



# BRICKS, CLICKS & MARKETPLACES

A 21st century retail roadmap for  
digital transformation

# PlanetRetail

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Happiest Minds, the Mindful IT Company, applies agile methodologies to enable digital transformation for enterprises and technology providers by delivering seamless customer experience, business efficiency and actionable insights. We leverage a spectrum of disruptive technologies such as: Big Data Analytics, AI & Cognitive Computing, Internet of Things, Cloud, Security, SDN-NFV, RPA, Blockchain, etc. Positioned as “Born Digital . Born Agile”, our capabilities spans across product engineering, digital business solutions, infrastructure management and security services. We deliver these services across industry sectors such as retail, consumer packaged goods, edutech, e-commerce, banking, insurance, hi-tech, engineering R&D, manufacturing, automotive and travel/transportation/hospitality. Headquartered in Bangalore, India; Happiest Minds has operations in USA, UK, The Netherlands, Australia and Middle East.

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# Foreword from Happiest Minds

Consumerisation of technology coupled with a rapidly changing competitive landscape has redefined the way consumers function, organizations operate and how enterprises create value. Retailers continuously grapple with the question of what it takes for them to digitally transform. It has become fashionable to use words like Omni-channel, Multi-channel and such. But, irrespective of the terminology, the Holy Grail for retailers remains the same – to ensure true continuity of consistent and delightful customer experience.

To get actionable insights into what it takes to win across *Brick, Clicks & Marketplaces*, Planet Retail in conjunction with Happiest Minds Technologies has developed this paper. This report highlights the challenges retailers are facing in adapting their business models to become fit for the digital age. Moreover, it will provide practical guidance to identify the right strategies and technologies to transform their businesses and remain agile in the face of unprecedented change.

We, at Happiest Minds, believe that this transformation blueprint can be encapsulated in an elegant and powerful 3R framework –

- **Re-imagine Customer Experience** to ensure 360-degree customer delight with customer intelligence percolating across channels
- **Re-engineer Business Efficiency** to create a nimble, agile organization
- **Reduce Business Risks** by creating a compliant and secure ecosystem, thus unshackling the business to operate in a frictionless environment.

The technology bedrock required to make this a reality consists of an integrated set of disruptive technologies – mobile, analytics/Big Data, cloud, security and IoT. We look forward to partnering with you in the journey of leveraging the 3R framework to create *the* retail success story of the 21st century.

“  
The Holy Grail for retailers remains the same - to ensure true continuity of consistent and delightful customer experience.



**Salil Godika**  
President & CEO, Digital Business Services  
Happiest Minds



# 1. Executive Summary

### Introduction

While the idea of retailing has not changed – consumers still value price, convenience, speed and service – the pace of change in retailing has accelerated radically. As a result, retailers are grappling with an urgent need to transform both their offerings and operations in order to keep up.

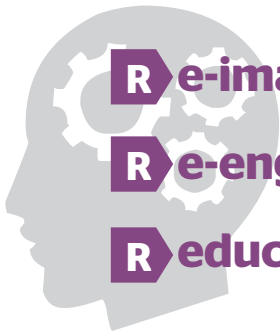
### The Challenge

In their efforts to adopt business models fit for the digital age, regardless of their operating model – bricks, clicks or marketplaces – retailers therefore have some strategically vital decisions to make. Legacy systems necessitate they need to reconfigure business models and **organizational processes**, identify the right **channel mix** and select the most transformational **technologies** from a plethora of choices.

According to different geographies and demographics, operations will have to pick matching systems and strategies. Yet, at the same time, it pays to keep options open in order to maintain flexibility and competitive agility. This will enable retailers to re-imagine the shopping experience and create a wow factor for customers.

### The 3R Framework

With so many retailers operating in midst of unprecedented levels of change, uncertainty and competition, this white paper is designed to help retailers navigate the emerging and, as yet, undiscovered retail landscape as it is shaped by transformative digital forces. As each retail business will have grown from different starting points, in different channels and geographies, focused on different target groups, there will be no ‘one-size-fits-all’ solution in this quest. The only constant is the inexorable rise of digitally-driven customer expectations. Therefore, this study will provide some of the best practice routes, mapped on to a framework, outlining three dimensions of transformation:



**R**e-imagine Customer Experience

**R**e-engineer Business Efficiency

**R**educe Business Risks

This is set to enable retailers to confidently chart their own course or capitalise on any necessary change of direction.

### The Conclusion

Digital transformation is not an end in itself. It is a key enabler for retailers looking to provide an exciting and seamless shopping experience. But an unfailing focus on the customer – as the catalyst for this transformation – must become the ultimate strategic guiding principle for every retailer. While on this journey, it is also imperative that retailers identify the right partners that can help to guide them in achieving maximum competitive differentiation and operational effectiveness.

### The Plan

The final chapter comprises a staggered **90-day action plan** designed to help retailers evaluate their current operating models and identify silos in their organizations. It also offers a roadmap for the redesign of processes, re-engineering of technologies, and identification of the need for external, expert resource, as well as and the timing and prioritisation of technology-based initiatives for roll out.

# 2. Consumers in the Digital Age

### What shoppers want

It may seem obvious, but consumers are looking for positive, affirming and rewarding shopping experiences. They expect speed, convenience and superior levels of service, all at the best price. This is where retailing has not changed at all. These guiding principles still remain. But their tolerance for experiences that do not deliver on these expectations is lower than ever before.

In fact, shoppers have changed more in the last five years than in the previous 50. Digitally-empowered and constantly-connected, the modern shopper demands more from retailers than ever. And they are more promiscuous when these demands are not met, willing to trade up or down to competitive retailers and brands at the touch of an online shopping button. This has meant the industry pace of change has only been accelerating, driven by technology and the digital revolution embraced so wholeheartedly by shoppers.

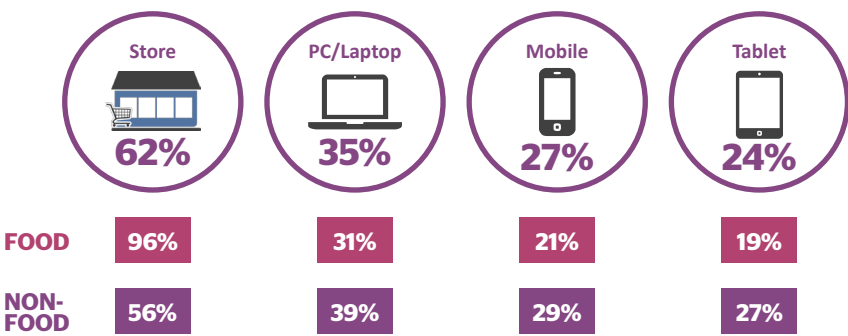
### Empowered by mobile technology

The ubiquity of mobile devices and wireless connectivity in recent years has, for example, enabled consumers to access the internet anytime, anywhere. Via smartphone or tablet, they can access detailed product and transparent pricing information. Moreover, they can make purchases wherever they want, 24/7, and increasingly choose to execute them on a mobile device.

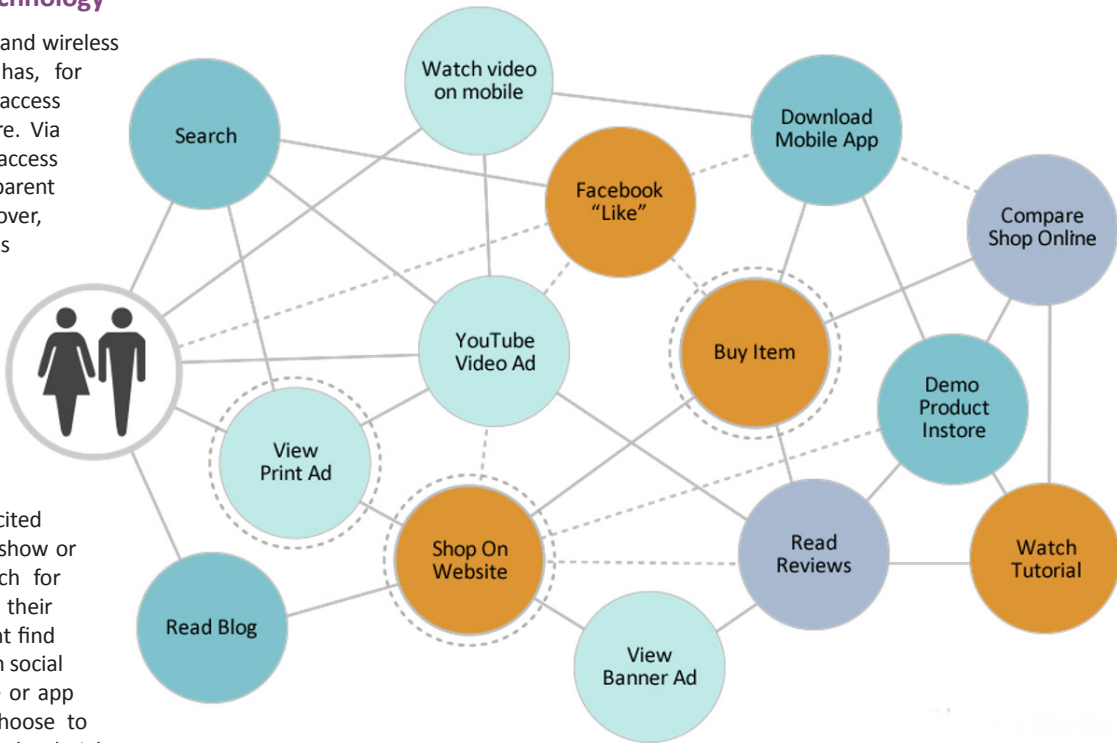
The shopper journey, has itself become extremely complex and typically involves and crosses multiple channels. A person can get excited about a product seen on a TV show or advert, leading them to search for more detailed information on their PC or mobile device. They might find out what peers think about it on social media, use a shopping website or app to check prices, and finally choose to buy it online and collect it from a local High Street store.

Instant access to information and purchase has led today’s consumers to develop channel-agnostic shopping habits. They will use whichever channel or combination of channels that is most convenient for them in a variety of given situations. From retailers, as a result, they expect a seamless shopping experience whichever way they choose to connect.

### Proportion of Use: Shoppers using each channel for shopping purposes (%)



Source: Planet Retail; Base Size: 90,000; Period covered: August 2014 to November 2015



Today’s consumer journey has become extremely complex and typically involves digital channels.



Long live the store

While these developments are unlikely to see the store become extinct, the physical retail experience will have to fundamentally change and evolve to play a new role in changing shopping behaviours. With virtually every product available to shoppers online and services like same-day delivery becoming increasingly the norm, bricks and mortar stores are evermore challenged to provide an exciting, seamless shopping experience and excel in personal service. The physical store will still play a key role in allowing shoppers to touch and feel products. They also expect to get the full brand experience and access specialised services and advice. But these customers may not necessarily complete their purchases in the store, preferring to buy at another time, online.



With shopping journeys beginning and traversing any combination of channels, it is not only the physical store that has to forge a new path. Online channels are similarly faced with new exigencies. Legal requirements are becoming tighter, competition is getting fiercer and consumer expectations of a complimentary physical or virtual presence to provide that the human touch are growing day by day.

Shopping also evolves online

Fulfilment and returns logistics are key differentiators and add significantly to the cost of operations. Customers want fast, safe and convenient delivery. New ways of more flexible fulfilment options, such as Uber, Shipt or Deliveroo-type rapid delivery or curbside delivery are raising the bar, not to mention experimental developments such as the use of drones or robots.



Those retailers that also have a physical presence do have an advantage as the sustainable success of click & collect services, whereby customers can gather their online purchases at a physical outlet, shows. There is an increasing need for pure online players to make the move into physical retailing as well. Some, like Amazon, have begun to open their own outlets, while others are investing in lockers or eyeing partnerships with non-competing bricks and mortar stores to use them as fulfilment hubs to tackle the challenges of guaranteeing on-time delivery over the so-called last mile, from distribution hub to final destination.

Knowledge brings loyalty

As shoppers move freely between channels and choose their source of supply situation, predominantly based on price and convenience, it has become increasingly difficult for retailers to gain shoppers' loyalty.

To remain successful, irrespective of connecting with consumers via bricks, clicks or marketplaces, (which bring a number of independent brands and retailers under one, figurative virtual or physical roof), it is understandably difficult for any retailer to fully understand behaviour and wants of its customers. Jaded by the constant bombardment of marketing messages, today's consumers will only respond positively to those offers that are relevant to them. To win shopper loyalty, marketers therefore have to engage with shoppers in a personalised way that is able to provide experiences contextualised for every type of shopping journey, in every channel.



# Five Key Trends Impacting Retailers

**Constantly connected consumers enabling 'connected experiences'**

The use of mobile throughout the path-to-purchase. Smart retailers are finding ways to accommodate these valuable shoppers and drive sales across all channels. More will look to integrate these with mobile payments.

**The store reinvented enabling 'connected experiences'**

Serving customers across all channels. **Caution:** Understand and tailor what technologies will work best for customers. Digital development and data integration capabilities will also be important.

**Cracking the final mile 'working together to stand apart'**

Fulfilment is a differentiator. Providing flexibility, maximum availability and innovation requires an accurate inventory view, and better connected logistics and supply chain automation.

**Evolution of Marketing & Loyalty 'working together to stand apart'**

Engage in two-way conversations across multiple channels. Retailers will need to apply sources of Big Data to sophisticated analytics to earn, and not just acquire, the loyalty and advocacy of the consumer

**Personalised & contextualised experiences**

Demand for more relevant, tailored shopping experiences is on the rise. Excellent customer data management will be required. In future, retailers will look to use more sophisticated systems that use Artificial Intelligence to hone engagement

Retailers must respond to new market dynamics and emerging customer expectations.

### 3. What Do These Trends Mean for Retailers?

Planet Retail characterizes the changing retail landscape according to these main developments:

- **An inexorable move towards digital** - Global online sales are set to grow by 108% over the next five years, compared to 38% in-store;
- **The blurring of channels** - Nearly 90% of sales are completed in stores, but over half are now influenced by digital interaction;
- **Disruptive competition** - Alibaba accounts for some **80%** of all online sales in China, while the stock market value of Amazon surpassed that of Walmart, as the world’s biggest retailer, during 2015;
- **Internationalization** - the proportion of international market sales among the top 100 global retailers is predicted to grow from **24.4%** in 2014 to **26.7%** by 2020;
- **Personalization** - **41%** of consumers said their choice of retailer is influenced by whether they offer an experience that relevant to their needs.

These changes call for retailers to develop proactive strategies as well as to enhance their core capabilities in order to gain a competitive edge.

#### Survival of the fittest

While the majority of consumers are well equipped with latest technology, many retailers are still struggling to catch up. This is by no means due to a lack of technology investment. But, while a shopper simply has to pick her choice from the current range of iOS or Android devices to remain ahead of the game, there is no ‘silver bullet’ technology solution that can make organisations fit to provide retailing experiences fit for the digital age.

The rapid pace of technological progress forces retailers to put innovation at the core of their strategies. Retail can no longer be viewed as a rather conservative industry where significant change comes only slowly, marked by a major paradigm shift. Typically, it took retailers decades to adapt to innovations. More than twenty years passed from the first scanning of a barcode at a retailer’s till until the technology had been established comprehensively across the industry.

In the digital age, new technologies are mushrooming and advancing at accelerating speed. Leading retailers are now adopting principles from start-ups and have begun embracing a Silicon Valley mentality. Some have launched their own tech labs or embrace so-called hackathons or tech accelerators aimed at attracting emerging tech talent and stimulating innovation in the industry.

Main technologies enabling retail transformation include advanced analytics and Artificial Intelligence, mobile technology and virtual reality or biometrics and robotics. To remain competitive, retailers will have to increasingly invest into technologies and tech expertise.

Organisations must be able to scale business as required at speed, which makes it mandatory to take care of capacity planning and ensure identity management across different functions to seamlessly view information across channels.

On their way to digital transformation readiness, retail operations have to deal with complex organisational challenges, highly interdependent processes throughout the supply chain and, in many cases, legacy IT systems that can no longer be easily expanded or updated.

Due to technical restrictions and limited capital expenditure resources, many retailers have added new channels or operational models without fully integrating them into their legacy enterprise retail management systems. Consequently, too many operations continue operating in silos, which prevents them from being able to meet consumer demand in an agile, consistent and sustainable way.

#### Single view on inventory, product and the customer

In an effort to provide customers a seamless shopping experience across channels, retailers have an urgent need to get rid of operational silos. To achieve this, it is mandatory to gain transparency on inventory throughout the supply chain.



A store can potentially rescue sales of an item currently out of stock, when the sales assistant can order it for the customer online. A shopper browsing for a product on the retailer’s website might choose to pick it up at one of its stores if the system was able to tell her that it’s actually in stock. To facilitate all this, systems have to track inventory in (near) real-time and provide access to this information across all operations and touchpoints.

Current, correct and compelling product information is a prerequisite for any successful retail business. Online channels not only require detailed prescriptions and specifications but also images as well as videos or other multi-media content. Increasingly, consumers want to inform buying decisions through product ratings, customer comments and feedback from social media. All of this information is being utilised in stores as well, for example to feed digital signage or kiosk systems as well as to inform sales assistants via their mobiles. The acceleration amount of both structured and unstructured data can only be handled using advanced content management systems, which can organise product data and distribute it across all touchpoints.

It is just as important to have a 360-degree view on customer data and their sales history. A shopper who bought a product from a retailer online expects to be able to return it in one of its bricks and mortar outlets nearby. The blending of digital technologies with the physical retailing experience is an essential requirement for modern retailers. This demands implementation of systems that provide a real-time view of inventory throughout the supply chain as well as transparency on customer information.

#### Orchestrating the supply chain

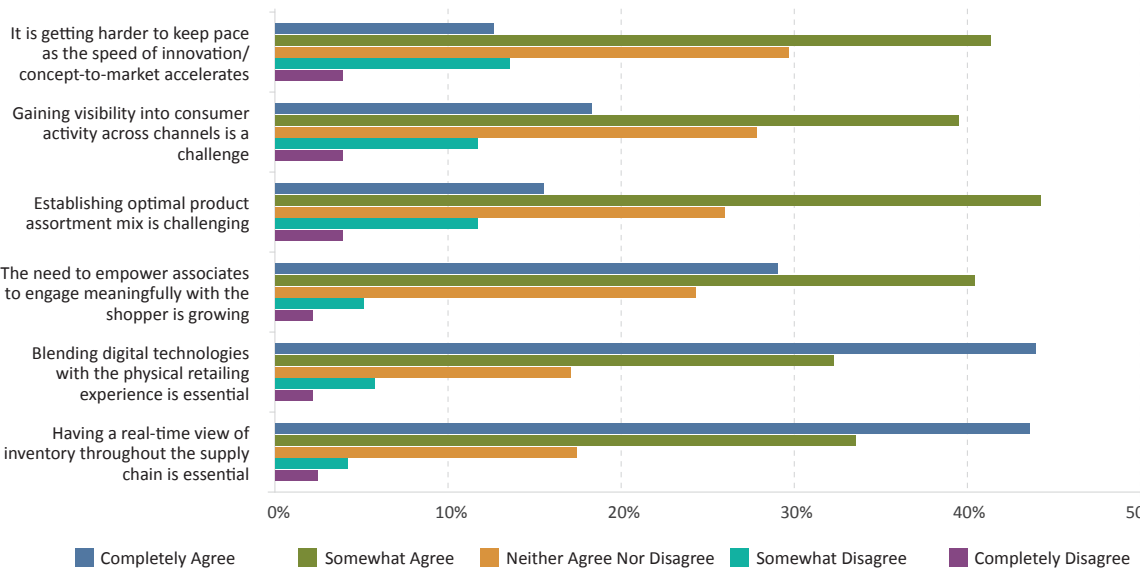
Retailers aiming to transform the customer-facing experience are constantly challenged on the back end to optimize inventory management and their supply chains, thereby enabling a flexible supply chain that supports dynamic inventory movement across channels. To ensure that the business can meet both current and future customer demands while optimizing inventory, logistics, and asset utilization, it needs to intelligently broker orders across the various systems and processes utilized by the parties involved in replenishing an order.

Accurate order information is often unavailable when needed; because companies maintain multiple databases of order information, they are forced to manage by individual channel. A modern distributed order management system aggregates orders and provides a single version of the truth across channels.

Inventory stock-outs are still the most common reason why retailers lose customers in-store. On the other hand, overstocks as well as food waste cost retailers a lot of money every day. Planning and managing of merchandise in a complex multi-channel environment overstrains human capabilities, let alone can it be handled by pen and paper or with an Excel sheet. It requires sophisticated planning tools, using advanced analytics and artificial intelligence, to optimise assortments or prices and promotions.



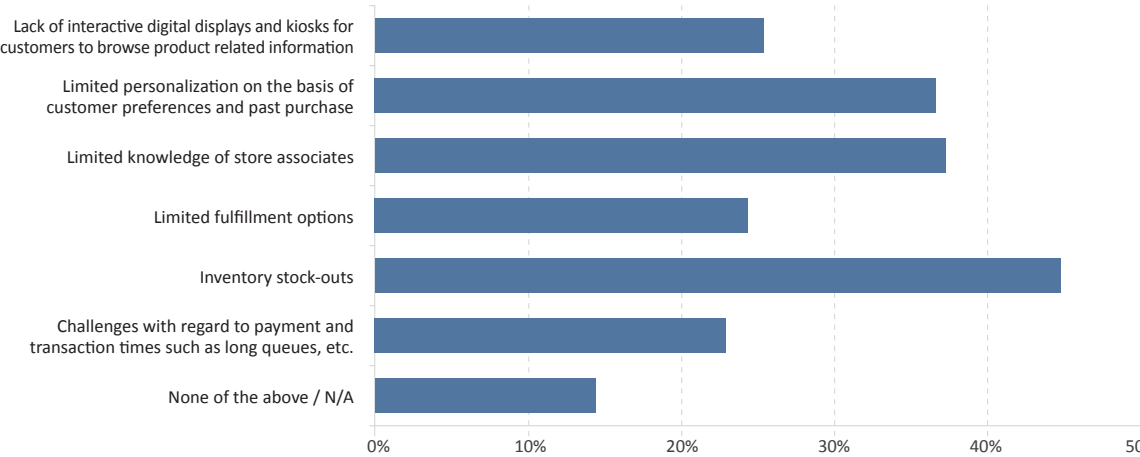
The extent to which respondents agreed or disagreed with a selection of current business challenges



Source: Planet Retail

Planning and supply chain processes have to be transformed to become increasingly automated. The challenge retailers must overcome is to implement IT solutions that are not only of value to consumers, but that also increase efficiency, productivity, and ultimately return on investment (ROI) for the retailer.

The most common reasons retail organizations lose customers in-store



Source: Planet Retail

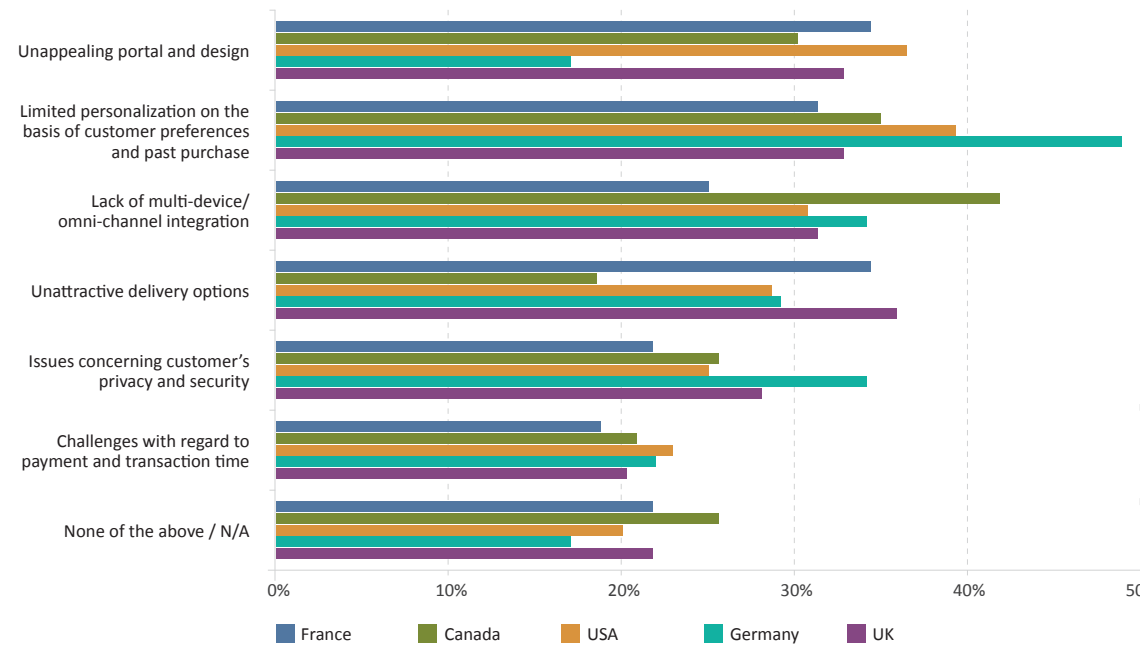
Digitising the store

Technology can also help to update stores and make sure they stay relevant in the digital age. This is why Planet Retail predicts that deployment of in-store mobile systems will soar. Retailers understand this technology area has proven extremely efficient in making store employees more productive and successful at enhancing customer service to maximise sales, particularly during high value, consultative-intensive sales, involving electrical goods or home furnishings, for example.

Mobile store assistants as well as so-called endless aisles, interactive screens that expand the range virtually, enable in-store ordering. A variety of self-service solutions are increasingly deployed to reduce waiting times and increase customer satisfaction.

It is also vital that retailers embrace digital-equipped shoppers and ensure they connect with them via their mobiles. They need to provide reliable and secure Wi-Fi connections as well as accompany the customer journey digitally, deploying mobile coupons or enabling a mobile checkout.

The three most common reasons retail organizations lose customers online



Source: Planet Retail

Operators are spoilt for choice with a plethora of in-store technologies that promise to enhance the shopping experience and boost efficiency. However, not all of them will gain the expected results under every circumstance. Return on investments will strongly differ according to geographies, demographics or category. At any rate, the pace of innovation ranks high on the list of digitally-led challenges that retailers face. Disruptive technologies, such as the use of wearables for customer identification or the adoption of Internet of Things technologies in stores arise in an ascending frequency. For every retailer technology integration is of strategic significance to facilitate the blending of digital and physical experiences.

Gaining physical proximity online

While bricks and mortar outlets are in need of becoming more digital, the challenge for pure-players and marketplaces is to gain physical proximity. They must help shoppers navigate nearly infinite assortments easily and provide fitting recommendations according to their preferences.

Online storefronts have to make up for the lack of sensual experience and find ways to present products attractively via comprehensive descriptions, images, videos or other multi-media content, increasingly utilising virtual reality. This amounts to massive sets of mainly unstructured data which have to be managed and constantly updated.

Consumers demand flexible fulfilment options and excellence in logistics is the most important differentiator for online retailers. And the bar is being raised constantly, from shipment within a couple of days to same-day delivery to fulfilment within a couple of hours. To cope with the challenges, operations have to invest in sophisticated technologies, such as software for transformation management, warehouse automation, locker systems or even robots and drones.

Exceeding shopper’s expectations

Independent of operational models, it has become increasingly hard for retailers to exceed shopper’s expectations. This calls for nothing less than a complete re-imagining of the customer experience. Businesses whose operating models and management capabilities are no longer able to stay in sync with the changing retail environment are in danger of becoming extinct.

Those retailers who want to stay ahead have to constantly reinvent themselves. This requires the iterative remodelling of their organisations and supporting processes managed by systems that can secure retailers’ investments and allow them to grow.

Supported by the right technology choices that do not lock them in but give them flexibility, retailers can become agile organisations, capable of transforming operations in every possible way to better connect with their customer and exceed their expectations, regardless of the model or channels in which they might operate.

Credibility and trust

Retail operations have to measure success according to how they deliver on promise. By constantly exceeding consumer expectations they will build up trust and confidence. This will only be possible by fully understanding the customer as an individual and engaging with them in a tailored and personalised way.

Capturing data and making sense of it is key to success in this respect. Only with support from advanced analytics and Artificial Intelligence it will be possible to derive the right decisions from ever-increasing data streams of information, both from retailers’ own systems and external sources such as social media.

Soaring dependency on data and technology requires responsibility. Retailers must act transparently towards customers how they treat their data. Moreover, they have to make sure that sufficient security measures, such as identify and threat management, are in place to prevent attacks on data, enable disaster recovery and ensure business continuity.



# 4. The 3R Framework - A 21st Century Roadmap for Retailers

To help retailers navigate the partly unknown and, as yet, undiscovered retail landscape as shaped by digital transformation, Planet Retail in conjunction with Happiest Minds Technologies has developed the 3R Framework that maps out technology roadmaps for each of three basic operating models:

- 1. Bricks & clicks retailers operating - or aiming to operate - in both physical and virtual channels;
- 2. Marketplaces, offering both retail brands and merchants a platform through which to sell their products, while providing them with operational as well as analytical and marketing services; and,
- 3. Pure-play online businesses, currently selling via virtual channels only.

Each of the model is set to:

- **Re-imagine** customer experience, knowledge-based, using sophisticated analytics and Artificial Intelligence;
- **Re-engineer** key operational retail processes to gain business efficiency, such as planning, merchandise and supply chain management as well as channel operations;
- **Reduce** risks through advanced security as well as disaster recovery solutions.

The transition process travels through three distinct stages of maturity:

**Stage 1** - the situation most retailing organisations – regardless of business model – are locked in, which can be described as ‘hampered by legacy’. It means, operations are mostly working in silos, business processes are supported by IT solutions. But some of these solutions no longer enable change and growth in an efficient, digitally-capable way.

**Stage 2** - defines a transitional phase, where solutions have been implemented to provide transparency between channels as well as to enable more sophisticated planning, supply chain management as well as modern marketing and customer engagement tools. This is where some of the leading retail operations currently position themselves.

**Stage 3** – at this stage of maturity, dubbed ‘fully connected retailing’, operations are well prepared to succeed in a fast evolving retail environment propelled by digital change. Both planning and customer engagement processes are largely data-driven, using advanced self-learning and predictive analytics. Many of the core processes have been completed automated and are informed by a real-time single view of sales and orders, inventory and customers.

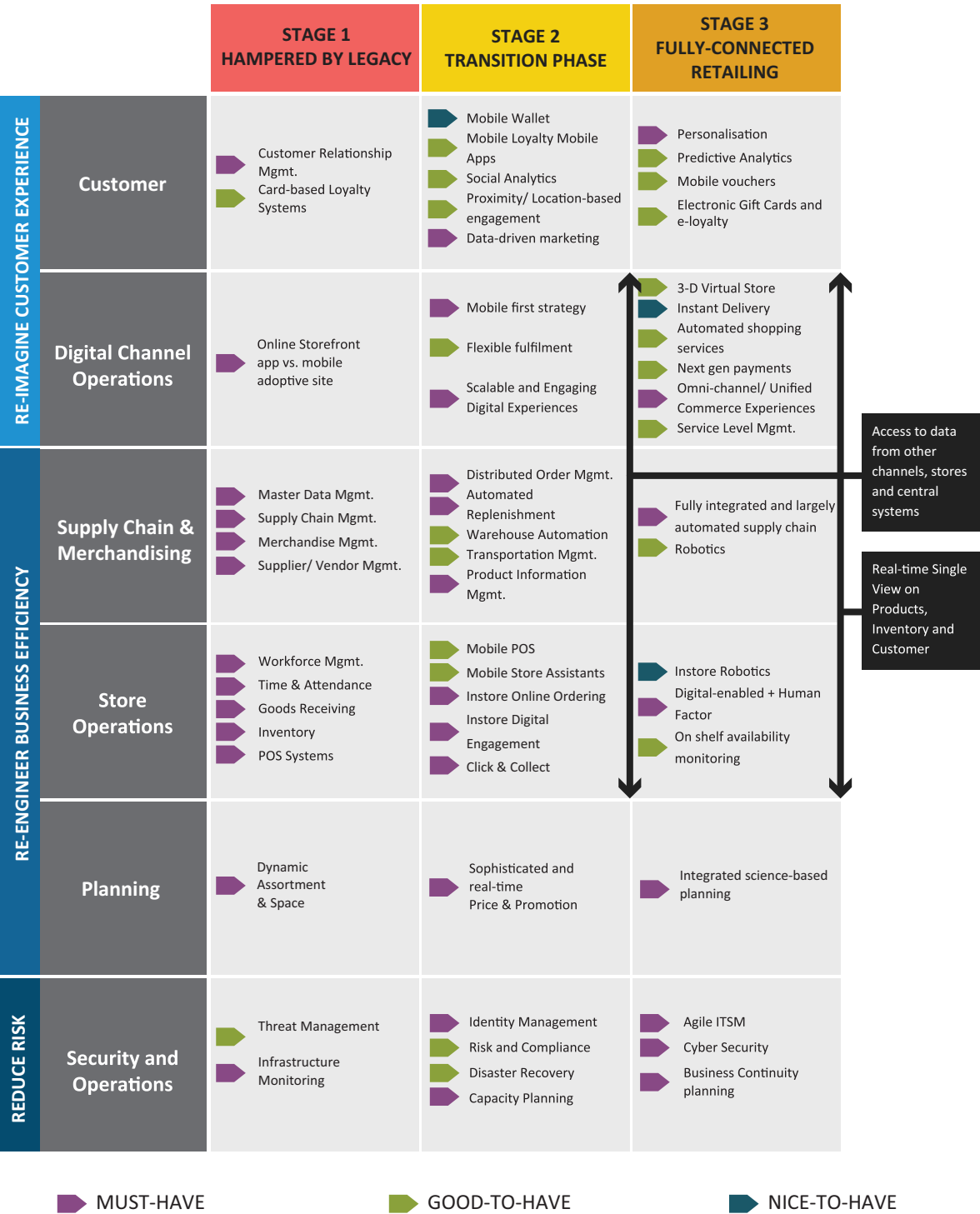
For all of these stages, capabilities have been rated according to priorities, from imperative (the must-haves) to key differentiators (the good to have) to innovation driven or the nice-to-haves.

It has to be considered that priorities may vary in different markets and retail sectors according to geographical and demographic specifics. It would exceed the scope of this paper to go into such detail but those should be reflected in marketers’ strategic decisions.



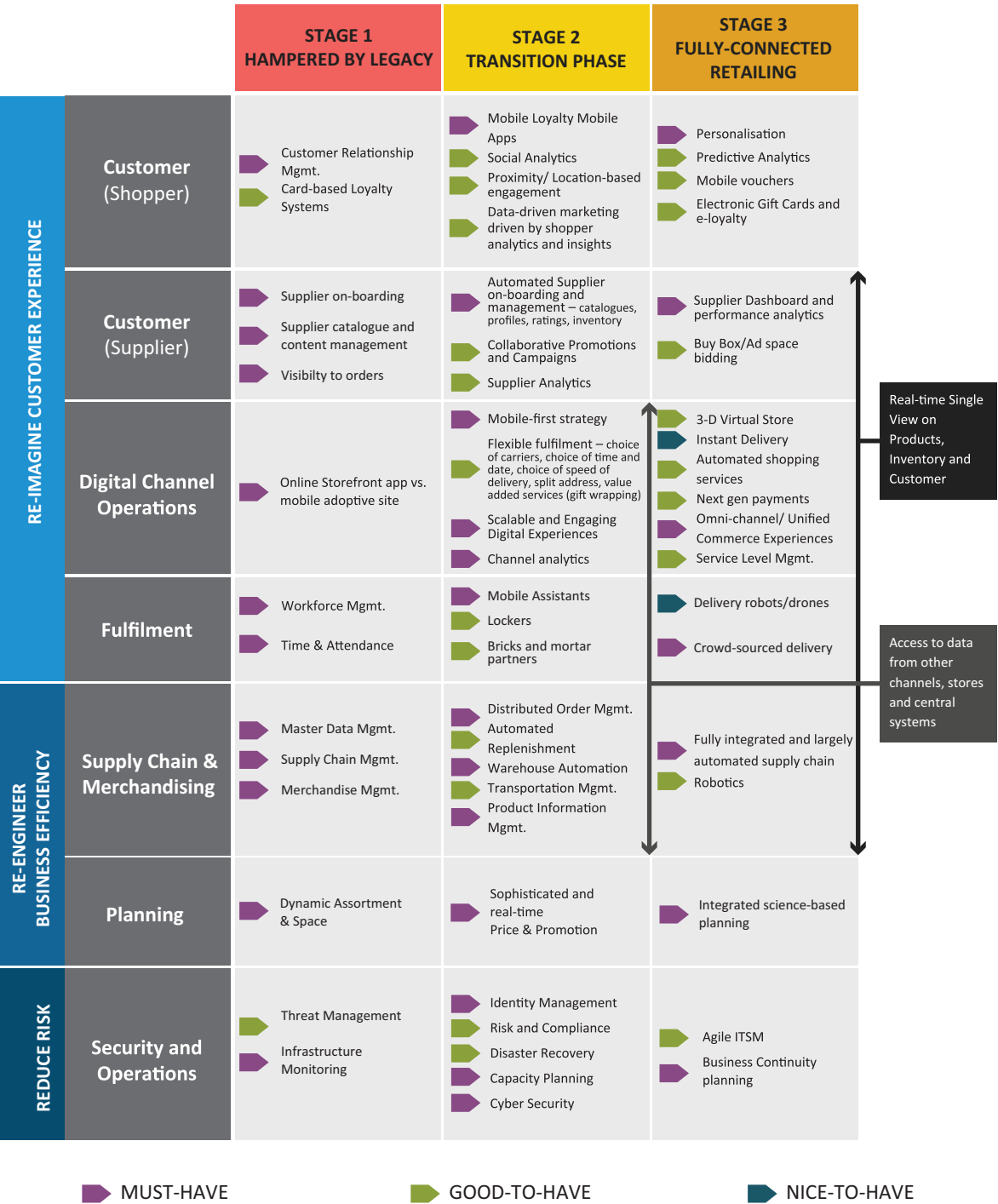
## Bricks & Clicks

- Stores will remain at the heart of bricks & clicks operations, accounting for more than 80% of retail revenues. It is therefore imperative to differentiate through in-store customer experiences.
- Services such as mobile PoS, click & collect or in-store online ordering are increasingly required to stay relevant. To truly differentiate, retailers need to gain insights on customer behaviour in stores, similar to online clickstream analytics.
- For bricks and mortar retailers also operating an online channel it is essential to achieve a 360-degree view on customer, product and inventory. Often hampered by legacy systems, they need to remodel core retail processes, such as assortment, pricing or promotions, applying science-based tools and big data technologies.



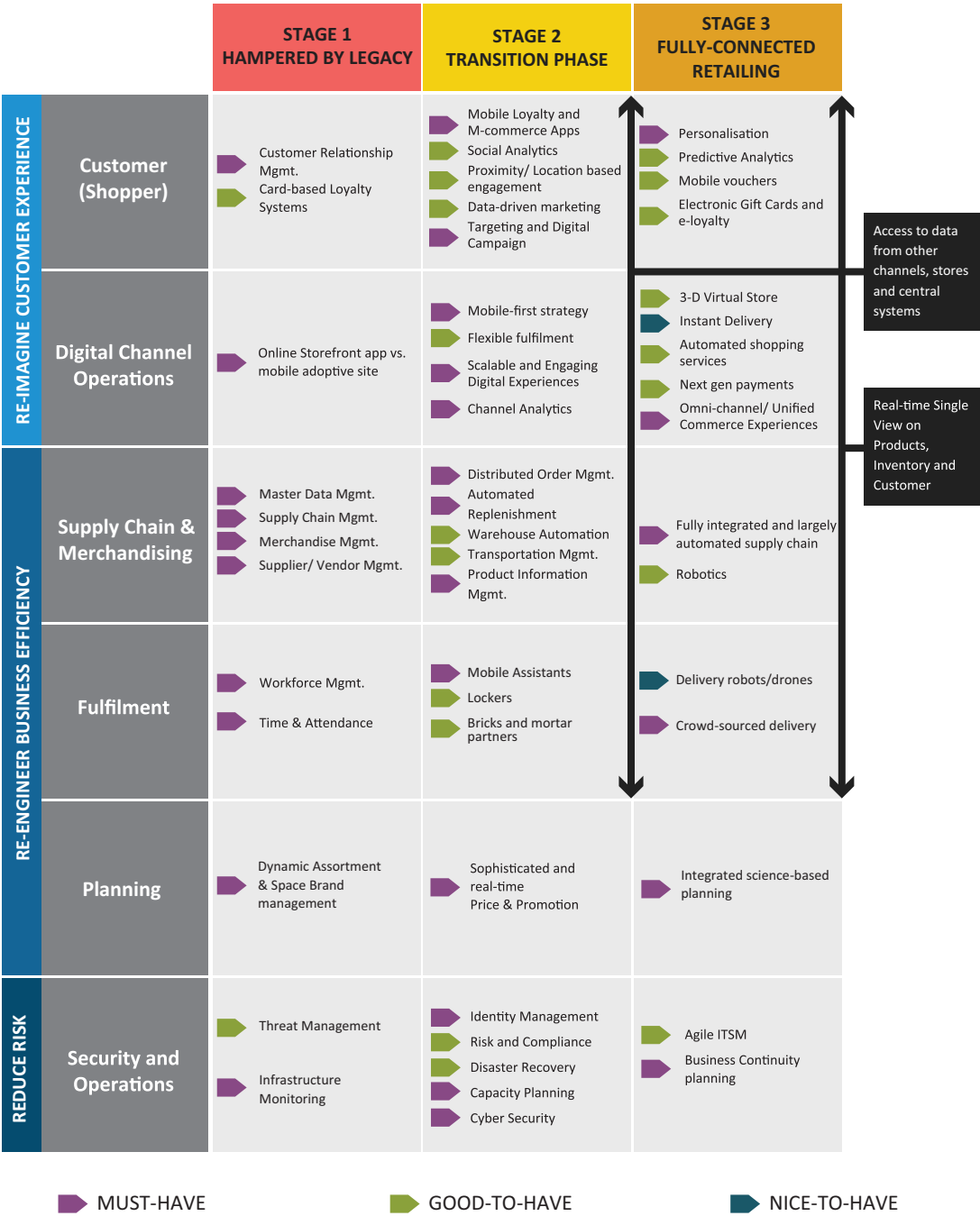
# Marketplaces

- For marketplaces, suppliers are no less critical stakeholders than consumers. Strong tools and processes that enable seamless on-boarding and management of suppliers are required to maintain a functioning supplier ecosystem. In a similar way, operators have to provide small businesses with tools for order management, invoicing, fulfilment and accounting to help them successfully trade on the platform.
- To gain transparency on customer data and customer behaviour online, marketplaces need to invest in advanced analytics that enable data driven engagement and personalised recommendations as well as science-based planning and help monetizing the insights through APIs and micro-services.
- With multiple stakeholders having access to core-systems, risk management and disaster recovery are mandatory capabilities from which marketplaces cannot shy away. Core capabilities around supply chain automation and flexible fulfilment options, such as ship to collection centres, value-added services like engraving or gift-wrapping as well as split deliveries are being demanded by customers.



# Online Pure-Players

- Similar to bricks and mortar operations, pure-play retailers have to make sure that core processes are being supported by their systems, deploying order management, supply chain and warehouse management as well as merchandising tools. Disaster Recovery and Business Continuity planning are also crucial for online only retailers.
- The customer store front is crucial for online players to scale their businesses. The commerce platform will be the differentiator and operators have to choose between a customised approach and a packaged solution, with pros and cons for both strategies. In the long run, only uncompromised customer experience and service will ensure loyalty.
- A transparent view on customer data, profiling with cognitive analytics, chat bots and social insights for contextual discussions with customers are all essential to the success of online businesses. Effective digital marketing and campaign management tools able to target customers across multiple digital touch-points, such as social networks, content sites or search engines are mandatory to provide a contextual customer experience and motivate them to revisit the site.



## 5. What Are Leading Retailers Doing?

With digital disruption facilitating ever higher customer expectations and competitive pressures, retailers are struggling to keep pace with the speed of change and levels of operational efficiency needed to thrive in today's world. Retailers must develop strategies to cope with the changes that digital transformation compels.

Having seen the 3R framework that lays down guiding principles and capabilities, this chapter highlights real-life use cases from international retailers who have already imbibed core capabilities essential to success. The use cases are validated by Planet Retail.

### Warehouse Innovation

#### From warehouse management to customer touchpoints

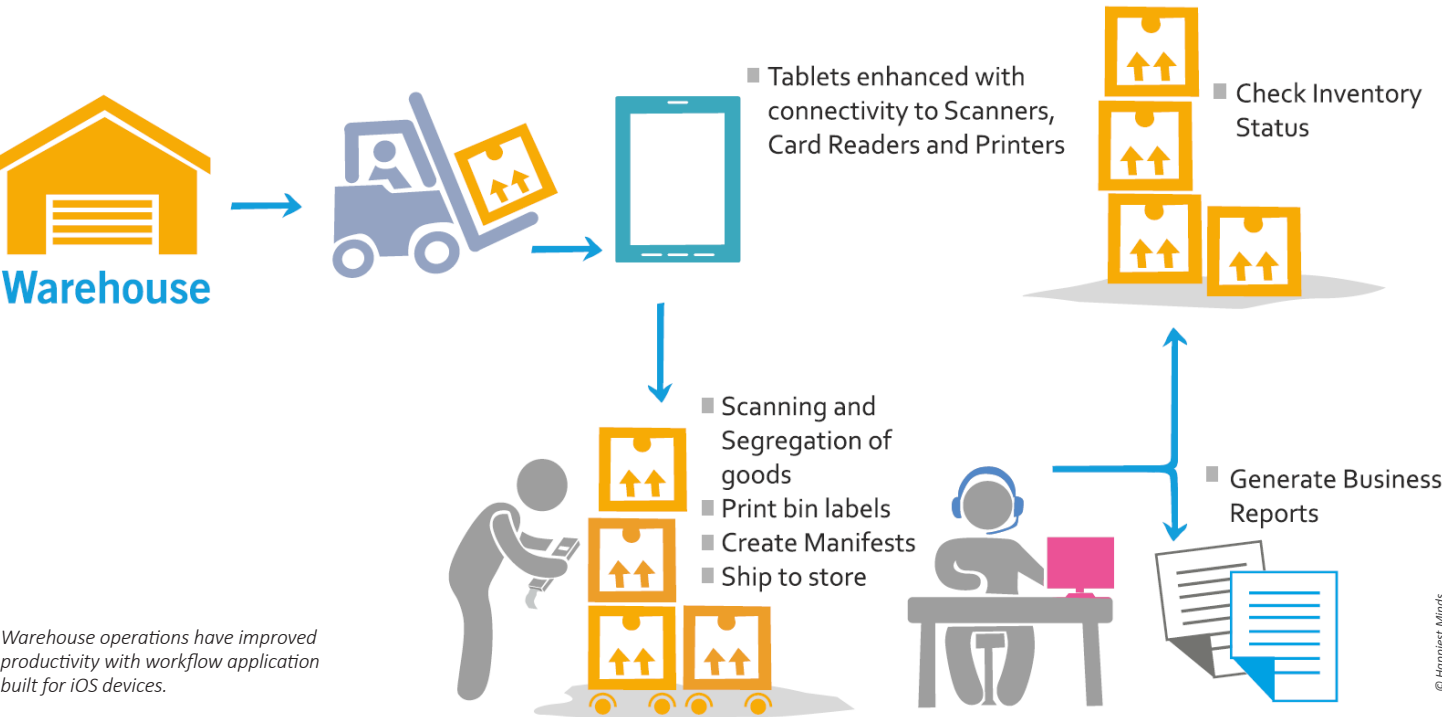
In a move to adapt its processes to the demands of the modern connected consumer, a leading retailer with more than 2,600 stores across the US and Canada, catering to home appliances, consumer electronics, hardware and apparel, implemented a bouquet of transformational solutions, ranging from warehouse management to customer touch points.

With an integrated, mobile-enabled platform at its core, the solution provides workflow automation for the retailer's warehouse and store operations. Using interactive tablets as kiosks and iPods as communication devices, both employees and customers benefit from near real-time information. The system also feeds digital displays and self-service kiosks as well as sophisticated analytics and reporting tools with consistent data.

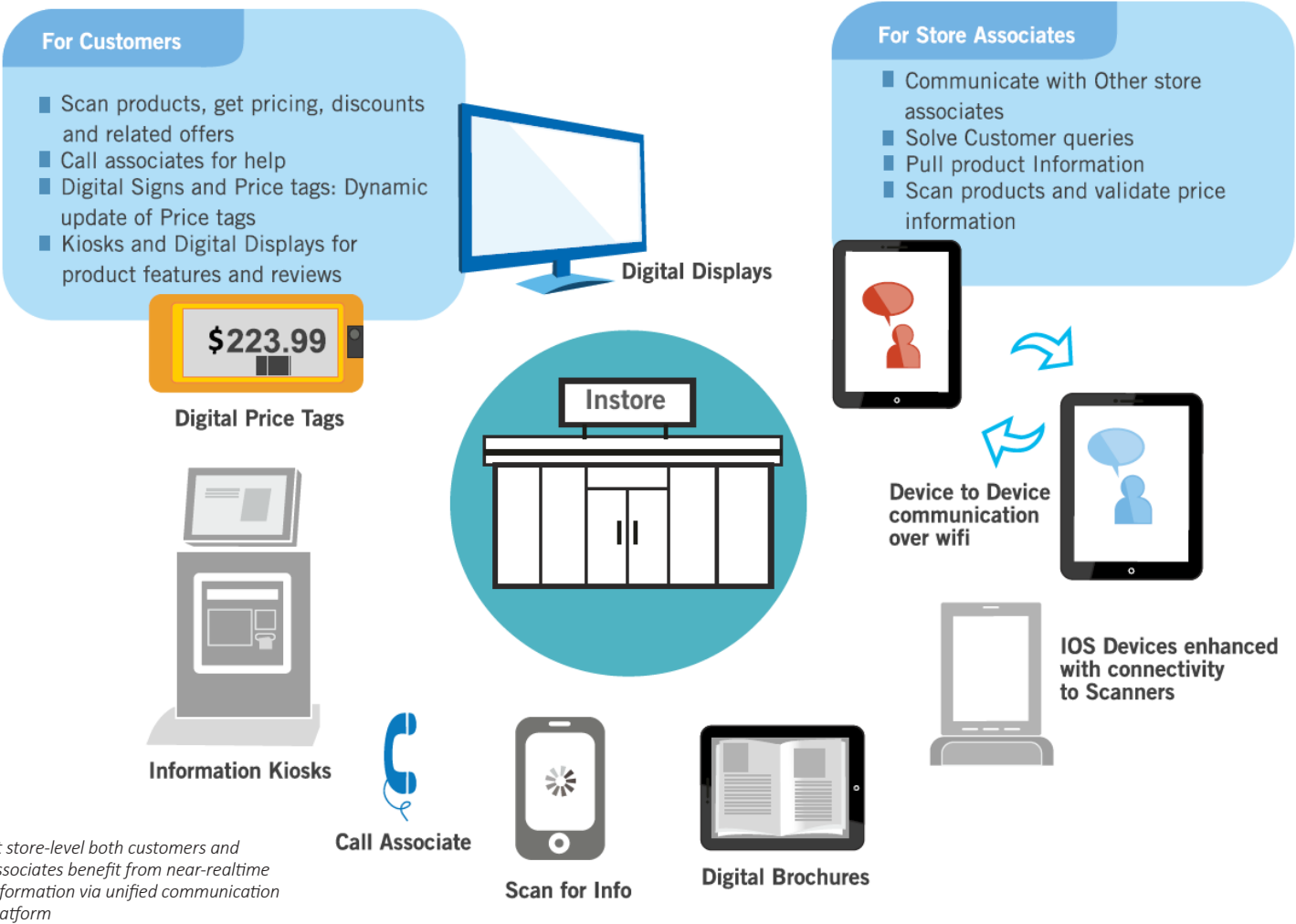


The kiosk application improves merchandise pick up and return of online orders at the store.

Implementation of the solution by Happiest Minds resulted in optimised workflow processes, supports faster price updates and enables reconciliation of products in near real-time as well as monitoring KPIs of applications and products. While customer experience has been enhanced, operations can benefit from increased business efficiency and agility.



Warehouse operations have improved productivity with workflow application built for iOS devices.



### In-store Innovation

#### Carrefour tracks shoppers via in-store lighting

To better engage with shoppers and gain insights on their behaviour, Carrefour is trialling innovative technology from Philips in its hypermarket in the city of Lille in northern France. The system enables a more precise navigation using a LED lighting system to send codes via light waves to customers using the Carrefour C-òu app. These can be detected by a smartphone's camera to highlight offers and rewards to shoppers based on their location in-store.

The technology can track shoppers as they move through the store, beaming pop-up coupons to their smartphones. As part of an initial test, Carrefour has also attached tablet devices to 30 of its shopping carts that connect to the lighting-based Bluetooth technology. The tablet-fitted carts have the dedicated 'C-Promo' app pre-installed. This allows shoppers to use geo-location to find products, benefit from location-tailored promotions, browse online catalogues and digitise their shopping lists.



Instead of beacons, Carrefour is using LED lighting to connect with customers

In New York City, Walgreens' banner, Duane Reade, integrated Apple's iBeacons with its mobile app. The retailer sought to enhance loyalty by leveraging app and location data to push recommendations corresponding to each shopper's purchase history and location in-store.

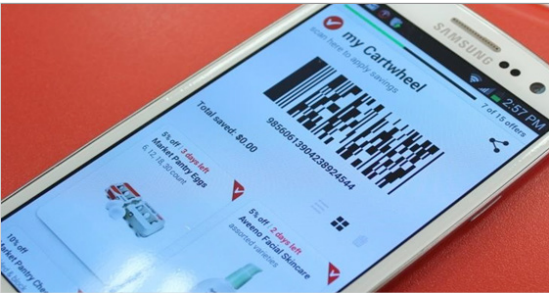


Product Recommendation

A leading US retail chain improved its product recommendation system for more than 25,000 products across all of its retail outlets and online stores. The solution, implemented by Happiest Minds, replaced a legacy system which could not recommend products for new items or categories and did not take contextual information into account. Using a Big Data platform, the solution creates store clusters based on demographic, weather and location data and generates cross-sell or up-sell recommendations according to each store cluster. The recommendations are based on machine learning algorithms, which are applicable for web, mobile and kiosk systems in stores. The new system improved cross sales from 10% to 12%.

Personalised recommendations at Target

Target included personalised recommendations in the ‘For You’ section of its popular Cartwheel app and quickly saw an increase of over 10% in the number of offers downloaded per user.



Target’s mobile savings app Cartwheel has been downloaded more than 18 million times since its launch in 2013.

E-commerce Innovation

E-commerce Implementation for cash & carry wholesale pioneer

To satisfy the increasing consumer requirements online for a renowned cash & carry wholesale operation, Happiest Minds created an e-commerce portal based on an Oracle database and Magento’s commerce platform. The system is hosted using the Azure cloud solution from Microsoft and specific testing tools from Jmeter are being applied.

The solution provides login and purchase options for commercial customers as well as employees and supports the upstream processes with suppliers. The system also gives category managers, finance managers as well as store employees access to data and management functions. Both access to the fulfilment partner and a payment gateway have been integrated.

The additional sales channel resulted in additional sales as well as increased brand value and awareness.

Intelligent Site Search

Aiming to increase the conversion rate of its site and improve the user experience, a leading US fashion retailer commissioned Happiest Minds to implement a site search solution that utilises real-time product data in any format via feed or platform plugins. Based on inventory, client input and analytics, the system provides predictive text and visual suggestions and allows interactive, dynamic filtering options to improve user engagement.

Online Marketing Analytics

To enable targeted campaigns and identify cross-sell and up-sell opportunities, Happiest Minds implemented an open source big data solution to process massive amounts of structured and unstructured data in real-time. The tool resulted in 20% better targeting of campaigns, 5% more up-sell or cross-sell opportunities and sales increase of 4%.

Amazon logistics strategy may be a game-changer

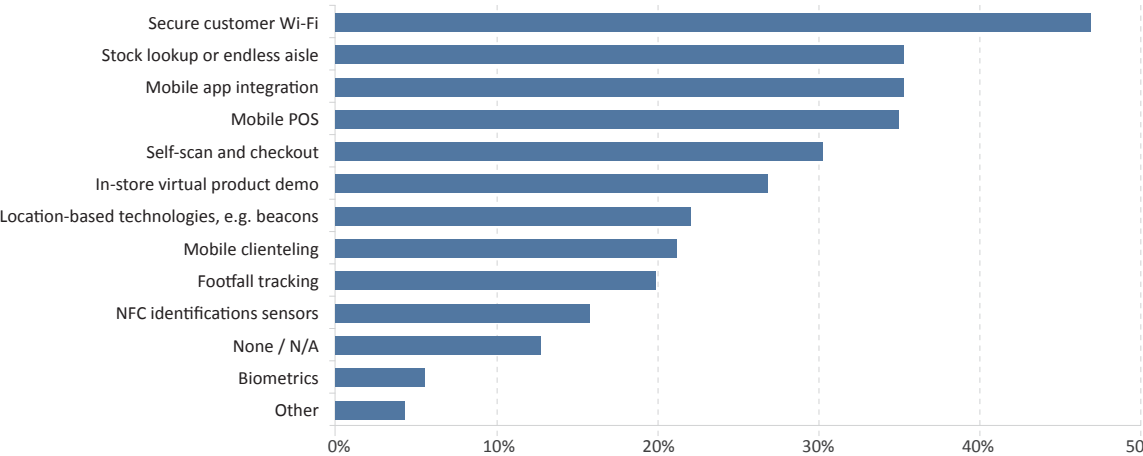
The retail rumour mill has been throwing out a fresh batch of speculation surrounding Amazon. The e-commerce titan is believed to be crafting its own global logistics business which, should it come to pass, would create a complete global logistics provider. Akin to efforts made with its Amazon Web Services (AWS), it would round out the B2B element of the business and see Amazon disrupt yet another crucial aspect of retailing, which encompasses that all-important last mile.

The move entails rapid growth of the Fulfilment by Amazon service, which enables independent merchants to have inventory stored, packed and shipped through the Amazon as a 3P logistics services provider. This, coupled with the rumoured launch of a new Global Supply Chain by Amazon operation, would offer not only transport and shipping, but also handle all the onerous paperwork necessary for cross-border trade.



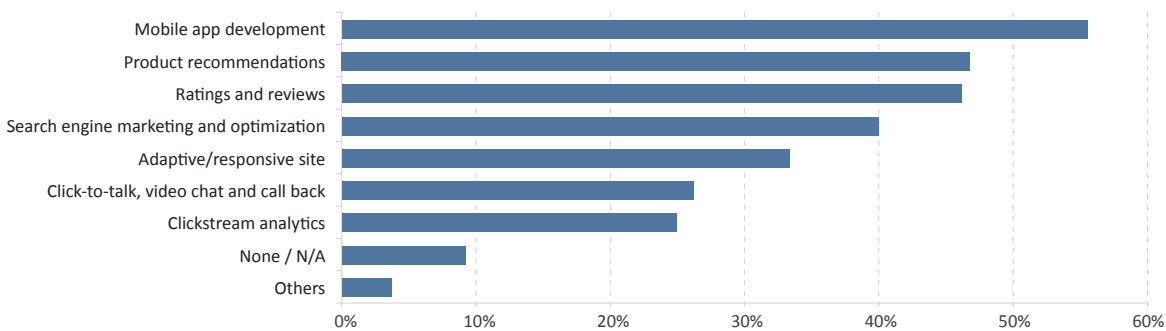
Amazon’s fulfilment network is growing at a phenomenal rate worldwide.

Which technologies retailers currently use or plan to use in the next year to drive in-store insights and engagement



Source: Planet Retail

Which technologies retailers currently use or plan to use in the next year to drive your online insights and engagement



Source: Planet Retail

## Marketplaces Innovation

### Walmart kickstarts digital ambitions with Jet.com

Walmart acquired third party (3P) marketplace operator Jet.com for USD3 billion to gain ground against Amazon and reignite its own under-developed digital ambitions. Jet.com launched in July 2015, but it has already attracted around 2,400 sellers with 12 million products. Sales exceeded USD1 billion a year after launch, although it has bigger ambitions to secure USD20 billion in annual revenue by 2020.

This newly acquired online impetus has become increasingly crucial for Walmart. Walmart’s e-commerce growth has slowed to disappointing single-digit levels in recent quarters, despite a slew of investment and new initiatives.

Another key part of the acquisition is the opportunity to utilise and hone Jet.com sophisticated and proprietary technology. This includes Jet.com’s Smart Cart dynamic pricing system, which allows shoppers to save money throughout the shopping process by taking certain actions, such as adding items to their shopping cart, selecting certain payment methods, speed of delivery and even forgoing the option to return an item.

Walmart is paying a premium to get its hands on Jet.com’s technologies and expertise. Walmart had been expanding its own 3P offer previously, but it is clear that Jet.com can accelerate its standing in this area, as well as provide opportunities for future synergies.

### Marketplaces – entry strategy into new markets

Marketplaces can help retailers and brands to break into new markets. In particular, Chinese consumers want Western brands and they want them now. As the country’s online marketplaces like Alibaba and JD.com maintain unprecedented levels of growth, FMCG retailers and manufacturers need to get serious about the opportunities afforded by consumer desire for Western products. Metro Group is already offering its own-brand products directly to vast swathes of Chinese consumers on Alibaba’s Tmall marketplace platform. So do global FMCG suppliers Mars and Nestlé. Other retailers and brands are eager to follow.

### Marketplace and vendor management

In order to keep competitive advantage, a marketplace requires the capability to build in new features quickly into its platform to enable vendors. Happiest Minds worked with the business team of a leading marketplace operator to develop innovative user stories and deployed those in agile mode for fast implantations. In a similar vein, the service company enabled bulk commission upload for vendors, flexible shipment options and developed KPIs and dashboard solutions.

### Disaster Recovery and Capacity Planning

In order to cope with its growth, a marketplace business required rapid development of multiple applications. It also lacked visibility of its capacity planning for future evolution. This resulted in several unplanned cases of unavailability of the platform or its modules.

The Happiest Minds team elaborated a detailed study of the as-is environment and assessed business transactions of the operation. Understanding the business continuation plans of the organization, the technology company built the different models for disaster recovery, such as active-passive, active-active and data recovery in the cloud.

## Big Data Innovation

### Lidl invests heavily in Big Data

Lidl is upgrading its IT systems to create a fully integrated Business Intelligence (BI) environment, based on an expanded data warehouse architecture from Teradata in combination with SAP Retail and its Business Warehouse (BW) module. By migrating to SAP’s HANA platform and using in-memory technology, the discounter will be able to evaluate merchandising data in real-time. The system is being completed with tools from business intelligence specialists Microstrategy, SAS and Ab Initio. Allegedly, Hadoop, an open-source software framework for distributed storage and processing of large data sets, will also be implemented. This move will allow the retailer to access the huge amounts of unstructured data about its offer and customer sentiment that can be sourced from social networks.

The initial goal is to improve the speed and depth of data analysis. Basket analysis of transactional data complemented with external information, such as weather records, will help the discounter to optimise assortments, prices and promotions as well as marketing campaigns. The new IT environment will enable the retailer to carry out predictive analytics and business simulations, using data from its web store, mobile apps and social networks to inform management decisions in real time.

### Recommendation Engine Development for large home improvement and appliance store

To enable product to product and customer to product recommendations, Happiest Minds developed a platform to aggregate and analyse data from multiple channels for a large home improvement and appliance store. The system processes structured and unstructured files in multiple formats using a Hadoop cluster and created multimillion savings as well as increased revenues.

### Data analysis on a budget

To overcome hardware and licence capacity limitations, a Hadoop environment was also implemented for an online marketplace operation in order to reduce the cost of data analysis. The low-cost but scalable environment in combination with selected BI tools ensure fast processing without stressing the budget.

### Associate empowerment must not be neglected

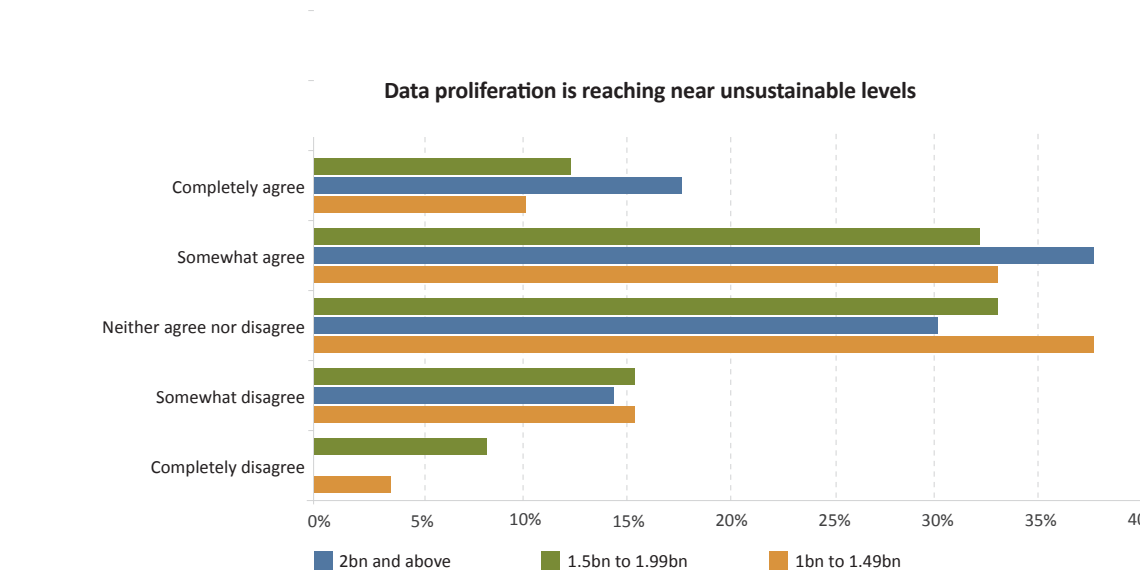
Stores are increasingly using technologies that either equate to or surpass the advantages of online, such as endless aisles, beacons and virtual mirrors. The idea exchange goes both ways, however, with stores borrowing from online and retailers taking the most efficient parts of their stores into e-commerce.

Luxury retailer Saks Fifth Avenue, for example, is leveraging a solution that allows local sales associates to create curated versions of the retailer’s web store, personally selecting the merchandise and assisting shoppers throughout their buying journeys.

Innovations like these serve to highlight the importance of knowledgeable employees in elevating the customer experience - even online, where click to talk services can provide similar benefits. Though many technologies are well capable of replacing store staff altogether, human skills used for assisted selling still carry a distinct and very effective appeal where consumers still value the ability to incorporate first-hand, expert advice or opinions into their buying decisions.

US apparel retailer True Religion recently developed a real-time Apple Watch inventory app for store associates, enabling them to view, filter and quickly locate any size, style or colour they think the customer may like. Once the associate locates the items using a large in-store monitor, the product can be displayed to the shopper.

Not only does this ease inventory space constraints for retailers, but store associates are better armed to serve and advise shoppers. The concept also has the added appeal of being low-profile. While in the past many other retailers have used tablets to improve the shopping process and serve customers, the concept of wearable tech facilitating assistance for shoppers dissatisfied with the in-store inventory, seems far more sophisticated and unobtrusive than the interface of a screen between the customer and associate.



Source: Planet Retail



# A 90-day **Action Plan**



## About Happiest Minds Technologies

Happiest Minds, the Mindful IT Company, applies agile methodologies to enable **digital transformation** for enterprises and technology providers by delivering seamless customer experience, business efficiency and actionable insights. We leverage a spectrum of disruptive technologies such as: Big Data Analytics, AI & Cognitive Computing, **Internet of Things**, Cloud, Security, SDN-NFV, RPA, Blockchain, etc. Positioned as “Born Digital . Born Agile”, our capabilities spans across product engineering, digital business solutions, infrastructure management and security services. We deliver these services across industry sectors such as **retail**, consumer packaged goods, edutech, e-commerce, banking, insurance, hi-tech, engineering R&D, manufacturing, automotive and travel/transportation/hospitality.

Headquartered in Bangalore, India; Happiest Minds has operations in USA, UK, The Netherlands, Australia and Middle East.

**Re-define**  
model/strategy

**Re-view**  
current state  
of maturity  
prioritize  
transformational  
initiatives

**Re-think** silos,  
organization  
structure, partner  
ecosystem

**Re-establish**  
Security and  
Infrastructure  
needs

**Re-imagine**  
processes and  
experiences

**Re-design**  
around and  
beyond existing  
constraints

**Re-inforce**  
the outcomes

**Rollout!**  
What are you waiting for?  
Execute, Measure, Improve  
and Roll-out!

**Contact us** to perform a detailed assessment and help define a transformational yet practical roadmap or to implement any of your transformational digital initiatives



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