who knows it all and provides detailed product information and demonstrates intricacies of use

Let's take Estee Lauder as an example. They have positioned their beauty consultants in roles that are integral to the store's concept as they recognise that customers are coming to their stores for professional advice²⁶. Starbucks has done the same thing with their baristas. Have you ever wondered why some baristas wear black aprons instead of green? It means they are coffee masters and experts in coffee²⁷. Hence, they'll be able to translate their brand value ('to inspire and nurture the human spirit - one person, one cup and one neighbourhood at a time') into a store purpose and consequently into the role that associates play in-store.

In these companies, the associate's purpose is deeply rooted in the brand values. The roles come with explicit guidelines about behaviour, which runs from recruitment to training to performance management.

The Associate of the Future

Apart from the nuances related to the definitions of the roles, and their subsequent implications on a company level, there are some other general guidelines to take into account. In general, associates' digital fluency will increasingly be called upon, in order to utilise the tools they have been provided with and teach customers how to use theirs. Secondly, as the associate's primary value lies in adding 'the human touch' to a digital store experience, another factor of growing importance will be the associate's emotional intelligence. Thirdly, as the store becomes a place to learn and improve, employees will have to cope with a rising degree of change and dynamism, essentially adopting the start-up mentality on the store floor. Lastly, and very much related to the start-up mentality, employees will be called upon to share their first-hand experience and feedback. If retailers manage to tap into the valuable

insights 'heart' of their employees, they can truly unleash the power of the 'science' in connected stores.

"It is not hard making our employees understand why it is important to change our stores, we know our stores will focus on hyperconvenience, personalisation and understanding me as an individual. It's the store, the associate and even the aisle that should understand who I am and what I want. The biggest challenge however is in the execution. Especially at the pace at which we need to do it at."

Andrew Brothers, CIO (Ahold Delhaize)



The king of the store

In the previous two chapters, we've covered the technological and associates perspectives of the store concept, which is what many are drawn to when thinking stores of the future. A third design element we cannot forget to mention is the king of the store itself - the product. To avoid this paper getting too broad, we will limit our discussion of this design aspect to a few key considerations given the digital age. We did not want to leave it out given that the central purpose of stores has historically always been to make products available for purchase by customers.

The arrival of new digital channels offers a new option through which customers can get access to the product range, which changes the context in which stores operate to fulfil customer needs. So re-visiting range planning to ensure that the right product categories are being made available in store vs digital channels is crucial.

During our research we found three considerations that we believe are important when thinking about products as part of the store concept.

1. Determine store assortment through demographic & customer data (case study)

In terms of selecting, or optimising store assortment across channels, we'd like to illustrate this consideration with a case study on how a leading retailer is using customer & demographic data to determine the optimal store assortment.

The client, a Global Sports & Apparel Retailer, was looking for help to optimise assortment across their Chinese store fleet. In order to understand what assortment would fit their stores, we looked at three different lenses across sub-regions of China. The first lens, aimed to identify what the customer profiles were, by analysing socio-demographic and customer data. Secondly, we unlocked a variety of purchasing data sources to determine what the customer was buying. We analysed direct online delivery, ship from store transactions as well as 3rd party digital sales data. Our third data lens intended to understand the location specific context of stores. We examined areas in which stores were located, to determine the competitive dynamics and other types of stores around our clients' store locations. By combining customer & demographic data, purchasing and store area data,

we were able to segment the stores in seven different types (e.g. premium destinations, local markets, etc.).

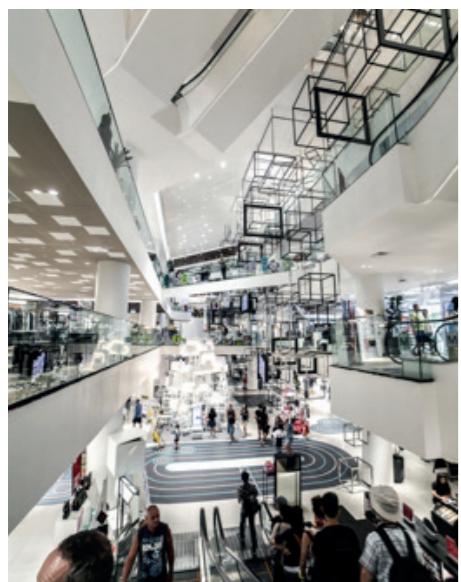
Based on the store types, and the customer data, the client was able to analyse which store assortment would suit the customers in the area (e.g. women tend to buy more at premium destinations than men). As a consequence, the client decided to adjust their assortment in terms of depth and breadth (e.g. determined top 10 must-have SKUs per product category). Hence, better serving customers, reducing aged inventory and increasing store performance along the way. We subsequently went on to replicate this approach and scale it globally.

In summary, as data is becoming more of a commodity, retailers have the opportunity to conduct simple analyses that will generate insights with which theoretically they can decide upon a store-specific assortment. However, as that would be a very costly exercise and difficult to execute, we often advise clients to determine store assortment per cluster of stores.

Figure 8: Associates of the future

Siam Discovery the Exploration

Redefining the retail experience in Bangkok



2. Align store assortment to the store purpose

As discussed in previous chapters, we encourage retailers to think about the purpose of their stores, which we illustrated through five store archetypes (figure 6). Retailers that decide to operate stores with an increase experience-focus, will need to align their store assortment to enable that specific experience. Hence, we believe it is important to think about which products you put in store based on the purpose you have defined.

We have seen many excellent examples of flagship stores (or brand stores), which focus on inspiration and exploration. One of those examples is the Siam Discovery the Exploration²⁸ (see Callout), a hybrid between a department store and shopping mall. Visitors are drawn into stories with an emotional experience relevant to their styles, interests and beliefs rather than simply being presented with a selection of products. Hence, they selected their store assortment to tailor to the experiential purpose of the store. The store is designed around a laboratory theme with seven labs (i.e. Her Lab, His Lab, Street, Digital, Creative, Play and Retail Innovative Lab). Customers are encouraged to conduct their own experiments by testing, creating and cultivating items for themselves. The Siam Centre store is a wonderful assault on all of your senses and a perfect example of experiential shopping where products are aligned to the store concept.

Hence, retail stores offer a unique opportunity for physical exploration of the product. This may be a showroom experience, where the product might be a high-value considered purchase, which often requires some sort of assurance before making the purchase decision. In this case, selected product

categories may be more important than others - for example in grocery, retailers are focussing on fresh food being made available in-store which customers want to see, touch and smell before adding to the basket. Packaged food and household items can be ordered online and delivered directly to home.

Finally, we have seen examples of retail stores where the brand may be communicated with experiences or services are not directly aimed at driving immediate in-store conversion. Take the example of the Rapha store in London²⁹. This is a store that sells very aspirational cycle wear, but also offers the chance for customers to just visit in order to meet friends, listen to speakers whilst enjoying a doppio and take time out from central London.

"We have started to define stores from scratch again, based on the history of our company and what we stand for as a brand. That is what we try to translate into a store design, which forces you to think about how to select the products in store, what the consumer journey looks like and what added value we bring along that specific journey."

Michał Jaskulski, Marketing Director at Black Red White



3. Enabling Omnichannel supply chain

The store takes an operational supply chain role in getting products to and from the customers. Providing the ability for customers to access products in-store or enable a reverse supply chain through which they can return products. This practical service sees the store as an asset to enable product. As stores become more connected, retailers build up capabilities that enable a multiple of supply chain opportunities. For example, stores may be used as a local supply node for ship-from-store premium delivery services (same-day or 1-hour delivery) instead of capital intensive urban hubs.

Furthermore, we have seen retailers struggling with the number of stores they have in their fleet. With the rationalisation of store fleet comes an opportunity to use stores as distribution centres. Recently, we see retailers convert abundant stores to Dark Stores (see Callout).

Dark Stores – the supermarket we do not see or visit

In west-London, Waitrose operates a dark store out of an old John Lewis carpet warehouse. The store looks similar to a normal store, with aisles full of products. However, the store is not accessible for customers and the only people walking the aisle are stock pickers.

Dark stores are solely focused on fulfilling online orders in areas with high demand. The location of dark stores is important for retailers in large geographical areas, therefore converting a normal store to a dark store can sometimes be very beneficial



We believe that stores play a pivotal role in supply chains of the future. Hence, the products retailers put on shelf do not just represent the purpose of the store, but also the way they enable services like 1 hour delivery or buy online, pick-up in store.

Turning data into action

Capturing in-store data requires new thinking

The digital age has brought new technologies that have driven major shifts in consumer behaviour. These new technologies have been demanding for businesses, but the demand has paid off. Companies have been able to use the trail of digital data that shoppers leave behind to improve engagement and conversion. Using data to optimise the digital shopping journey has been so useful that we've seen a host of new tools and techniques emerge (e.g. Google Analytics, Optimisely, Multi-variate testing), as well as new career paths in data science and digital analytics³⁰.

Digital stores aren't the only platform that can benefit from such technologies. Brick & mortar stores can leverage data, too. Retailers who understand and appreciate that will quickly find a competitive advantage over others in the industry.

While it's fairly easy to capture data online, capturing data offline requires new thinking. We often see retailers engage with research-companies to collect in-store data. While that is a good start, we believe that with the rapid increase of technology in retail, many tech start-ups will be able to provide the same service in a much more efficient and extensive way (see capturing in-store data through technology).

“Measuring a person’s behaviour online and tailoring your offers to that specific person is fairly easy. Doing that in the physical world is more challenging, but highly important! You’ve got to absolutely understand me and my shopping journey, by using data and analytics across all channels. That way you can adapt the customer experience to me as I move into the physical store, or even a mobile/virtual store. Hence, maximising the customer journey through data & analytics to the point that I walk into a store and they say: “Hi Andrew, how are you doing?”

Andrew Brothers - CIO (Ahold Delhaize)



Capturing in-store data through technology

1. Loyalty programmes

Loyalty programmes still remain the number one tool to capture customer data across all touchpoints. It helps retailers understand customer profiles, behaviours, and preferences. Some of the successful examples we've seen in retail are My Starbucks Rewards and The North Face VIPeak.

2. Computer vision

Intelligent cameras anonymously capture and analyse customer behaviour in-stores but also of people who stop by the store window. Furthermore, they can track associates and guide them through their daily tasks as well as gather information on assortment performance.

3. Next Gen Check-out

Enabling a multiple of payments methods through advanced point-of-sales allows for data capturing and analysis. For example, paying through WeChat, Apple Pay or AliPay does not only increase customer experience, it also allows retailers to tie purchases to profiles.

4. IoT devices in-store

Many retailers are already able to take advantage of the array of sensors most customers, associates and devices in-store carry. We have seen applications of smart shelves communicating with inventory management systems to keep shelves stocked and customers willing to share their information if they feel they're getting sufficient value in return.

Data is becoming a commodity, and because of social media and access to consumer's online browsing behaviour, more digital data is now publically available. For this reason, it is important that retailers understand how to store and combine data from different touchpoints, which are often stored in separate databases, in order to create a 360 degree view of the customer throughout their shopping journey. Hence, through data they can improve operational efficiency as well as customer experience.

Historically, transactional data has been relatively easy to measure. However, as we encourage retailers to focus on customer experience to build brand loyalty, we need to change the way stores are operated. Tracking the success of customer experience initiatives requires a new set of KPIs in store.

Quantifying customer experience

We have explored ways to capture in-store data, but in a digital age where customer experience has become the competitive advantage retailers hold over their competition, it is important to understand customer experience. Hence, we quantifying the customer experience by connecting it to business value enables retailers to increase bottom line returns on CX investments. Have a look at some examples to quantify the customer experience

1. Customer Satisfaction Score

Metrics such as Customer Satisfaction Score (CSAT), Net Promoter Score (NPS), and Emotional Connection can help retailers to measure the level of positive or negative behaviours and emotions of customers.

2. Customer Effort Score

Retailers can set metrics on how often/long customers engage with the retailer via different channels and indicate if these interactions are impactful (e.g. through Customer Effort Score or Engagement Time).

3. Customer Promotion

CX can also be measured by how much the customer promotes the brand via social media; tracking of promotion and sentiment. Retailers can set metrics on social media and web engagement of their brand; shared, likes, hashtags, ratings and reviews and comments.

Capturing in-store data is important, but does not generate any value by itself. We often see retailers focusing on data gathering, without having a clear idea on what to do with data. Extracting insights from data, and turning those into action is where the real value lies.

Turning data into action

With the growth of data, generated by an increasing array of connected technologies, many companies are struggling to settle on the right technology application or justify the capital investment that the technology may require. Over half of retail CIOs surveyed in 2015³¹ reported that “turning massive amounts of data into usable business insights” was among the five greatest challenges, according to the National Retail Federation and Forrester.

In many cases, this difficulty is due to the fact that, while it may be clear how connected technology can save money, by for example, making operations more

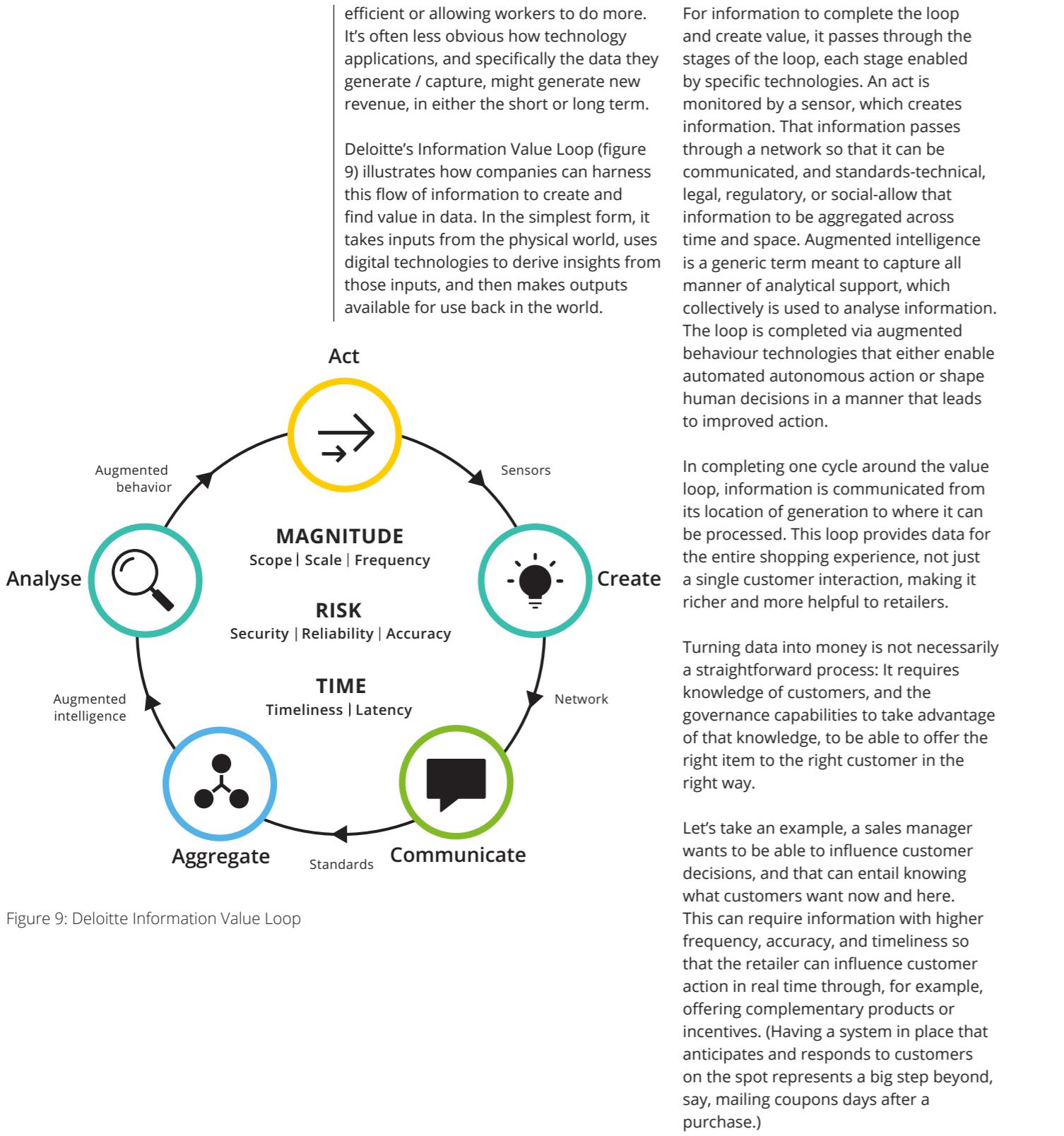


Figure 9: Deloitte Information Value Loop

Of course, there are multiple ways retailers might address the challenges and opportunities presented by the vast amount of data; there is no "one size fits all" solution. But when a company can successfully complete the Information Value Loop, it can create a powerful experience for its customers and bolster loyalty. As information becomes a key differentiator in more and more markets, a command of the Information Value Loop may well become a prerequisite to competitive success.

However, turning data into action through the information value loop requires some fundamental elements in your organisation. That is why, without a mature analytics capability in place, retailers often fail to generate value from data.

Combining the heart and science of retailing

If you open the doors to Amazon.com and Alibaba's most sacred rooms and try to understand what drives them, you'll find similar philosophies. Both companies are devoted to measuring and analysing data and using this data to educate themselves. When Amazon.com decided to pilot their store Amazon GO, they did not shy away from their data-driven approach. They didn't treat their brick & mortar stores differently than their online platforms. When Amazon GO launched in December 2016, it included technology like computer vision, deep learning algorithms and sensor fusion to automate purchase, checkout, and payment steps in store³². These technologies decreased staff expenditure and enabled customers to do their shopping quickly and effortlessly. Furthermore, it enabled Amazon.com to track and monitor in-store behaviour.

However, do people really enjoy going to an Amazon.com store? We believe so, but it is not for everyone. Taking a science-approach to building stores, like Amazon.com did, is indeed very much of this age. However, the way that retailers have traditionally built stores, almost from the heart, has generated stores that people feel welcome and tailor to a different kind of shopper.

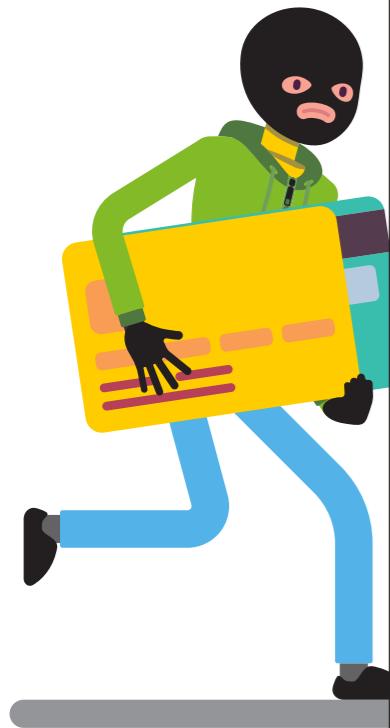
This distinction, between heart and science, is something we often see in organisations that we work with. It might also be a product of the new generation of millennial workforce entering the field. Nevertheless, we see that both can learn from each other. The data-driven approach that science-employees take, has much to learn from the heart-philosophy that was traditionally responsible for stores that you would want to go to.

Therefore, in order to make value from data, and turn those into action, we believe a strong organisational set-up, where a mature analytics capability supports merchandising and design functions is necessary for retailers of tomorrow.

"Within the company, there's a real division between the Digital-oriented- and the non-digital oriented people. The non-digital just want to put more screens on the wall, but the Digitals know it's not about the screens but about the good stuff that happens behind those screens."

Digital Director - Global Retailer





Secure by Design

Smart, connected objects offer tremendous opportunities for value creation and capture, but can also create tremendous risk, demanding new strategies for value protection. A single vulnerable device can leave an entire ecosystem open to attack, with potential disruptions ranging from individual privacy breaches to massive breakdowns of public systems. In the face of such challenges, companies can remain secure, vigilant, and resilient by taking several steps to safeguard their ecosystems and the data they create:

1. Work to define standards for interoperability

Adhering to one standard only or actively getting involved with consortiums to develop a set of standards can help ensure that devices within a network can all communicate and work together safely and effectively.

2. Use purpose-built devices or add-ons

Rather than pre-IoT solutions. Rather than retrofitting or extending functionality of old systems in ways for which they weren't designed, companies should strongly consider wholly new, secure technologies designed specifically for the IoT.

3. Institute data governance

Enterprises should consider playing a stronger governance role by defining which data to secure, what it means to be sufficiently secure, and, by extension, which products meet that goal. Guidance around how data can be securely collected, used, and stored can help prevent unwanted breaches and prevent a risk event from snowballing into something larger, and can also outline the lines of responsibility in the event of a breach.

4. Create loosely coupled systems

Ensure devices within an ecosystem are loosely coupled and resilient so that the failure of one device does not lead to widespread failure.

The prospects for creating and maintaining a seamless, secure network-with or without external partners-may seem daunting, considering that vulnerabilities exist on all sides, be they physical or virtual, inadvertent or malicious. Security cannot be an afterthought - it must be integral throughout the design process.

Transforming your store fleet

Transforming your store fleet

Over the previous five chapters we have covered the different perspectives that we believe must be considered in developing a new store innovation. First was determining the purpose of the retail store. Then with this in mind working through three key aspects of the store concept - the Associate, the Technology and the Products in the store. In the last chapter we rounded this off by looking at how to capture data that can be used to gain feedback on the customer journey and store experience.

Considering these components can help to develop and gain feedback on new store innovation. However, the challenge doesn't stop here. Leading retailers have hundreds if not thousands of stores. So the challenge is not just to create one or two successful stores, but to shape a store fleet ready to meet the needs and expectations of customers today and in the coming years. In this section, we would like to share with you some of the themes and ideas from our discussions with experts on how to tackle this challenge.

The elusive search for innovation that scales

A common theme that emerged from our industry discussions was the challenge in scaling innovation. Several interviewees cited that they have been able to develop and deploy successful store innovations. When digging into these, the impact of these innovations have been of limited impact to the business. They are add-ons layered on the existing store formula making incremental improvements to store performance rather than bringing a step-change to the business as a whole.

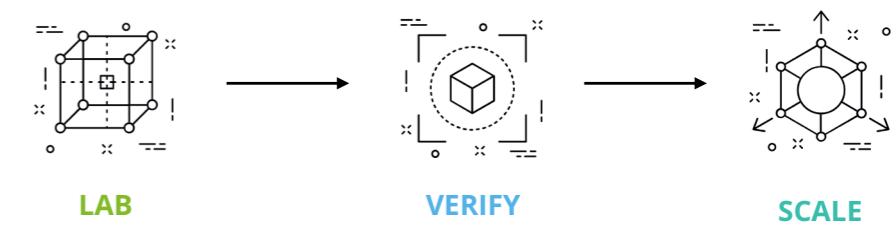
The issue with innovations that make greater impact, is that they tend to re-invent the existing way of doing things. And the more they re-invent the greater the uncertainty in their business cases. For this reason, we find it more difficult to gain support for such innovations. Such ideas make leap-of-faith assumptions and require an appetite for risk that is typically unacceptable to the organisational culture of larger more established businesses.

For this reason, we suggest a different approach to make more impactful and holistic innovation. We advocate using hypothesis and validated learning methods such as those popularised by the Eric Ries in his book "the lean start-up". In this approach we test and verify our leap-of-faith assumptions through live market experimentation. To conclude this chapter, we will review some a practical approach to applying this in the context of transforming the store fleet.

Applying lean-start-up methods to store transformation

"Lean Start-up" is a system for developing a business or product in the most efficient way possible to reduce the risk of failure. A central tenet in this system is that the validating and adjusting new concepts through customer feedback throughout the process of concept development will reduce market risk.

Together with Monolith - a technology start-up focused upon bringing customer insights to the store transformation process - we have translated some of the key techniques used in Lean Start-up and how they may be applied to the store transformation challenge. This leads to the below phases approach to store innovation consisting of three steps: lab, verify and scale.



Step 1: Lab

During the Lab phase, new store concepts are tested in specifically designated "Lab Stores". We adopt the idea of a Minimum Viable Product (MVP) from Lean Start-up in this process. The MVP is a product with just enough features to satisfy early customers. The purpose of the MVP is to provide a testable version of the product to facilitate early learning about potential customers.

1. An MVP should be developed as quickly and as cheaply as possible to test fundamental business assumptions. For example, the founder of Zappos hypothesised that there was a latent customer demand to buy shoes online. Rather than immediately building an eCommerce operation, he decided to run an experimental business model to test this quickly. He went into shoe stores and took photos of the shoes and posted them online. When customers made orders, he then went back to buy the shoes and fulfil the orders. Our view is that most retail players should be applying a similar experimental approach. Cutting down on scope and increasing the volume of store concept testing. We want to see more concepts brought to the market at a faster pace to facilitate learning around new retail business models. These should be seen as experiments with lower (initial) standards of quality and with greater acceptance of failure.
2. MVPs are tested in a disciplined way. We make clear the assumptions surrounding an MVP and test these specifically during the pilot. Our experience is that often store pilots lack proper rigour in testing and in particular it is unclear what is to be tested at the outset and what metrics indicate good performance. Treading into unknown territory, we should expect that the first store concept MVPs will not be successful, and that adjustments to

the concept will be required. Without a good test and adjust mentality at the outset pilots are abandoned early without full consideration and potentially good ideas are abandoned.

To facilitate the development and testing of store concept MVPs, we propose to ensure testing of new concepts in specifically designated "Lab stores". Any existing store may be taken and developed into a Lab store. There are several advantages behind this approach:

1. Superior data capture: Lab stores can be rigged with a technical capability for data measurement (see chapter Turning data into action). For example, in-store computer vision can allow detailed understanding of customer behaviour and interaction with new concepts.
2. Superior test understanding: Lab stores can be staffed with specialist competences required to properly test and assess new concepts to maximise learnings.
3. Enables faster test iterations: Lab stores can be governed with different processes, policies and targets that allow for fast execution of concept MVPs while allowing the rest of the store fleet to remain managed efficiently to high operational standards.

"If you don't afford yourself the opportunity to truly experiment, test & explore because you're too focused on the need to prove results & scale, you won't do a good job coming up with superior experiences. On the other hand, if you don't develop the depth & expertise to meaningfully scale, then you'll never get out of pilot mode and demonstrate results. It's a delicate balance requiring competencies on both sides of the coin."

Worth Darling, Director Consumer Experience (adidas AG)



Step 2: Verify

While Lab stores enable testing and understanding of the MVP concepts, they are specifically rigged and run for the goal of learning. Once we are happy we have a concept that will operate in the real world, we need to verify them in a more realistic setting.

For this we suggest to run concepts in specific stores as part of a verification process that proves that the results found in the Lab can also be run in the live store environment with no special standards of technology, resourcing or target setting. The verification process should also be runned as follows.

The verification store group should contain a baseline store group where no changes are made as well as stores where the new concept is deployed. This allows benchmarking of the two groups to drive further learning on the performance impact of changes and how customer behaviours might be influenced in the two groups. If we include the lab stores in the verification phase, we can even run A/B/C test scenarios.

Actionable metrics

A critical aspect to the Verify stage is to measure and improve store performance against key metrics. These metrics should be well chosen to accurately reflect the true drivers of business performance (in the Lean Start-up method, Eric Ries refers to these as "Actionable Metrics" as they are metrics that help make a decision or determine what course of action to take).

Metrics should be drawn up that reflect the macro business outcomes that matter. So for example, tracking store dwell time and seeing the number go up or down is not as important as tracking customer behaviours that lead to something useful like gaining or losing revenues or customers or understanding the key

functions and benefits that people are coming to the store for. An example might be trying on a garment in a fashion store or putting a product into the basket at a supermarket. Additional technologies can allow you to get to these much more actionable metrics. Our earlier chapter on Turning data into action delves into more detail on possible methods for additional data capture and measurement.

Step 3: Scale

The final step of our process is to scale the change across the store fleet. Here the returns from the verification store group should be replicated as the concept is rolled out across the fleet. Data gathering and validation should continue over these stores. Although these will likely not have the same data capture facilities as the Lab or Verify store groups (in order to keep costs low) some fundamental store data should be tracked (e.g. from the POS systems or loyalty/mobile apps) and compared back to the expected results to see if they cast any serious doubts on earlier conclusions.

A lab store in action

A recent example of using new technology in a retail store is our Belgrade Connected Store Experiment store. Data generated by this store and non-connected stores in the region, products and technology is being verified to see what impact it makes on customers and the store itself. In the following chapter we explore this journey.

"We advise clients to look at 80/20 moves, where 80% which you got are important but you're not investing a lot in, they are just shifting products. The other 20%, vast locations, are used to really impress the customer"

Retail & IoT market development lead (Telecommunications Company)



"The store optimisation journey should always start with the shopper in mind. This is why it is crucial to test key drivers of shopper spend and optimise the performance using fact-based decisions in a Lab store. Most of the insights which are increasing shopability could be applied across the fleet resulting in increased profitability."

Martin Birač, CEO (Monolith)



The Belgrade Connected Store experiment

Introduction to Legend

World Wide

In the previous chapters, we provided a structure that retailers can use to design future stores, select and prioritise technology, and efficiently allocate associates. Now we're going to show you what that looks like in action. Through a unique partnership with technology vendors and start-ups, we have been able to successfully design a connected store for Legend World Wide, a high-end fashion retailer in Serbia.

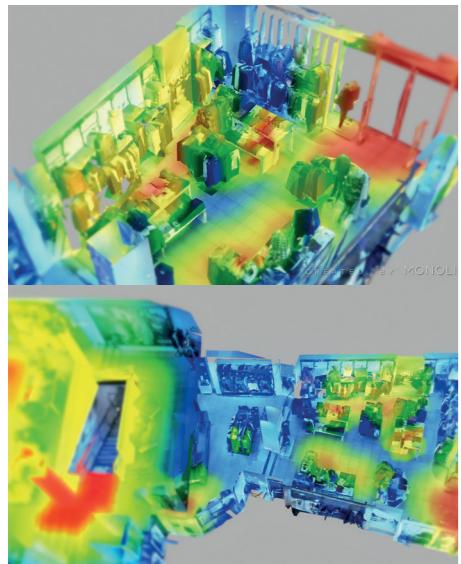


Figure 10: Computer vision customer heatmaps

Legend recently opened a new flagship store. The store is located on Belgrade's busiest shopping street. Over the past few years, Legend has dabbled with some in-store technology. They tried an early version of the smart mirror and interactive product displays. These experiments failed since the technology was put in without a clear strategy. Legend wasn't able to collect any data from their experiments, so very little was learned, and there were no actionable insights.

We spent a lot of time talking to Legend's senior management and with store staff, identifying a clear set of pain points. Through those discussions, we concluded that their mistake was to think with technology first. Leading with technology caused a gap between what customers wanted and what Legend gave them. So, we started over. We came up with the questions we wanted to answer first, then we considered how we could use technology to gather data on customers and behaviour. These steps delivered the right ingredients so we could make data-driven decisions for Legend's store concept.

Building a connected store

Soon after these discussions, we received permission to start collecting in-store data. We installed Monolith's computer vision to track customer behaviour, get to know their profiles and optimise floor plans. Impinj began tagging 16,000 SKUs with RFID and installed their reader, which enabled them to measure how people interacted with products. That unlocked information on how products moved around the store, which helped Legend understand what products people took into the dressing room and which converted, giving valuable product-level insights. All of the data was captured in PTC's Thingworx platform, which aggregated the data and provided

analysis across all touchpoints. The combination of these technologies gave us a deep understanding of the customer and helped us surface insights that would optimise the in-store experience and prioritise any further technological investments. For the first time, we were able to sufficiently open up the black box of brick & mortar retailing. Lastly, we are in the process of upgrading a pre-existing POS with an NCR solution which will be connected to the ThingWorx platform. Store personal will be able to check in one view the overall health of the store and will receive proactive information i.e. to order consumable. Legend will benefit from optimised IT spend and improve their in-store associate productivity by migrating to an Omnichannel ready support model.

Collecting our first insights

An analysis of heat maps showed that Legend did not have enough in-store signs. Monolith's computer vision identified that only a portion of male visitors actually ended up on to the men's section, which turned out to be unusually lower compared to other retail stores. We were able to deduce that men walked into the store and browsed the clothes on the left thinking they were men's clothes. They immediately turned around and walked out of the store. There was no clear indication that the men's section was through the back of the store and up the stairs. This happened three weeks into the project, and we solved it by installing clear signs and navigation. This insight could have been picked up by experienced retail-experts, but through computer vision, we were able to uncover insights like these in a much faster way.

As the store has just opened, we will gather more data, conduct more analyses and hopefully turn those into actions which will improve the store performance and customer experience. We are very excited about this experiment and expect more exciting insights over the period to come.

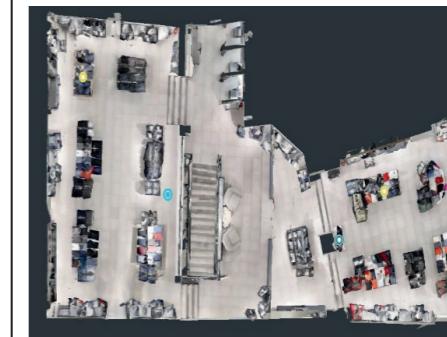


Figure 11: 'Dollhouse' view of the store



Figure 12: Thingworx dashboard



Figure 13: Opening of the store

Closing thoughts

Getting started

When we set about writing this paper, we wanted to trigger practical discussion with retailers that are struggling with the challenges and opportunities in transforming the store fleet. To form the starting point we tapped into the experts in our retail networks and took insights from our own connected stores initiatives from around the world.

The combination of all this input formed the basis for this study which we hope is a valuable contribution to the retail community. If you are presently exploring re-shaping your store landscape, we encourage you to consider our parting key messages:

1. Re-invent the store from first principles

Consumer lifestyles have changed dramatically and are continuing to change rapidly. Start from a blank canvas with first principles and understand how your store can play a significant role in the lives of your customer in the coming few years.

2. Tech-charge your organisation

Ensure that your organisation becomes more capable with technology and understand how to foster innovation and integrate into the start-up scene

3. Consider the store concept from multiple angles

Define your store associate, select and prioritise the right technology and use a data-driven approach to inform your decisions around the products you put on shelf

4. Connect your stores and turn data into action

Data-driven decision making enables faster and better informed decision making. Make sure you capture data and build the analytics capability to generate insights from which you can act

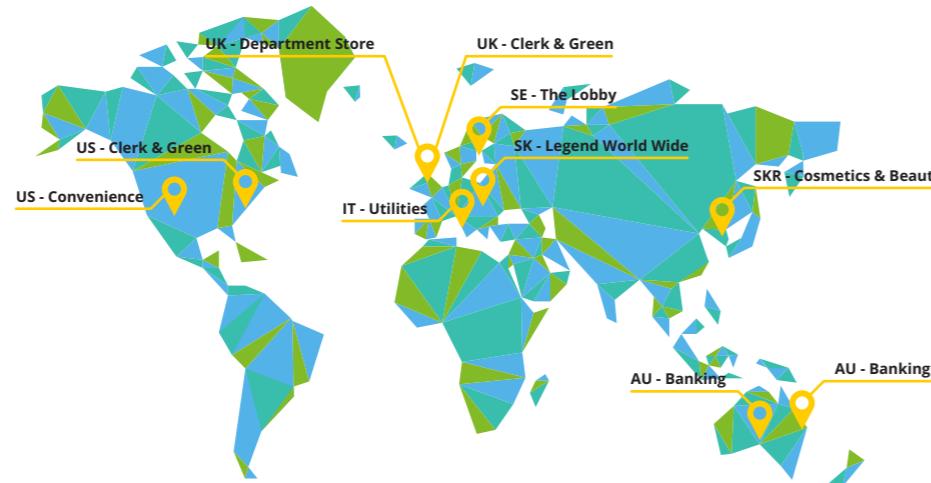
5. Apply Lean-Start-up thinking to create transformational store concepts

Increase speed in experimentation and implement disciplined tests to develop robust insights on what does and doesn't work

Join the dialogue! Now we invite you to join us to learn from the journey. To learn about the change we have created our own Connected Store and have been collating data for the last three months including the 2017 Christmas holiday season. Contact us to learn more about our latest findings from this data set.

Our connected stores initiatives around the world

Besides the Belgrade Connected Store Experiment, we are running multiple connected store initiatives around the world. Together with our global network of partners we aim to help retailers today with the challenges of tomorrow by offering them inspiring innovative retail solutions. As we are able to provide strategic advice, as well as run a creative design process and technical implementation, we have been able to successfully work with retailers across the world in building connected stores. Feel free to reach out to us if you would like to visit a connected store!



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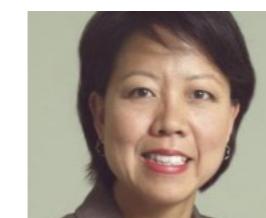
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