Università degli Studi di Padova

Department of Economics and Management

Master Program in Business Administration

HYBRID JOBS IN THE RETAIL INDUSTRY

REDESIGNING ORGANIZATIONS, PROCESSES AND WORK

Supervisor   prof. Paolo Gubitta

Candidate   Sara Comunian
ID Number   1155339

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INTRODUCTION & SUMMARY

THE PURPOSE OF MY DISSERTATION. The purpose of this work is to analyse retail jobs to find out how they are changing as a consequence of retail transformation. Indeed, retailers need to adapt to the changes going on: increasing online competition, changing customers' purchasing habits and technological advancements. In particular, shoppers research and buy products online and often use traditional brick-and-mortar stores only as showrooms, and then close the purchase online, on the most convenient website. Moreover, their needs have changed and now they ask for the same personalized experience, whether they are in front of their computers or inside a shop. So, retailers' job becomes more challenging and complex and to tackle these new trends, they are integrating the digital world into the stores to create a better and more tailored shopping experience, which corresponds to customers' desires. In this way, traditional stores can unify the advantages of online (wide variety, product information and customer reviews) with the advantages of offline (possibility to examine the product before buying it, personal service and instant ownership) to create an enhanced shopping experience. Thanks to technologies, retailers are able to target consumers more effectively, but technologies (in particular Internet of Things, autonomous vehicles/drones, artificial intelligence and robotics) will also have a huge impact on labour. Therefore, not only shoppers' behaviours are changing, but also retailers' ones. Traditional stores will focus on customer service, to defend themselves against online retailers, and in-store employees' skills set will change. Nowadays, retail jobs are considered low skilled ones, but in the future, they will become high-skilled, tech savvy and great product experts, who can leverage technologies to provide an engaging and more personalized customer experience.

CHAPTER 1. Retail is changing fast, so fast that we will see more disruption in the next ten years than in the previous one thousand. However, despite changing customers' needs, the emergence of smart technologies, and increasing e-commerce purchases, the physical stores will not disappear. Although, traditional stores will become different from the ones of today, with smaller spaces, and an increase in the temporary store and experiential showroom formats. Indeed, people just do not buy products because they need them, but because they look for experiences, moments of socialization, and the immediate gratification of instant ownership, and only brick-and-mortar stores can provide these features. At this purpose, people will enter stores mainly to get inspired, see and test items, experiment and co-create. Moreover, retailers are already introducing omnichannel strategies and are digitizing processes to provide a better service to their customers. In fact, an increasing number of shoppers around the world are now using the Internet to research products and compare prices. However, they engage in this behaviour not only when they decide to purchase items online, but also when they then complete their purchases in store, or even when they are within the store and use their mobiles to check and compare prices. Moreover, often happens that people browse products in store, and then complete their purchase on the cheaper medium, that often is the online one. So, to answer to these changes, retailers are increasing the services offered to their customers, introducing e-commerce platforms, and click and collect, return to store or home delivery options. Moreover, traditional brick-and-mortar stores are introducing smart technologies that unify the advantages of the online and of the offline and that amuse and delight customers, enhancing their shopping experience.

CHAPTER 2. The second chapter focus on the retail revolution from the point of view of small shops, belonging to the proximity retailing category. Small retailers are more reluctant to innovate and introduce new smart technologies within their stores, given the difficulty to afford the technologies costs and the high risk that these investments represent for small retailers. Where these innovations exist, they focus on supply chain improvements but rarely on in-store developments, aiming at improving customers' experience. However, there are examples of innovative small retailers and the chapter focus on them. The paragraphs are divided taking into account the retail subsector described: pharmacies, luxury, flower shops, food, sporting goods store and optician shop; and for each section at least one example is provided.

CHAPTER 3. This chapter deals with the likely effects of the introduction of technologies on retail employment, with consequences in terms of new skills needed for current jobs, treat of automation for more repetitive ones and emergence of new titles. Therefore, new technologies do not eliminate the need for human labor but are going to change the nature of work. Workers with special skills or the right education will benefit from technologies, given their potential to augment workers' capabilities, while workers with only 'ordinary' skills and abilities are on a weak position because computers, robots, and other digital technologies are acquiring these skills and abilities at an extraordinary rate. So, these latter are more at risk of substitution. Tasks like stocking shelves and checking out will be automated but this does not mean that a large part of employees will be fired; their role will shift towards a more advisory role, which focus on customer service in order to provide a personalized shopping experience. Moreover, there is the emergence of new titles, like Chief Digital Officer, Chief Customer Officer, Digital Marketers and many others, that are the result of companies rethinking their internal processes. These professionals are IT experts that leverage digital tools to improve the customer's in-store experience, get significant insights from customers, manage data in order to create business value and set the technology strategy.

CHAPTER 4. Retail jobs are generally perceived low skilled ones, with low status, low pay and limited career opportunities; however, products sold, and the type of work can vary widely within the industry and so do the skills required. For example, in food retailing sales assistants have little product knowledge, little autonomy and interact with customers only to answer their queries, while in high-end fashion retail or electrical retailing employees have in depth product knowledge and are skilled. But have salespersons jobs been subjected to a deskilling or upskilling process? According to Ikeler sales job have been subjected to a deskilling process and today salespersons' tasks decreased in complexity and autonomy respect to Mid20th-century. However, according to National Retail Federation today salespeople need to be versed in the art of selling, experts in customer service and with a deep product knowledge. Moreover, people with an education background, communication and teamwork skills, and additional competences in organization, mathematics and multitasking are more likely to be hired. So, the tendency is to hire people that do not have only hard, technical skills but also soft skills. Jobs are increasingly becoming hybrid jobs, that require skills that were not traditionally associated with that

role. So, sales assistants will be high-skilled product experts, good in leveraging technologies to provide an engaging and more personalized customer experience. Moreover, salespersons can help customers without directly meeting them, but answer their queries throw the use of technology. In this case shoppers can use shopper assistant apps to have a personal shopper who can help them by finding the right products at the lowest possible cost, searching hundreds of online stores for the best deals and offers; he also acts as a fashion advisor, who provides personalized recommendations. Finally, cashier job, as self-checkouts free up workers from doing their traditional activities, will move towards other higher value-added activities able to influence customers satisfaction.

MANAGERIAL IMPLICATIONS. Online competition, change of customers' behavior and technological advancements are threatening retail, and retailers, even small ones, must be prepared to embrace the opportunities given by digital transformation. Indeed, retail industry is experiencing a serious crisis and brick and mortar stores must innovate to survive. However, this transformation does not only involve retail stores but also and above all retail workforce. New jobs and titles will emerge as a consequence of the increasing use of technologies, given the need of technology experts, able to lead the digital transformation and keep up with new trends but also able to leverage the potentialities of technology to draw conclusions from big data and predict consumer behaviour. Moreover, with regard to in-store workers, there is the need to reskill the present workforce. Indeed, brick-and-mortar stores are becoming more experiential and service-oriented, so frontline workers will require new skills to fit their new role. So, retailers need to enable the successful shift of the workforce and facilitate the learning by employees of new skills necessary to close the skills gap.

TECHNOLOGICAL INNOVATIONS AND CHANGES IN THE RETAIL INDUSTRY

1.1 Introduction

Summer 2015. Amazon, the famous world's largest retailer, tested successfully the first drone delivery, bringing to destination a TV streaming stick and a bag of popcorn.

However, at the moment the technology is in the early stages, drones can only fly at daylight hours and with good weather, and packages may not weight more than five pounds. But what really matters in this story, despite the current drawbacks that can be overcome, is that new technologies are reshaping our reality and one day seeing drone delivery will be perfectly normal.

Technological and digital transformations are affecting many industries and retail is not immune to it, actually it is experiencing a radical change. Not only retail delivery, but the entire business model and retail workforce will never be the same.

Indeed, brick-and-mortar stores are turning into click-and-collect locations and IoT and augmented reality advancements will be applied to stores to create a unique and ever more tailored shopping experience.

The chapter is organized as follows: the first paragraph reports the main events unfolding in retail history, mentioning also the major innovations occurred in the period. Subsequently, the second part focus on the retail as it is nowadays and on the changes that are happening with a description of the major technologies introduced. Then the paragraph continues with the advantages faced by retailers and customers, and the issues that emerge from the introduction of smart retail technologies.

1.2 From *Retail 1.0* to *Retail 4.0*

At the origin of retail there were "mom and pop" stores, small businesses, often family-owned, with no self-service, where happened that clerks took orders and found out items for customers (Krieg, 2014). However, the retail 1.0 was born in the XX century, with the rise of the modern supermarket.

More precisely, it was the 1916, and Clarence Saunders created the first modern grocery retail, in Memphis, Tennessee, that was called Piggly Wiggly.

Before that moment, costumers did not have the possibility to take the products by themselves or even to touch them, they had to ask clerks to gather the items from shelves for them.

In Piggly Wiggly, instead, things were different, and many customers liked this innovation because they did not have to wait for a clerk's help (Krieg, 2014).

Suddenly this business model spread all over the country and propagated also to other countries.

Given that costumers now were allowed to choose the preferred product, carefully assessing their alternatives, packaging and brand recognition became crucial for manufacturers, who started to invest on this front.

However, as the retail industry never stops to change, 50 years later there was a new move toward retail 2.0. Improvements in transportation infrastructures facilitated long-distance shopping trips which made possible the rise of retail concentration in urban areas, where customers could find in a single place greater variety and improved convenience (Artz and Stone, 2012), according to the idea of "everything under one roof".

Indeed, in 1962 Sam Walton opened his new store, Walmart, with the goal of providing goods at highly discounted prices; he did not spend much efforts on its aesthetical appearance because he was convinced that low prices alone would be able to bring customers to the shop, and in the following years his idea turn out to be right (Krieg, 2014).

However, Walmart was not the only discount store opening in the 1960s; the 1960s and 1970s also saw the proliferation of discount chains such as Kmart, Woolco, and Target.

The new stores became increasingly large, both in terms of the dimension of the buildings and in the range of offerings; for retailers these meant significant improvement in terms of productivity, efficiency and cost management, while for costumers signified lower prices and greater choice.

During the years many incremental innovations took place: private label products, multi-format offerings, category killers and the Supercenters.

Supercenters are "stores that combine a supermarket with a full line discount store" (Weitz and Whitfield, 2010), while a category killer is "a kind of discount specialty store that offers less variety but a wide assortment of merchandise in the category that is handled and by offering a wide assortment in a category at comparatively low prices, category specialists are able to 'kill' that specific category of merchandise for other retailers" (Sinha and Kar, 2007).

Then in 1995 *Amazon.com* Web site was created and this was the first step toward retail 3.0, defined by the rise of the e-commerce.

In the previous year, indeed, Jeff Bezos decided to build his Web-based business, before other entrepreneurs discovered the potential of the Web; he chose to sell books because they were an almost universal product, and relatively easy to acquire and deliver to costumers.

This idea turned out to be successful because, by building a bookstore on the Web he didn't have the costs of maintaining a physical store, and this would enable him to cut prices more than traditional booksellers could (Gilbert, 2013).

So, the company, born as a book seller, in few years had a significant expansion and started to retail a large variety of consumer goods and digital media, becoming the online retail giant we know today.

Figure 1   Retail History
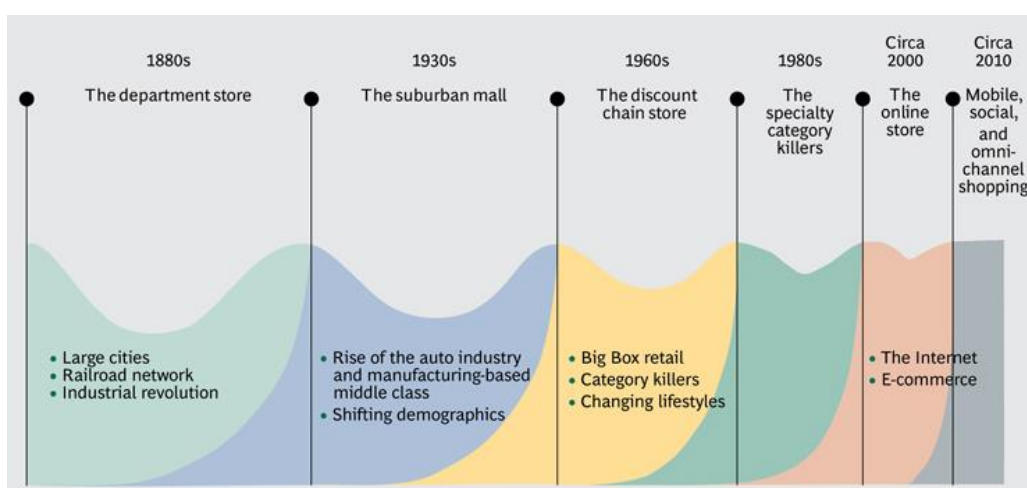
Source: BCG analysis

The emergence of the e-commerce has completely changed the way in which people shop, buy and deal with products; customers now ask for the same experience, whether they are in front of their computers or inside a shop, with dramatic consequences for stores that will become quite different from the ones we knew.

Transformations does not affect only in-store experience, but all the components that contribute to this experience, including store mix and format, people, products, infrastructure, IT, and supply chain.

1.3 Past technologies

In the past, several innovations came to surface to revolutionize the retail and many of them still exist today, even if in some cases they have been amended and perfected over time.

In this section are described the major innovations that marked a turning point in the retail history, without which the developments that followed would not have been possible.

1) Barcode Scanning

Probably this was the most important retail technology innovation in the twentieth century and it made possible much of the innovation that has followed.

Joe Woodland discovered a new way to encode information using simply lines on paper, so this resulted in the birth of the bar code, to which was granted a patent in 1952. It was first adopted in 1974 by a US supermarket and today every retailer adopts it, given that in this way the operator can save time by scanning purchased items rather than manually type price and product information. Moreover, the barcode scanning provides real-time transaction data that let retailers to identify fast-moving item as well as realise which products drive sales and enhance the ability to hold the inventory (Inman and Nikolova, 2017).

2) Kiosks

Kiosks are cabinets in which people can get information or can be used by stores to promote and sell products and services. They are generally placed in public spaces such as stores, airports, malls and hotels and they were first installed by Florshiem Shoes in 1985 but only recently this technology has been widely used; now kiosks are spread across airports, hotels, banks, grocery stores and clothing stores with the aim to distribute money, boarding passes, ticket for movies, trains and theatres (Inman and Nikolova, 2017).

3) In-store Coupon Dispensers

In 1992, a patent was given to George Kringel for a "stand-alone dispenser [..] used to dispense individual sheets, such as coupons, [..] mountable to store shelving or other point of purchase displays" (Kringel, 1992). The coupon dispenser was first introduced by Act-Media that decided to place it next to the product for which the coupon was offered. However, today the process of distributing coupons is quite different and its primary aim is to strengthen customer loyalty by offering its frequent shoppers "targeted, high-interest, high-value, conveniently-obtained rewards" (Muldoon, 2007). In fact, in 2007 a patent was granted to James Muldoon for a "process for distributing entitlements in a retail store to shoppers who are members of that retail store's frequent shopper program" (Muldoon, 2007). Coupons are offered to each frequent shopper program member on the basis of the pre-selected available product entitlements and his past purchases history to enable retailers to reward customers more effectively.

4) Self-Scanning checkout

Self-checkout was first introduced in 1992 by Price Chopper Supermarkets, after that Howard Schneider invented the "automated point-of-sale machine" that was patented in 1992.

The machine enables consumers to scan items themselves and pay for their purchases with a minimal of operators' assistance. Moreover, it is simple to use given that the self-scan interface guides the shopper throw the operations, and it is difficult for customers to cheat because the machine compares the weight of the object just checked with the weight given by the product lookup table, detecting fraudulent behaviors.

In this way retailers reduce labor costs (they only need a cashier supervisor for even eight self-scanning stations) and customers reduce their wait time at checkout (Schneider, 1992).

5) Walmart TV Network

Walmart was the first in 1998 that had the idea of introducing in its stores video monitors to communicate information to shoppers about new products and limited time offers, with the aim of increasing the sales.

Now Walmart TV Network has been replaced by Walmart Smart Network: the technology is the same, but the videos show relevant contents to customers, varying by store, by screen and by time of the day (Inman and Nikolova, 2017).

6) Gravity Feed Shelving Systems

This innovative merchandising fixture was first introduced by Campbell Soup in 2002 and it consists of a sloped shelf and a front wall; when a shopper takes the front product, gravity pushes the remaining merchandise down the sloped shelf to the front. This system makes it easier to consumers to take items, boosts sales (because items result well visible) and reduce labor costs (personnel don't have to tidy up the shelves anymore) (Inman and Nikolova, 2017).

1.4 Why the retail environment is changing

The online business, technological advancements, and the dramatic change in consumers' behavior are threatening the traditional brick-and-mortar stores.

Indeed, technological advancements are making deliveries faster than ever; two days is the average time, but in many cases, it is possible to receive the item ordered in the same day, and Amazon even guarantees 30-minute drone delivery in the future.

Moreover, Millennials, who make more use of devices, regularly switch across channels, are more informed and demand personalized shopping experience, are taking down Baby Boomers as the dominant generation. However, Baby Boomers themselves have changed their purchasing habits: they spend much of their income on services and experiences rather than products and, like younger consumers, research and buy products online, though to a lesser extent.

Finally, online sales are projected to increase in the next years and in the US and Western Europe, online retail sales will face an increase of 76% against the 16% of overall retail sales between 2017 and 2022 (BCG analysis, 2018).

Therefore, the major challenge for retailers will be maintaining their clients; so, they have to innovate and adapt to the new technologies trends to survive.

Figure 2   Online is growing faster than traditional retail
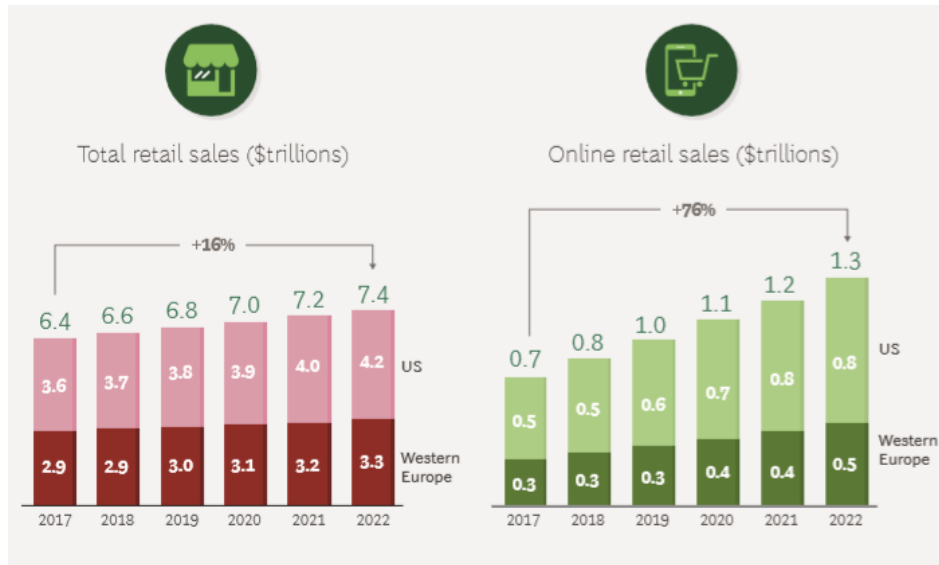
Source: BCG analysis 2018

To cope with the changing customers' needs, the increasing online competition and the new technology trends, retailers are integrating the digital world into the stores to create a better shopping experience. So, the worlds of online and offline are converging (Grewal et al., 2017), unifying the advantages of online (wide variety, product information and customer reviews) with the advantages of offline (possibility to examine the product before buying it, personal service and instant ownership); the aim is to create a fully integrated brand-experience and a seamless shopping experience across all channels (such as desktop or mobile devices, or brick-and-mortar stores), called omnichannel experience. Indeed, omnichannel derives from the Latin word "omni" which means "all", and "refers to the use of both physical and online channels combined with the delivery of seamless shopping experiences" (Lazaris and Vrechopoulos, 2014); and are customers themselves that ask for this integration of online and offline, or in one world an omnichannel experience. In this way they can "interact throw several channels (in-store, online, mobile, and other media) that might be available (and integrated) within the same point of sale" (Pantano and Viassone, 2015), thus they can easily switch across channels and devices and can simultaneously use several coordinated channels, which is not possible with multi-channel retailing (Lazaris and Vrechopoulos, 2014).

For instance, a consumer can search for products online, then ask the online chat for advice and finally make a purchase with his tablet. If he is unsure about the item bought, he can decide to have it sent to the closest store to try it on.

However, omnichannel strategy requires a considerable effort of retailers because they need to integrate merchandising, marketing, customer service and supply chain functions and make them think and act together (Saghiri and Wilding, 2016). Moreover, the wide availability of channels, with options ranging from Facebook to YouTube, require that they develop for each of them new customer-relationship-management, marketing, and promotion capabilities (Bellaïche et al., 2013).

But implementing an omnichannel strategy, even though difficult at the beginning, proves to be helpful because consumers tend to switch across channels provided by the same retailer, reducing the possibility that they turn to competitors. Indeed, a recent survey that studied the shopping behavior of 46,000 customers, found out that omnichannel shoppers make 13% higher in-store spending than customers that use only one channel (Sopadjieva et al., 2017).

Moreover, "click and collect" purchase method (a facet of omnichannel consisting in customers buying items online from the store Website and then collecting them in store) reduces operational costs for retailers and increase the presence of customers in stores, increasing the probability that they engage in unplanned purchases. On the other hand, customers benefit from instant gratification and saving on delivery costs.

1.5 How technologies are re-shaping the retail industry

> "We will see more disruption in the next 10 years than we did in the previous one thousand"

said Doug Stephens, founder of Retail Prophet, in 2014, and this prediction was pretty spot-on. Indeed, the emergence of smart technologies, omnichannel strategies, digitization processes and new jobs and tasks, is making this prophecy come true.

However, even if the sector is changing and in future we expect the number of purchases done online growing exponentially, the physical stores will not disappear (Kahn, 2017). In fact, people just do not buy products because they need them, but because they look for experiences, moments of socialization, and the "immediate gratification of instant ownership" (Bellaïche et al., 2013), and online cannot fulfil all these requirements, only brick-and-mortar stores can.

But stores will be different from the ones we know; they will likely become smaller, saving money on rents and inventory; there will be an increase in the temporary store format and they will transform into experiential showrooms.

Indeed, their principal purpose will no longer be to sell products; people will enter them to get inspired, see and test items, experiment and co-create. "Beyond mere consumption, we will go to these spaces for entertainment, education, connection and community" (Stephens, 2018).

For instance, last year Nordstrom opened a new store in West Hollywood called Nordstrom Local, where customers can get manicures, try on clothes, receive personalized advices from stylists, and take a coffee or even wine and beer with friends (Zorthian, 2017). So, in the stores of the future only 30% of the space will be dedicated to shopping, against the 70 % of today, and in the remaining will be set up food, entertainment, lifestyle, and community activities (Tuttle, 2017).

However, not only traditional stores but also online retailers are evolving; indeed, they are increasingly embracing the offline business, opening brick-and-mortar stores. The reason is that online retailers, just like offline ones, want to create a highly personalized, and integrated shopping experience across all channels.

Indeed, the introduction of in-store technologies can give retailers better insight of what drives purchases, what items take customers' attention and what technologies they prefer. At this purpose, analytics tools are useful to anticipate customers' future purchasing behaviour and to understand the needs of each customer segment, adapting the experience delivered accordingly.

Moreover, technologies can respond to customers requirement of fast deliveries, anytime, anywhere access to stores, personalized contents and tailored suggestions; but they can also make more attractive the point of sale. Indeed, the store atmosphere made by interesting displays and events, appropriate aromas and lighting, and helpful, friendly salespeople have an effect on consumers' pleasure (Baker et al.,1992), and encourage shoppers to browse longer and spend more (Beatty and Farrell, 1998). Therefore, digital technologies can have a decisive role in the creation of an appealing store atmosphere and, by generating positive emotions, can favourably affects purchase intentions, leading people to make unplanned purchase decisions and buy items without pre-shopping intentions (so not goods that were simply out-of-stock at home).

This new hyper technological environment is also able to attract the male population that wasn't fascinated by conventional stores (Otnes and McGrath, 2001) and 18-25 years-old consumers (Pantano and Viassone, 2015).

This means that it is succeeding in the challenge of attracting new segment of population and engaging the current ones in more purchases, more frequent shopping and increased time spent in stores, with positive consequences for retailers given the increase of positive patronage and recommendation intention (Poncin and Ben Mimoun, 2014).

But what are these new smart technologies that are changing retail?

The following section will shed light on this issue.

1.5.1 Technologies expected to disrupt retail industry

The technologies revolutionizing retail take the name of Smart retail technologies, given their ability to deliver services to consumers throw a network of smart objects and devices, which can sense the environment around them and provide real time data collection, communication, interaction and feedback (Wünderlich et al., 2015).

For instance, Kroger, the American grocery chain, is using a platform which includes video analytics, wireless devices, POS devices, handheld sensors, IP cameras and video management software which makes it easier for customers to find out the items they want and save time at checkouts, granting them a better shopping experience (Lee and Lee, 2015).

Eight new technologies are expected to disrupt the retail industry and they are: 1. Internet of Things (IoT) 2. Autonomous vehicles / drones 3. Artificial intelligence (AI) 4. Robotics 5. Digital traceability 6. 3D printing 7. Augmented reality (AR) 8. Blockchain. Among these, four technologies (Internet of Things, autonomous vehicles/drones, artificial intelligence and robotics) are predicted to have the greatest impact on the industry in terms of adoption, efficiency and impact on labour (Donnelly et al., 2017).

However, given the wide availability of technologies that are overcrowding the industry, retailers can choose the ones that best suit their business, taking into account not only the ROI associated with the project, but also the potentialities that new devices can offer to customers and the likelihood that they will use them (Inman and Nikolova, 2017).

1) Internet of Things (IoT)

The concept of Internet of Things (IoT), is about "an open and comprehensive network of intelligent objects that have the capacity to auto-organize, share information, data and resources [..], and which allow the communication between human-to-human, human-to-things and things-to-things" (Madakam et al., 2015).

So, IoT identifies the extension of the Internet to common objects, turning them into "smart objects". IoT works throw the use of tags, small metallic chips inserted into the objects, that collect and transmit information, via radio frequencies or Bluetooth, to a mobile device or a computer.

There are three types of tags: RFID, NFC and Beacon; Beacon, that uses ultrasound Bluetooth Low Energy systems to communicate with customers' smartphones, is the most common one, given also the much wider range of action. Objects functioning thanks to beacon technology send notifications, special offers or information to customers within a radius of 100 meters, provided that shoppers kept the Bluetooth and localization services on and the store application had been installed on their smartphone. For example, a shopper in the ice-cream section could receive an ice-cream coupon or coupons that invite him to visit sections not yet explored (Inman and Nikolova, 2017) or monuments can send a message to people' smartphone when they pass by, to remind them of its presence. Additionally, this technology can be applied to Smart Shelves, including beacon-activated mobile advertising, and as people get close by, a promotion, a target advertisement or a helpful reminder appear on customers' smartphones, personalizing the messages according to the user's profile.

Moreover, smart shelves can include digital price tags that allow to update prices automatically and dynamically; so, this means that prices can be changed many times a day on the basis of the demand. This was not possible before because many stores have thousands of items and changing their prices many times a day is quite impossible given that doing this work manually takes many hours. Using smart shelves retailers have a double benefit: they save labor costs to a large extent and are able to update prices dynamically during the day or on the bases of the consumers' willingness to pay (for example by charging higher prices on prepared food items at dinner time, calculating that people are in a hurry and are willing to spend more in order to save time), leading to an increase in revenues (Inman and Nikolova, 2017).

Moreover, thanks to beacon it is possible to create highly effective proximity marketing, in-store analytics, indoor navigation and contactless payment systems.

IoT technology allows to communicate with shoppers in real time at any stage of the purchase cycle by providing relevant, interactive and personalized contents; or else, it can

improve business processes by enhancing cost efficiencies in inventory management, retail logistics, payment systems and store employee management (Durdevic et al., 2017). By its nature, IoT generate enormous amount of data. In order for this data to generate useful information and create value, it is necessary to apply big data analytics.

2) Autonomous vehicles / drones

Some firms have started implementing innovative delivery services which allow to reduce delivery time and costs but also enhance customer satisfaction.

For instance, Amazon, Google, and Wal-Mart are planning to introduce drone deliveries which can guarantee speed, flexibility, security, and lower cost. However, the main advantages of drones are speed and the capacity to correctly predict delivery time, given that the airway is free from road infrastructure or traffic congestion (Yoo et al., 2018).

3) Artificial Intelligence (AI)

AI has been defined by Minsky (1968) as

> "the science of making machines do things that would require intelligence if done by men"

and so, it refers to the idea that computers can think like humans and make appropriate decisions; therefore, it differs from the IoT concept, which, instead, concerns devices equipped with sensors and software to collect and exchange data. IoT can be seen as an input for AI, as it uses IoT or other big data sources as an input to perform its tasks.

This technology can be broadly used by many industries and finds application in the retail sector as well. In particular, AI allows companies like Walmart to identify unhappy and frustrated shoppers at checkouts by using facial recognition technology to trigger remedial actions such as opening new cashiers or proposing snacks and drinks to customers (Kaplan and Haenlein, 2019). Facial recognition is also used for antitheft purposes as retailers are able to know the moment someone who shoplifted in the past, or anyone else you want to monitor, enters the store. Moreover, the technology allows to immediately recognize a loyalty program shopper and to show personalized offers, coherent with his profile, on displays. This technology is already available online, and when users enter websites like Amazon, personalized advertising, based on their previous purchases or items put into the cart, appears on the monitor.

Alternatively, AI can be applied in the form of chatbots that can generate automatic responses to customers' requests and questions throw social media channels or emails (Kaplan and Haenlein, 2019).

4) Robotics

Robotics is an interdisciplinary science, born as a branch of mechatronic engineering, that deals with the design, construction and development of robots.

Robotics finds application also in the retail sector, where robots are used to move shelves, detect damaged products, replenish and count inventory, help customers in the buying process and much more.

So, tasks like stocking shelves and checking out, currently done by employees, will be automated. For instance, Amazon opened, at the beginning of 2018 in Seattle, Amazon Go, a store where customers can just pick up items, and at the exit of the store they will be automatically charged for them, without the need of queueing at checkouts. Indeed, Just Walk Out Technology, which combines cameras and sensors, keeps track of products that are taken from or returned to the shelves and is able to associate each person with the items he is buying. However, the absence of cashiers doesn't imply the absence of staff members, these are present in the store prone to help customers (Amazon).

Automation will reduce labor costs and increase efficiency, given that robotics allows greater flexibility, improved accuracy and less time in completing simple and repetitive tasks.

5) Digital traceability

Digital traceability ensures supply-chain product traceability and merchandise tracking. Advanced tracking systems substitute the traditional ones, such as the barcodes, and make it possible to identify and track items along the value chain through the use of a tag attached to a specific item, recording every move and its history. The two main communication technologies for transferring the data are Radio Frequency Identification (RFID) and Near Field Communication (NFC). They are capable of real-time pinpoint location and identification of items in production and warehouse area. Thus, they can reduce operating costs, optimise the efficiency of the current assets of a company, and even increase sales. The same data can be captured from the source by suppliers to retailers and even end-users (Probst et al., 2015).

6) 3D printing

Addictive Manufacturing, better known as "3D printing", is the computer-automated process that creates physical 3D objects layer by layer from computer-aided design (CAD) models using metallic, plastic, ceramic, composite, or biological materials.

This technology allows to create customized products, reduce material waste, time and cost of manufacturing for small quantities production.

Indeed, "recent innovations in materials and processes are transforming 3D printing from rapid prototyping to rapid manufacturing, enabling "on-demand" manufacturing and drastically reducing inventories and wait times" (Huang et al., 2015).

In this way it is possible to have in store product printing, supplied from a footprint that uses the minimum amount of space, offering shoppers maximum choice and immediacy. On the other hand, retailers become manufacturers, able to make or finish customized goods on demand.

7) Augmented Reality (AR)

Augmented reality refers to the technology that mixes together inputs coming from the real world and the computer-generated environments to create a new "augmented" reality in which the user has the perception that the virtual and real objects coexist in the same space (Azuma,1997). It differs from virtual reality to the extent to which the user is not completely immerse inside a synthetic environment and so he does not lose perception of the real world.

The technology was developed in 1968 at Harvard by the computer scientist Ivan Sutherland and was first employed for military, industrial and medical purposes and only recently it has been exploited in the commercial field (Hwangbo et al., 2017).

For instance, Smart Mirrors are tools that incorporate augmented reality technology; they are made of software and hardware systems which recognize customers' body and allow them to virtually try on clothes, create outfits, try combinations, order directly items, share photos with family or friends to receive advices, connect to social media or even order drinks (Willems et al., 2017). Smart mirrors also add virtual fitting functions that give customers personalized recommendations about type or size of clothes, after entering information such as height, weight and preferences.

Customers can virtually try on clothes in colours or sizes that are not available in the store, enjoying a unique shopping experience, and in the future they will even able to feel them (Hwangbo et al., 2017).

Moreover, IKEA's Place app is a further example of the applications of augmented reality. The technology, implemented in 2017, allows to see how more than 2,000 true-to-scale 3D furniture items would look in customers' homes, by scanning the room using their iPhones comfortably at home.

8) Blockchain

Blockchain technology was born in 2008 as a result of the emergence of the bitcoin cryptocurrency. Blockchain functions as a ledger and works without the need for a centralized, trusted authority. So, "it is a public ledger of all transactions or digital events that have been executed and shared among participants and can be verified at any time in the future" (Galvez et al., 2018). Consensus of the majority of participants in the system is needed to verify the authenticity of each transaction and once consensus is reached, information can never be modified.

Blockchain technology applied to retail can guarantee product authenticity, tracking and tracing of products and has also the potential of enhancing the customers experience.

Customers can scan the smart tag associated to items with their smartphone to verify their origins, both for ingredients and products. Therefore, blockchains prevents counterfeit issues given that all information produced along the supply chain are recorded and consumers can easily check details about the product in real time (Galvez et al., 2018). Moreover, this technology allows to create digital wallets to centrally manage all loyalty points, reward cards and digital coupons.

Case Studies 1 Retail companies innovating their stores: Benetton case

> The retail clothing company Benetton was founded in 1963 in Ponzano (TV) by the four Benetton siblings. Since its origins, the company distinguished itself for bright and colourful garments, which reflected the idea of an innovative brand.
> This attention for innovation remained constant during the years and, in fact, the group did not hesitate to embrace the revolution that is affecting the retail sector.
> Indeed, in March 2018 Benetton opened a new innovative and technological store in London; the new format has also been implemented in the new store in Padua on October 26th, and new openings are planned for 2019.
> The new format focus on colour and innovation to create a more relaxed and hi-tech space. The bright colours, which characterize not only the garments but also the walls and the large arches covered with LEDs, make the store attractive and visible even from afar.
> Instead, from a technological point of view, customers can try a completely renovated and engaging shopping experience, based on omnichannel strategy.

The new stores have been transformed into a showroom, which reflects the brand and its values. Indeed, the store located in Padua, that once hosted "Supercinema Principe", now has two cinema rooms, complete with screens and cinema seats, showing the brand history.

However, the aspects of main interest are the knitwear bar and the new checkout stations in the ground floor. The knitwear bar is an interactive space displaying knitwear, where customers can use the interactive screens to get information about the items selected or to discover the brand's entire collection. Moreover, clients can get the products' label close to the screen to view more detailed information about them. In the same area there is also a sewing machine that allows to personalize clothes.

Furthermore, with regard to the checkout, the company has introduced many circular stations, where customers can pay by smartphone or card. In this way customers can pay in a simple and fast way, thus allowing to skip the line and save time. However, the traditional checkout has not been eliminated, so that clients can choose the preferred payment method.

But the point of sale is at the cutting edge of technology also with regard to the omnichannel.

Indeed, there is the possibility to order an item in store and receive it directly at home, and starting from January, the "click and collect" and "return to store" options are also available. In this case, purchasing an item online directly from the store is beneficial to customers because they get the free shipping advantage.

The company has also introduced the RFID system, thanks to which restocking, and inventory processes are facilitated. Indeed, before using this method, restocking and inventory were done by sales associates manually, and they took at least two days. Items had to be checked piece by piece, size by size for restocking, and about 1500 garments had to be inventoried at the beginning of each season.

Now, instead, as soon as goods are unloaded in the warehouse, there are antennas that register the entry and exit of each item. So, it is possible to know immediately how many pieces and of which colour and size are stocked.

In this way, restocking can be made in just a few seconds, by simply pointing a tool (PDA) toward the shelves, and sales associates can instantly know what is exposed and what is missing, and so they need to take from the warehouse. Moreover, with the RFID system, by just walking slowly throw the shelves, it is possible to complete in half an hour the inventory of the entire store, as the system is able to read everything is present on the shelves.

Moreover, this system allows to know if an item is in stock and its exact location.

The introduction of this new system requires skills that were not needed before. Now it is important to possess digital skills, as all staff takes care of omnichannel. Indeed, all in-store sales associates can help customers with new technologies and order the items online for customers. However, they are not equipped with tablets, even if this is planned to happen in the near future.

In terms of relational skills there have not been substantial changes, as the approach used to assist customers is related to the old way: assist sales and establish a relationship. The only difference is that now sales associates are helped in their tasks by technology. The technologies introduced are simple to use, so everyone should be able to leverage them, given also the young age of sales associates; however, training activities have been set up to teach sales associates use new technologies.

Figure 3   The new checkout stations

Source: Benetton website

1.5.2 Retailers' technology adoption decision

Traditional retailers are leveraging smart technologies to improve customer experience and defend against online competitors; in particular, technologies can be implemented to support their back-end and front-end business. In this latter case, technologies have the function to enhance the customer experience at the point of sale across all the customer shopping journey to help in the orientation, selection, transaction, deliver and customer care processes.

Figure 4   In-store digital solutions across the customer shopping journey

Source: BCG analysis 2015

Smart retail technologies have the potential to reduce the costs for retailers, especially labor costs, and increase efficiency. For example, with Scan and Go technology the scanning activity previously performed by employees is now done by customers, determining high cost reduction for retailers. Similarly, with digital price tags employees don't have to manually update prices anymore and this leads to a decrease in labor costs as well. However, other than cost saving benefits, retailers can also experience an increase in revenues due to the fact that smart technologies have the potential to attract new shoppers, because of the pleasant store atmosphere and the increasing services offered, entice current shoppers in more purchases, thanks to ad hoc advertising, or charge higher prices to customers with a higher willingness to pay. In fact, retailers can offer mobile coupons based on shoppers' price sensitivity or digital shelves can automatically raise prices when price sensitivity is lower, depending on the time of the day, the days of the week or the product category (Inman and Nikolova, 2017).

BCG's analysis (2015) shows that is convenient for retailer to adopt a digital strategy. In fact, the research that surveyed 25 European and North American fashion retailers, demonstrates that digital leader companies (companies which have fully integrated digital technologies, implemented an omnichannel strategy and analytics capability) have higher EBIT growth than digital followers.

However, most physical retailers remain too set in their habits and allocate only a minimal part of their budget to IT investments and the majority of times the funds are spent on maintenance and upgrades of backbone technology systems that support merchandise and supply chain functions.

Instead, some companies are investing a lot in innovation. For example, in 2014 Nordstrom announced that 30 percent of its capital expenditures would be in technology. It established an innovation lab in Seattle to develop and test new products on a weekly basis and it also invested in e-commerce companies such as Bonobos, Trunk Club, and HauteLook to merge the online and in-store shopping experience.

Other companies have established store employee teams, supported by IT, or innovation labs that have the task to explore new technologies that can enhance the retail experience; or have partnered with retail-technology start-ups, technology giants such as eBay and Google, and universities to improve their digital capabilities.

1.5.3 Costumers' advantages

On the other hand, the introduction of smart technologies in the retail industry creates a pleasant environment in which to shop, increasing costumers' satisfaction as well as their positive shopping experience.

Indeed, "new elements can stimulate consumers attention and interest" (Pantano and Naccarato, 2010) and in this way the act of shopping is likely to become a funny experience, able to capture even the attention of the male population, usually not interested in shops.

Moreover, thanks to smart technologies costumers can receive more customized fast and detailed information about the products, can learn about new arrivals in the store, make comparisons, virtually try-on products, and save time; but having higher autonomy in shops and performing more tasks by themselves without the need of shop assistants doesn't mean only time saving, because for example shoppers reduce queuing time at the

checkout, it also means having the possibility of buying items without the constant feeling of being watched.

Indeed, Esmark et al. (2017) have demonstrated that when shoppers perceive of being watched while buying items, especially embarrassing ones, they start feeling less control over their privacy; and lower privacy results in an increased tendency to temporarily or permanently abandon the area, with consequences in terms of lost purchases.

Moreover, when they deal with more personal purchases they may resort to delinquent behaviors to avoid being seen while acquiring the item source of embarrassment.

Therefore, in this situation the adoption of self- scanning checkouts can help solve the problem.

1.6 Issues arising from the implementation of smart retail technologies

The main concerns are about the perception that costumers could have toward new technologies, given that they could not accept that retailers offload part of the labor to them. With the conversion of many activities into self-service activities shoppers have to perform more tasks than before and their fairness perception may suffer (Inman and Nikolova, 2017).

Thus, self-checkout lanes may increase unfairness perception, and in particular Smart Shelves, which raise prices many times a day, might be considered an opportunistic behavior and increase the sensation of price unfairness.

Moreover, the recent developments in technologies make consumers feel insecure of how their private information is used, increasing the concerns that companies may misuse their personal data; concern that increases with the awareness of the large number of companies that collect private information, the uncertainty of how this is used and the limited control that costumers have over the use that firms make of their data (Smith et al., 1996). With the introduction of smart technologies costumers engage in privacy calculus and compare the costs of giving up some personal information to the benefits obtained in terms of customer service and shopping experience, such as more customized, just-in-time promotions. On the other hand, technologies that invade shoppers' privacy, for instance video cameras hidden in mannequins, may be seen in a negative way by shoppers who "evaluate the potential intrusiveness of the technology on their personal privacy"

and instantly "update their perception of fairness, value, satisfaction, trust, commitment and loyalty" towards the firm (Inman and Nikolova, 2017).

Moreover, consumers are facing products and services that are becoming increasingly sophisticated from a technological standpoint and they can show difficulties in dealing with them, increasing their discomfort and by consequence they may reveal a negative attitude toward the new technology. Technology readiness, defined by Parasuraman (2000) as "people's propensity to embrace and use new technologies", and perception of ease of use, play a determinant role in the consumers' adoption decision.

People who have positive feelings toward technology are more likely to accept it, but also store reputation, perceived usefulness and perceived ease of use are important factors explaining customers' behavior (Roy et al., 2018).

Stores with higher reputation are seen as more trustworthy and shoppers display a positive attitude toward the innovations that they add; however, it is also true that when high reputation stores introduce technologies not offering superior functions and benefits, consumers may react showing a resistance to change.

In conclusion, retail stores should adopt technologies that "offer enhanced customer value by improving the shopping efficiency" (Roy et al., 2018) and that are user-friendly and easy to use, to reduce costumer frustration and dissatisfaction.

1.7 Conclusions

Nowadays, the recent technological developments, the increasing popularity of online purchases and the change on people behavior, made it necessary for offline retails to innovate in order to adapt to the new emerging trends.

Indeed, the emergence of e-commerce has completely changed the way in which people shop, buy and deal with products, and customers now ask for the same experience, whether they are in front of their computers or inside a shop.

Consequently, the traditional brick-and-mortar stores are introducing smart technologies that allow consumers to enjoy a unique shopping experience, able to merge together the advantages coming from the online and offline sides. Clients can access the store anytime and anywhere, get enhanced information on the product (for instance, thanks to video explaining the manufacturing process) and utilise a wider range of services, such as click and collect, return to store or home delivery options. Moreover, they can enter a hyper

technological environment in which virtually try-on clothes, get more customized information, play with products as in a videogame, receive personalized advertisement or avoid queueing at checkouts. In other cases, consumer's digital devices are the way throw which providing an engaging experience. Their mobile phone is used to discover deals, coupons or information about products.

As a result, customers' satisfaction increases, they spend more time shopping and less queueing and the likelihood of making purchases increases.

On the other hand, retailers can benefit from a decrease of labor costs, increase of efficiency, growth of sales and revenues. Moreover, brick-and-mortar retailers that implement digital technologies in stores, both to enhance the customer experience and to improve employee performance, tend to outperform retailers that have not yet implemented a digital strategy.

However, it is very important to take the right precautions to avoid that shoppers' fairness perception will suffer and to equip stores with user-friendly and easy to use technologies to reduce costumer frustration and dissatisfaction which could lead them to undermine the innovation, resulting in lost investments on the retailers' side.

Next chapter deals with some case studies related to small shops, belonging to the proximity retailing category, which have embraced new smart retail technologies and have innovated, despite difficulties that small players can find.

DIGITAL TRANSFORMATION IN PROXIMITY RETAILING

2.1 Proximity Retailing

The proximity sector includes two broad types of retail business: general convenience stores, that comprise convenience-store chains, small supermarket chains and independent corner grocery stores; and retailers with core product specialisations like in the cases of gas stations, drugstores, booksellers, and fresh food shops.

In the mature retail markets in the US and Europe, proximity retailers suffer the presence of large grocery stores and hypermarkets, and struggle to obtain adequate financial returns. Indeed, in proximity retailing mass marketing is rarely economically affordable, and central stores locations by themselves act as advertising medium. In fact, proximity customers shop at their nearest most convenient store, and, so, proximity becomes a critical variable to a retailer's competitive performance. However, location does not provide a basis of brand differentiation, and customers do not show a preference for one store over another given equal proximity, given that creating a strong store brand and achieving brand differentiation is more difficult than in other retail sectors. By consequence, these retailers cannot exclude any customer group, and they must offer a broad range of price and quality. In contrast, the decision to expand into proximity formats by large grocery chains with a strong brand name, can reveal successful, as in Tesco's case.

However, convenience retailers are generally not large enough to afford the investment in product quality and innovation needed (Wileman and Jary, 1997).

Indeed, Pantano and Viassone (2014), which conducted an analysis on small North Italian shops, discovered that investments in innovative technologies are not so common. Small retailers mainly adopted automatic cash desks, automatic systems able to purchase and

elaborate orders and vertical computerized storehouses. In short, they implemented technologies with the aim of reducing management costs and improving the communication within the supply chain; but they are still diffident in embracing innovations in the point of sale, able to raise customers' satisfaction, create an enjoyable shopping experience or decrease their waiting time.

The main reason is that retailers are reluctant to invest money in technologies that are not sufficiently diffused, in addition to the prospect of unsure returns, the uncertainty related to consumers' acceptance decision, the high costs required, the lack of adequate internal skills and the lack of knowledge of digital innovations available.

However, technologies are ever more present in everybody lives and even small retailers cannot remain indifferent. Indeed, a few of them acted as pioneer and have adopted front-end smart technologies. The next paragraphs deal with some cases of small stores, belonging to different retail fields, that have adopted back-end and front-end innovations. The paragraphs are built distinguishing between independent stores and big retail chains.

2.2 Pharmacies

Technological innovation is revolutionizing the pharmaceutical sector, not only in laboratories but also in stores. The increasing share of ageing population and the technology revolution have determined a shift of the pharmacists' role; it is not only about selling medicines, but also about offering pharmaceutical services, playing an advisory role (Pol, 2018).

The future of pharmacies is characterized by the presence of App, chatbot, interactive digital totems, omnichannel, digital shelves, beacons, robots and artificial intelligence. Robots have been used in logistics and distribution for many years, but only recently in pharmacy. They are used to improve the speed and efficiency of the dispensing process, control stocks and stock drugs (Goundrey-Smith, 2014).

IT in pharmacies can help keeping patient records, and the pharmacist can view in a few seconds on his own monitor the personal data of the patient, his previous purchases or any intolerances. Moreover, thanks to AI the pharmacist receives suggestions on the questions to ask or on the advice to be given in case of dispensation of a certain drug; in this way the pharmacist becomes a "potentiated pharmacist", given that technology enhances the service that he gives to patients.

2.2.1 Independent Stores

1) *Farmacia Comunale Rovereto*

The most important innovation introduced by this pharmacy in August 2018, concerns the automated warehouse management, both for drugs and for cosmetics. Pharmacists give the order via PC, and products automatically appear in a few minutes. In the meantime, instead of losing time searching for items, they can dedicate time to clients and answer their questions. Moreover, the automated management of the warehouse allows the exit of drugs from three points, at which correspond as many checkouts. In this way there is not only one checkout, and customers' privacy is granted.

2) *Farmacia Mazzuchelli*

This drugstore located in Busto Arsizio, at the beginning of 2018 renovated its store in a smart version, becoming a multimedia and touch pharmacy. Three big screens were introduced, showing the entire catalogue and explaining drugs dosage, effects and contraindications. Moreover, the pharmacist prepares illustrated "stories" to explain to the patient the best therapy for his case.

Furthermore, in the store was implemented a robotized warehouse. Once pharmacists send the order, a robot placed in the warehouse picks up and sends the requested drugs.

In the future, proximity marketing campaigns, more tailored to customers' needs, are planned to be launched.

3) *Pharmap*

Pharmap is a smartphone app which allows people, that for reasons of time, health or work cannot go to the store, to contact the drugstore and receive in a few minutes the products desired, even those requiring appropriate precautions, like the insulin that needs to be carried in a cooler, or those which need a prescription. In this latter case it is required to upload the electronic recipe file or a photo of the prescription; otherwise, Pharmap will take charge of picking up the prescription at the indicated delivery address or the doctor. Users just have to download the app, register and select their preferred pharmacy among a network of almost a thousand independent pharmacies located in Turin, Milan, Verona, Florence, Genoa, Bologna, and many others. Then they have to choose a product and indicate the delivery address. Pharmap connects clients directly with the drugstore, which

will see the order, prepare the package and will notify the courier who will not have information about the medicines bought by patients, to fulfil privacy concerns. In addition to pharmaceutical delivery, the app also allows to book all the services and medical exams offered by pharmacies. Users have also the possibility to monitor the therapies followed, by simply adding times and doses of medications prescribed; then they will receive a notification reminding to take the drug.

2.2.2 Big Retail Chains

1) *Rite Aid*

The pharmacy chain Rite Aid has undertaken a large beacon installation program, implementing the technology in over 4,500 US stores. Rite Aid decided to adopt IoT technology throw the use of beacons with the aim to gather data useful for their retargeting plan and to personalize the user experience, achieving personalization capabilities similar to the e-commerce ones.

2) *Walgreens*

Walgreens has innovated in its retail stores by implementing Beacon and other technologies at over 7000 locations. Beacon is used to alert passers-by of offers and in-store coupons, boosting its loyalty program. Moreover, they innovated also in the mobile app front; customers can get timely updates about their prescriptions on their mobile phones, receive coupons based on their buying history or fill prescriptions automatically from the app.

2.3 Luxury

Luxury brands, and jewellery brands in particular, were skeptical about the digitization and use of e-commerce; indeed, preserving the image of exclusiveness and uniqueness associated to luxury's brands, it is a challenge because of the democratization of the Internet mass medium. (Baker et al., 2018)

Indeed, a Federpreziosi Confcommercio research (2017) demonstrates 66% of jewellery retailers are online, but 68,9% of them use the site only as showroom, and not for online sales. Moreover, only 39,9 % of jewelry stores make use of social networks to promote their business and 32% of retailers consider disadvantageous the digital change.

However, today technologies are ever more part of our lives and customers habits have changed, making it necessary to luxury retailers to embrace new technologies.

In the future, jewelleries will likely use simple displays that transmit messages, digital signage, Beacons that, with small chips positioned inside the store, send personalized contents to the smartphones of the users nearby; RFID and NFC systems, that can be considered the evolutions of bar code; biometric or facial recognition that can collect and process information such as gender and age group, and augmented reality solutions that offer an immersive experience of strong impact (From Vicenzaoro Digital Talks, September 2018).

2.3.1 Independent Stores

1) *Gioiellerie Matranga*

Matranga, that has shops in Palermo and Trapani, introduced in 2011 the RFID system with the aim to reduce the time needed to make the inventory, have an efficient anti-shoplifting system and a valid sales support tool.

Indeed, the RFID system allows the constant monitoring of the flow of goods entering and leaving the store, eliminating inefficiencies in the management of the point-sale and waste of time. Moreover, the inventory time is significantly reduced, passing from 24 hours/man to 1 hour/man, so about 60 minutes to inventory the entire room instead of the entire day. In fact, with RFID it is sufficient to bring the mobile PDA closer to the objects, without removing them from the shelves and opening the boxes, to exactly know the jewels contained in the boxes.

Furthermore, the sales counters which incorporate readers and antennas RFID, are able to constantly monitor the jewels displayed to avoid the classic theft with dexterity, which consists in replacing a jewel with another similar but of little value.

2) *Burato Gioielli*

Implemented an omnichannel strategy, supported by the optimization of digital channels, to help strengthen the brand image and increase sales, not only online but especially in physical stores.

The aim is to offer Burato customers an omnichannel experience; the customer can feel at any moment in a store, with the possibility to buy, be informed about market trends and choose the jewel that better fit with his lifestyle.

3) BaubleBar

The online jewellery retailer BaubleBar has set up a pop-up shop where web technologies are transferred to a physical space. Shoppers enter a store characterized by digital touchscreens and interactive displays which show content when shoppers pick up individual pieces of jewels. They can use in-store iPads to design and purchase jewels personalized with their initials and their preferred colours, materials and size, and they see a preview of their jewels on the spot.

2.3.2 Big Retail Chains

1) Stroili Oro

This Italian brand, that relies on more than 400 points of sale in 24 countries, has adopted a tablet sales management solution. At the base of this choice there are, on the one hand, the need to make sales processes more efficient and faster and to receive information always up-to-date and punctual, and on the other a new approach to deal with customers. Thanks to the innovations introduced the company knows in real time the status of progress and fulfilment of orders and CRM functionalities allow to manage key information on customers products and its brands.

2) Alex and Ani

Alex and Ani uses beacons in all of its 40 stores to educate consumers about its jewellery. Indeed, 30% of the customers who saw the notifications, visited the store. Contrary to popular belief that beacons are only for 'pushing' ads, the jewellery brand uses beacons differently without using them to promote flash sales and other discount promotions.

2.4 Flower shops

Many flower shops today are concept stores, where customers buy flowers but also have the possibility to relax taking a coffee or a drink (like in the case of Fioraio Bianchi Caffé in Milan), reading a book (Figli dei Fiori in Como) or listening to music and participate to jam sessions (Fiori di Rosalba Piccinni). However, the future of flower shops is also characterized by Augmented Reality applications, to let customer see how the floral arrangement will look like, or by online services like in the Bloovery case.

2.4.1 Bloovery

The Italian startup has devised a system that allows the user to buy a bunch of flowers, dialoguing with a bot on the Messenger app. Customers can select the flowers among the bouquets available, and choose the date, time of delivery and the message to be attached. This is a way of simplifying the purchase process, allowing customers to buy flowers in a minute wherever they are and in every moment.

Users can utilize the service from the Website or the mobile app, or by talking with a bot on Facebook Messenger. The bot will ask questions like: Where do you want to send the flowers? What day? At what time? and can suggest clients the most suitable flower for each occasion, on the basis of which message they want to send and to whom.

In the future, Bloovery app will also allow to send photos and videos with augmented reality and will include an order tracking service to monitor flowers' movements.

2.5 Food

Big grocery chains like Wal-Mart and Kroger adopted new retail technologies to improve the inventory management as well as in-store technologies to increase customers' satisfaction. However, not only big retail chains but also small convenience stores can leverage these innovations to enhance shopping experience, as Emmas Enkel' example shows.

2.5.1 Emmas Enkel

This German shop was conceived since the beginning with a multi-channel mindset, with the aim of making purchasing processes flexible and convenient for different customer targets. It is a convenience store that resembles a little traditional shop, with a deliberately slightly retro setting. Indeed, Emmas Enkel means 'the nephews of Emmas', an expression that immediately sounds familiar to the Germans clients, since traditionally the neighbourhood shop is called 'Aunt Emma's shop'.

The shop in its 120 square meters offers only 500 references, but the range extends with another 1,700 references settled in the warehouse, which can be chosen with a mix of possible purchasing processes: in-store with an iPad, assisted by associates or with a touch screen in a self-service mode or even with a mobile phone via QR codes, displayed on the wall next to the product photos. While employees, who receive the order in real time, retrieve the products from the warehouse, customers can sit in an armchair and take a coffee, while waiting for the items.

2.6 Sporting Goods Store

Footworks and Rose Biketown are examples of retailers, different from big retail chains, that have innovated and embraced new technologies, providing differentiating elements which constitute a competitive advantage.

They have been able to create a stronger relationship with the customer, who is more engaged and actively participate to the purchasing process, thanks to digital transformation that has the potential to enhance the shopping experience provided by brick-and-mortar stores.

2.6.1 Footworks

This store in Rome is specialized in running equipment and the interior design reminds of an athletic field, with, for instance, seats reproducing the starting blocks.

The customer will be amazed by the store atmosphere, but also by the enhanced experience offered. Indeed, he has the opportunity to try out the shoes and be filmed by a camera. Then, the customer can review his performance, helped by specialized sales associates, who will suggest the running shoe best suited to him, on the basis of the biomechanical analysis results. In this way, sales assistants' expertise is combined with technology to deliver a better service and identify the perfect product tailored to customers' needs.

With the new technological solution adopted, Footworks aims to increase in-store purchases and combat showrooming behaviors. Indeed, to access the new biomechanical analysis service with video recording of the race, customers have to pay 15 euros, immediately recoverable but only if the purchase is made within 30 days, in the store.

2.6.2 Rose Biketown

In this German bicycle shop clients can find a unique shopping experience giving the possibility of having a full and professional body measurement, expert advice, and the snack area where tasting snacks and drinks. Customers can configure their ideal bike with the help of dedicated personnel and see the final result on the tablets and large screens in the store. It is also possible to start the design process directly at home with a computer and end it in-store thanks to the help of the staff.

There is even the chance to do bike sizing, saddle fitting, and even a process of 3D foot scanning to determine which manufacturer has the shoes that best corresponds to your foot. Data are saved on customers' account and the software automatically compares this

information with the characteristics of products available, showing those having the best fit. This is an example of a perfect interaction between online and offline.

2.7 Optician shop

2.7.1 Oxo

The Point of Sale already communicates from outside, capturing the attention of passers-by with videos and promotions. There are specific displays for windows, window displays and touchscreen monitors, coordinated by a software that oversees everything via the internet.

2.8 Conclusions

Small players in the retail sector have difficulties in adopting new smart technologies, that retail giants are leveraging. The reason is that they cannot afford the risk not only associated to the investment costs but also to an eventual failure due to a warm customers' response to innovation. So, North-Italian retailers implemented technologies with the aim of reducing management costs and improving the communication within the supply chain but not point of sale innovations. However, exceptions exist, and the chapter focus on small retailers which have innovated also from a front-end point of view.

Next chapter focus on the effects of the introduction of technologies on employment, which cause an overall reorganization of the labour market, with the redefinition of some jobs and the emergence of new tasks and positions.

THE DIGITAL TRANSFORMATION OF WORK IN RETAIL INDUSTRY: A LITERATURE REVIEW

3.1 Introduction

January 2018. Walmart, the world's biggest retailer, announced it was closing over 63 Sam's Club stores and converting some of them into e-commerce fulfilment and distribution centers. This was the solution found to solve the problem of the abundance of physical stores and the lack of points of distribution needed for online purchases. However, this is not the only change implemented by Walmart. Indeed, last year, it started introducing robots in its stores. The robots scan shelves looking for out-of-stock items, missing and misplaced items, incorrect prices, and wrong or missing labels. They alert employees of errors and proved to be 50% more efficient than humans. Moreover, they can scan isles more often and three times more quickly. Then a few months ago, the company also introduced Alphabots; this robotic cart can pick and pack shoppers' online orders, automatically bringing items from storage to associates.

In Walmart stores is happening something that in the next years will appear worldwide; in fact, the increasing number of online shopping orders and the emergence of new technologies make retailers rethink their business. Repetitive tasks will be automated, making stores more efficient and freeing employees from doing them. By consequence their time will be employed helping customers and offering them a better shopping experience, and this in turn will cause a reorganization of jobs, given that there is less need of sales people but more of IT employees.

In detail, the chapter is organized as follows: the first paragraph deals with the historical effects of the introduction of technologies on employment and the major trends expected

in the new retail age. Subsequently, the chapter deals with the presentation of the main emerging jobs and their description.

3.2 Effects of technological change on labor

In the past two centuries technological developments and the automation of some activities did not eliminate the need for human labor. "Whether the technology is tractors, assembly lines, or spreadsheets, the first-order goal is to substitute mechanical power for human musculature, machine-consistency for human handiwork, and digital calculation for slow and error-prone wetware" (Autor, 2015). Therefore, automation does not necessary substitute for labor, in many cases it is intended to facilitate and complement it, by doing the most waste time activities.

However, the new era characterized by artificial intelligence, computing and robotics may be different as these technologies may replace labor on a scale not previously observed.

In the 1980's and 90's only routine tasks in manufacturing were affected by the risk of computerization, but now also non-manufacturing sectors are threatened by it, and consequently, this is likely to change the nature of work across industries and occupations (Frey and Osborne, 2013).

In this scenario workers with special skills or the right education will benefit from technologies, given their potential to augment workers' capabilities; so, these people can use technology to create and capture value. On the other hand, workers with only 'ordinary' skills and abilities are on a weak position because computers, robots, and other digital technologies are acquiring these skills and abilities at an extraordinary rate.

Indeed, computers substitute for workers in performing routine, codifiable tasks; therefore, workers that supply tasks that are complemented by automation, so those related to problem-solving skills, adaptability, and creativity, are more likely to benefit directly from automation (Autor, 2015).

Activities that are more likely to be automated are mainly predictable physical activities in manufacturing and retail trade, and those involving the collection and processing of data.

A great percentage of people in the world are employed in the retail sector, so emerging technologies will have a huge impact in this industry. In the United States 9,8% of total workforce is employed in retail, and salespersons, cashiers and stock clerks are the most

common jobs. Indeed, with the digital transformation and the increase of online sales, 15% of brick-and-mortar stores are expected to close over the next decade.

Moreover, with technological change, tasks like stocking shelves and cashier work will be automated, putting 30% to 50% of these positions at risk. Indeed, according to the Bureau of Labor Statistics, overall employment of retail sales workers is projected to increase of 2 percent from 2016 to 2026, but this percentage is lower than the average for all occupations as a consequence of online competition.

Figure 5   *Retail Sales Workers*
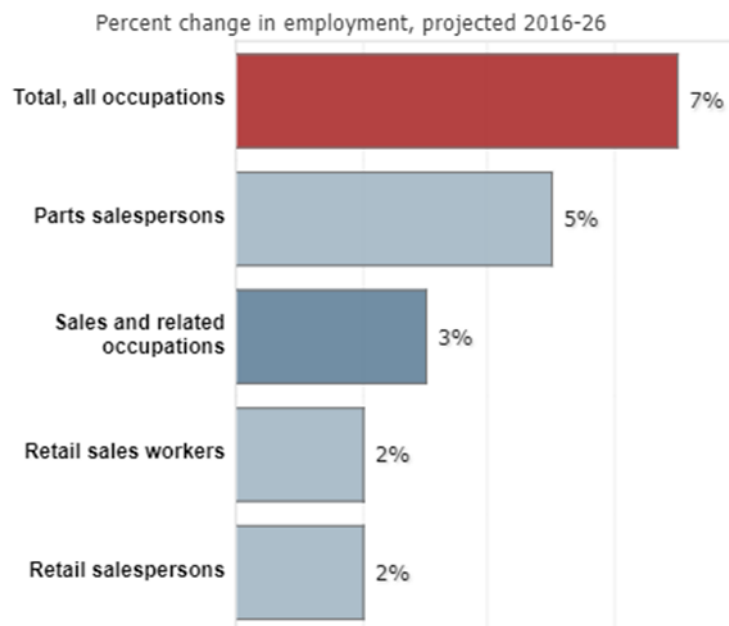
Source: U.S. Bureau of Labor Statistics

However, the pace of change will depend on the investments required to implement new technologies into stores, the cost of adopting autonomous vehicles or drones, and the future level of human workers' wages. These shifts will change the organization of companies, their business models and structure of work. Jobs will change given that people will perform activities that are complementary to the work that machines do (and vice versa) (Donnelly et al., 2017). For instance, the introduction of electronic labels let employees focus on logistics or consumer services instead of on changing weekly prices. Therefore, electronic labels do not replace the workforce, but they transform human workers and their working habits (Soutjis et al., 2017).

Moreover, the increasing use of smartphones by consumers during shopping has an impact also on the workforce. Indeed, customers use their smartphones to get information

online about the products or about the prices in other stores, receive advice from friends, family, and partners or to check social media or listen to music.

So, smartphones have an impact on retail employees in two ways: they enable consumers to perform many tasks previously performed by store assistants on their own and they make the interaction with store personnel more difficult.

Indeed, shoppers are more difficult to approach while using their smartphones and salespeople tend not to talk to them while they are engaged in other activities.

Moreover, customers rather than asking store staff for help, and so let them perform their task of helping customers, they prefer using their mobile devices to find solution to their quests such as price comparisons, checking product availability, and reading online reviews. This is done to get additional or independent information, as information provided within the store is perceived as insufficient or biased.

Furthermore, the introduction of smartphones has also complicated the way consumers interact with the store's physical environment. They move around aimlessly, ignoring signs and marketing material, giving products only passing attention (Fuentes et al., 2017).

3.3 Retail jobs dynamics

Changes going on in the retail industry will likely affect not only the physical brick-and-mortar stores, but also the workforce employed in them and the activities they do.

Indeed, traditional stores are expected to focus on customer service, as a way to defend themselves against online retailers and employees will be functional to retail transformation. They will be high-skilled, tech savvy and great product experts, who can leverage technologies to provide an engaging and more personalized customer experience.

In today stores, questions like Why is product A better than product B? Or, what does my warranty cover? And even, how does this product work? often remain unanswered or the answer does not appear sufficiently satisfactory to the customer.

So, to find more precise information many customers revert to online information, with the result that often they know more about the subject than the sales assistants themselves. But in the future brick-and-mortar stores this will not happen anymore, as employees will be well acquainted with the products they are selling, and they will have access to technological devices to get further details.

Indeed, to solve the issue, Home Depot have equipped its store associates with tablets and other devices, to quickly answer questions that customers may ask them. In other cases, companies like Hointer are developing the fully-automated store concept, in which consumers can get products' information by using the brand's app, eliminating the need of human staff (Stephens, 2014).

Other tasks like stocking shelves and checking out do not create value for customers but increase the burden of costs, making it convenient for retailers to automate or eliminate them. However, this does not mean that a large part of employees will be fired; indeed, their tasks will be redefined, and their time can be occupied by providing better service to customers and by offering a truly enjoyable and personalized in-store experience.

Sales assistants will become brand advocates, similar to what already happens in Apple stores. In fact, Apple Store employees are trained to embody Apple's culture; "the store itself, the wood tables, the products and the design aren't what makes it feel like Apple. It's the people. [..] They are the most visible and noticeable part of the store" (Langer, 2012). Indeed, Apple's employees can use the latest iPhones before consumers, get access to discounts and they feel like part of a family, with the consequence that they have become powerful brand advocates.

So, in the same way, the future store's employees will be super-users of the brand's products, aligned with its values, and co-creators who work with customers to deliver the perfect product solution; "far from being slaves to the technology, they will be the masters of it and skilled in using it to surprise and delight their customers" (Stephens, 2014). People who will fit these characteristics will be considered a unique and highly valued company asset, difficult to substitute.

Indeed, many retailers have introduced analytics to determine traffic flows and its trend over time and have provided their store employees with devices that let them receive real time stock information, be notified about the queue level, reduce their effort and be helped in delivering an enhanced customer experience. However, these new technologies require people able to leverage them, as improvements in technology always increase the demand for more skilled workers, with implications for staff recruitment, training, compensation, and evaluation (Huré et al., 2017).

Therefore, firms are training their current workforce, but adapting to these innovations could not be so easy for some older workers; for this reason, some firms are opting to

hire more millennials, who are more comfortable using technologies, but attracting and retaining digital skilled employees is difficult as many industries are looking for them.

3.4 New emerging jobs in the Retail Industry

The introduction of smart retail technologies has the effect of a New Industrial Revolution characterized by the domain of analytics, apps and robotics (Stephens, 2014), which enable major business improvements like enhancing customer experience, optimizing operations or creating new business models.

As a consequence, also the retail workforce is evolving, and the tasks performed by in-store employees are changing towards an advisory role. Indeed, consumers expect salespeople to take a shopping decision assistants role; they should deliver relevant information to the consumer and guide them during the purchase process. In this way, customers who visit the store can receive relevant information and see, touch and try products, obtaining substantial advantages compared to online customers (Huré et al., 2017).

Moreover, there is the emergence of new titles, like Chief Digital Officer, Chief Customer Officer, Digital Marketers and many others, that are the result of companies re-thinking their internal processes. Indeed, companies are hiring technology experts like software engineers, developers, marketing analysts, social media marketers, mobile retail developers and mobile experience managers to keep up with the new technology trends and the increase utilisation of mobile apps. These IT professionals work to improve the customer's in-store experience and to create tools aiming at improving the user's mobile experience.

3.4.1 Digital Marketer

Marketing in the omni-channel era aims to create a more interactive and personalized brand experience, reaching costumers throw all available channels. Consequently, traditional means like print and tv commercials have been replaced by online marketing, as consumers increasingly use smartphones, tablets, social media, and other continuously evolving media instead of the traditional ones. Criteo found that in 2015 mobile devices were responsible for more than one third of ecommerce globally, replacing tablets. Therefore, as a consequence of the increasing use of mobiles, it is important that marketing

departments create ad hoc mobile marketing campaigns based on the distribution of interactive and personalized information; in this way the business will reach a larger audience than it would be by focusing only on desktop campaigns.

Today marketers can provide targeted offers, send a relevant message at the right time with content that relates to the products already browsed or to items purchased by similar shoppers or identify sets of targeted customers defined by increasingly narrow parameters, can send coupon codes and offers to consumers' mobile devices, and deliver promotions based on user's location (Rigby, 2011), so that a tourist may get suggestions about attractions to visit because the system recognizes his current geographical position (Pantano and Priporas, 2016).

Moreover, according to Social Media Today, the average person spends roughly two hours on social media every day. Thus, in today environment possessing digital skills is crucial to reach customers and collect information about them; this also allows to reach additional information on consumers, their demographics, their perceptions, and their opinions. Facebook, Instagram and Twitter are the main social network used because they allow to target specific customers groups and helps to create word-of-mouth about a brand and product (Howells and Ertugan, 2017).

Targeted e-mail campaigns are a cost-effective way to reach new and existing customers with personalized content. However, each customer uses different types of social media and each social media channel works differently; so, there needs of people who understand those differences and know how to leverage them.

For this purpose, companies have created new positions for which have been hired people with the skills to leverage digital technologies; chief content officers take charge of content development, "data whisperers" get insights from data, community managers reply to social-media buzz, and e-commerce experts monitor online sales (Galante et al., 2013). Moreover, marketers in the digital era must possess digital skills that range from familiarity with HTML, digital design to create visual ads, video editing to create image, video or audio-based contents, and content management systems, to expertise in software like Salesforce and Oracle, useful to manage customers' interactions with a company, and SEO expertise.

Indeed, SEO expertise is the most desired skill by marketing departments. SEO stands for search engine optimization and refers to methods used to increase the probability that

websites appear on top of search engine results. This is very important because people who are looking for something on the Internet can come across the company website, if this responds to the criteria set by search engines (Mavridis and Symeonidis, 2015). In the same way, marketers need to know how to use SEO tools, useful to verify the progression of Websites traffic or conduct a keyword research.

Moreover, successful digital marketers must possess the ability to analyse huge amount of data, getting helpful insights that enable them to create tailored, relevant and engaging customer experiences. Indeed, delivering an engaging customer experience has become the main marketing objective, for which is also fundamental the knowledge of cross channel and cross platform tools to implement omnichannel strategies.

3.4.2 Chief Customer Officer

Chief Customer Officers are concerned with aligning strategy, processes and technology to address the changing customers' needs and they work to engage the customers to the brand by improving the retail experiences both online and offline.

Many companies are hiring for this position because "they are realizing the importance of reorienting and reprioritizing their business around customers" (Davis et al. 2016) even if few of them have top executives who take charge of the customer experience, despite they say to be customer-centric.

But now gaining a competitive advantage over competitors and consistently meet customers' expectations becomes even more difficult.

So, a customer-centric strategy is the solution to keeping pace with a rapidly changing environment and fulfilling shoppers' desires, with benefits in terms of reduced complaints, increase in revenues and enhanced satisfaction.

To reach a better understanding of consumers' expectations the strategy may include the observation of customers to see how they shop and think, or for instance, as in the case of Deutsche Bank, the use of company's products by every employee to truly understand their opinion.

Otherwise, in order to get helpful insights and go a step further towards the full understanding of costumer's desires, can be useful to start a co-creation process and test new prototypes with them or build online customer communities (Davis et al. 2016). This last

point is particularly important because help enhance users' engagement to the brand, increase their loyalty, commitment, trust and satisfaction, turning them into brand advocates (Brodie et al., 2013).

3.4.3 Chief Data Officer

Chief Data Officers (CDO)' role consists in helping the organization manage its data as a Corporate Asset in order to create business value. They deal with data management, analytics, data science, ethics and digital transformation (Gartner, 2018).

Indeed, data is a retailer's most potent weapon and there is need of people able to analyse the big amount of data that every day comes to the organization in order to optimize supply chains, enhance operations and understand consumers throw more accurate customer profiles. In fact, with artificial intelligence, that in retail can take the form of chatbots and personal buying assistants, data and analytics become a primary driver of business strategies. Moreover, tools like QueVision or Smart Shelves require updated information about the time of the day or consumers' willingness to pay to work (Inman and Nikolova, 2017), and there is need of data to immediately understand consumers' preferences and their current emotional state, in order to deliver a highly personalized experience.

Therefore, in recent years there has been a growing demand for analytics and data-management skills and Gartner (2016) estimates 90 percent of large organisations will have a data chief by 2019.

3.4.4 Chief Digital Officer and Chief Information Officer

The Chief Digital Officer is the executive responsible for the digital transformation of businesses and an increasing number of firms are establishing this role that is complementary to the CIO role (Benlian et al., 2016). The Chief Information Officer (CIO) is a technology expert that sets and leads the technology strategy for a company, ensuring that this fits with the broader business strategy. However, companies tend to appoint CDOs other than CIOs to spread managerial responsibilities and ensure a successful digital transformation (Horlacher, 2016), as they possess distinct expertise, which is equally relevant and needed during the digital transformation. Unlike the CIO who is an IT expertise, heads the IT function and takes responsibility for traditional IT strategy and its implementation, the CDO adds his business knowledge and is mainly responsible for the

conception and planning of the digital transformation, that concerns each area of the company, including the workforce.

CDOs' tasks tend to differ from one firm to another, but generally include "the development, refinement, and execution of an overarching digital strategy for the company and leading the required change management efforts to prepare the business for the digital era" (Benlian et al., 2016). CDO role is not about introducing basic digital capabilities anymore, it is concerned with coordinating and managing complex changes as quickly as possible.

The CDO constantly monitors emerging trends in the industry and then establishes the company's digital strategy based on innovations that are able to increase efficiency and to create a seamless customer experience. Improvements in efficiency enable employees to spend more time on personalized customer service, raising customers' satisfaction. For this purpose, sales assistants are equipped with tablet and PCs to pick up data more easily and to fulfil each individual shopper's need.

CDOs must have good knowledge of Its but especially strong skills in strategy development, change management and communication. In fact, they must be able to effectively explain the strategic aspects of the transformation process in ways that non-IT employees can easily understand, removing resistance to change and fostering a strong coordination and alignment of different functional areas (Horlacher and Hess, 2016).

In conclusion, the presence of a CDO and of a Digital Department can be determinant for the success of omnichannel strategy because they can direct the company efforts and the digital agenda towards it.

3.5 Conclusions

In the past two centuries technological developments did not eliminate the need for human labor; indeed, technology is intended to facilitate human labor, not to eliminate it. However, with the emergence of artificial intelligence, computing and robotics things may be different, and they are likely to change the nature of work across industries and occupations. However, only more repetitive tasks, like stocking shelves and checking out, will be automated or eliminated, while retail employees will primarily focus efforts on customers' satisfaction and enhanced shoppers' experience. Moreover, in this new retail era characterized by mobile connectivity, smart technologies and the emergence of advocacy and social marketing, the capabilities and skills required at employee level are

changing, moving towards big-data analytics, digital-marketing and mobile expertise (Bellaïche et al., 2013). Firms are training their workforce, but it could be a challenge for older workers to adapt to innovation, with the consequence that millennials, which are more comfortable using technologies will be preferred.

Moreover, as companies rethink their internal processes, there will be an increasing need of technology experts, with the emergence of new tasks and new titles like Chief Digital Officer, Chief Customer Officer, Digital Marketers… to keep up with the increasing need of IT professionals.

Next chapter, instead, focus on pre-existing in-store jobs, the previous skills needed to perform them, and the new skills required as a result of the retail digital transformation.

HOW RETAIL JOBS ARE EVOLVING, AND NEW SKILLS NEEDED

4.1   Introduction

Sometime in the future. Customers walk into a grocery store and they are called by name by smiling and welcoming sales assistants, thanks to facial recognition software.

As they walk through the isles they can interact with products, get personalized coupons, talk to product experts and receive instant help if they cannot find what they are looking for. Then, an automated back-room service sends out the items purchased, or a drone ships them directly at home. There is no checkout needed, the system knows what goods have been purchased, and payment is automatically deducted from the preferred account. However, to make this possible, many transformations will occur, many of them at work-force level. Today many retail positions do not require particular abilities or qualifications and are low-skills jobs. Conversely, in future stores, the level and type of skills required might change.

The chapter focuses on the skills needed in retail jobs, wondering whether the digital transformation may cause a deskilling or reskilling process, according to the opinions of authors who discussed the topic.

Moreover, the chapter continues with the principal in-store occupations, describing their roles, tasks and skills.

4.2   Retail store workforce composition

According to the Bureau of Labor Statistics, in 2017 retail salespersons and cashiers were the most common jobs in US, with respectively 4.4 million and 3.6 million of people employed, which accounted for around 9,8% of total workforce. Instead, in 2014 the retail

industry employed 17 million people in the US and 19.3 million in the 28 Member States of the European Union.

The majority of people working as sales assistants and checkout operators in Europe were women and represented over 62 per cent of workers in the sector. Even young people, in particular students, were largely employed in the sector, accounting for 22 per cent of retail jobs in Europe.

However, the retail industry suffers from the collective perception of a low-skilled occupation with limited career opportunities, so that it is often considered a short-term employment option; and the prevalence of part time and temporary workers, who are higher than in other industries, contribute to increase this negative perception. Indeed, part-time work is very common, and in most cases, part-timers are women and young people; however, often happens that they are only involuntary part-time workers and they are not satisfied with their condition.

However, from retailers' point of view, this workforce composition ensures flexible and adaptable staff scheduling, which also let employees to balance work with other responsibilities, such as caring or study (International Labour Organization, 2015).

4.3   Skills in retail jobs

"Working in retail is generally perceived as a 'low skill' occupation, with low status, low pay and limited career opportunities" (Nickson et al., 2017); however, this is not always true, given that the retail sector is not homogeneous, and the skills required can vary widely within the industry, in relation to the products sold and the type of work.

For instance, Mason and Osborne (2008), studied the electrical retail sector in the United Kingdom, that includes electrical household appliances and radio and television goods, and discovered that people hired in this field were skilled and had deep pre-existing product knowledge of electrical and electronic goods, which were fundamental to interact with customers. Indeed, in electrical retail firms, interaction with customers is a key element and sales assistants' role consists in greeting customers and offering detailed advice and information about products.

Conversely, in food retailing, sales assistants interact with customers only to answer their queries, help them or operate at the checkouts. So, they have little product knowledge and less autonomy than their counterparts in electrical retail. Moreover, employees of electrical retailing are in great majority males and hired full-time, while food retailing relies

mainly on a stable workforce working part-time and at a low pay, that is made by married woman, with primarily responsibility for child care, and school and university students.

Nickson et al. (2017), instead, focused on high-end fashion retail, coming to similar conclusions. They found out that the job was not a low-skills one and that these employees must possess the ability to sell expensive products, that is the tacit skill of understanding deep customers' needs and be able to apply product knowledge to help customers in their choices; but this implies also the ability to suggest alternative items to customers with tact and delicacy, which requires a high degree of contextual skill. Therefore, in high-end retail, work can be considered skilled, given the co-existence of soft and hard elements of skills. Indeed, the majority of interviewees, including frontline sales staff, were university educated, generally in a creative (photography and fashion) or business field, suggesting the need for knowledgeable and smart people, able to apply their education background and the soft skills acquired, on everyday work.

On the contrary, Mason and Osborne (2008) reported that in 2005, United Kingdom employees in retail sector were less well qualified than the average employee, and only a very small percentage of them had degrees or other higher education qualifications.

In addition, as demonstrated by Ikeler (2016) sales job have been subjected to a deskilling process and a downgrading of salespersons' emotional labour as it decreased in task complexity and autonomy. Emotional labor refers, according to Williams and Connell (2010) as

> "aspects of jobs that require workers to enact particular emotional states in order to manipulate clients or customers".

Salespersons in Mid20th-century department stores needed a high degree of selling skills and engaged in more varied interaction than those of 21st-century. The use of trained salesclerks was the only way to increase the sales in terms of number and size. Indeed, in the absence of branding and advertising, personalized service, which included detailed product knowledge and ability to understand the psychology of each customer, was a key success factor, able to provide differentiation and stand out from competitors.

But during the 21st-century branding and advertising were used for almost all products and all store items started to be located on the sales floor, not behind counters; these developments impacted on salespersons' job as they had less physical control over products and were less knowledgeable than before.

Indeed, contemporary full-line stores employ semi-skilled workforce, which has less in-depth knowledge but are still able to assess customers' moods, advise them individually and close final purchases. Therefore, a certain degree of emotional complexity and autonomy are still required for the job. Instead, at contemporary discounters are employed deskilled salespersons and cashiers whose tasks are limited to 'prescriptive' and 'pecuniary' performances predefined by managerial guidelines. Salespersons have little product knowledge and they do not guide customers towards purchase and they do not use persuasive selling techniques. In this case selling is routinized and mechanized and salespersons' main tasks are stocking and cleaning while interactions with customers do not involve product advising but locating items or prices. Cashiers main task is to close purchases and their job is judged on the basis of the speed in processing items rather than on the value of their transactions. Therefore, emotional labour is limited to cashiers' conversations with customers during the payment process and salespersons' mechanical indication of items and prices. So, frontline jobs have become more repetitive, mechanical, alienating, making them vulnerable to automation. The author sees in the introduction of technologies, mechanization and self-service the cause of the deskilling process affecting retail jobs (Ikeler, 2016).

However, the National Retail Federation has an opposing view and states that the skills needed for salespersons job have changed over the last decade and sales and customer service skills are more in demand today than in 2007.

Indeed, according to NRF, retail employers are looking for people versed in the art of selling, so able to build relationships, explain value, reply to objections and convince sceptical customers. Moreover, good salespeople must be able to offer the right solution to clients' requirements and even anticipate unexpressed or unconscious needs. These employees will be experts in customer service and they will know everything about what they are selling. Their role will become increasingly less about folding sweaters and more about selling them. People with an education background, which have proven communication and teamwork skills, and additional competences in organization, mathematics and multitasking are more likely to be hired (Zeller, 2017).

Figure 6   Sales associates skills: differences between 2007 and 2017
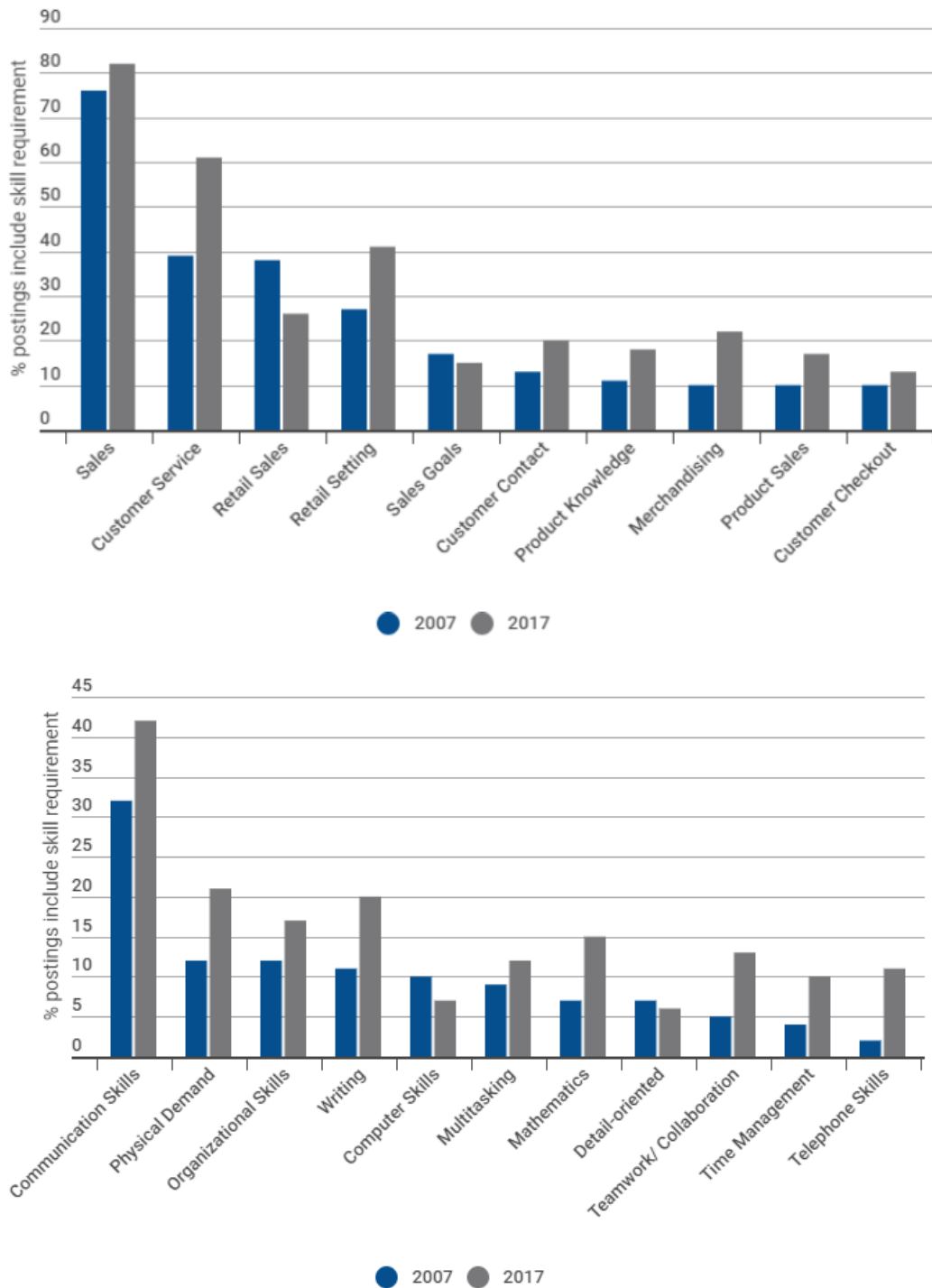
Source: National Retail Federation (2017).

Moreover, according to a research made by Bentley University in 2016, in retail, as well as in many other industries, the tendency is to hire employees suited to hybrid job positions. Hybrid jobs require skills that were not traditionally associated with that role, combining hard skills with soft skills. Hard skills refer to technical aptitude or knowledge,

while soft skills can be considered "character traits, attitudes, and behaviors, so, the intangible, nontechnical, personality-specific skills that determine one's strengths as a leader, facilitator, mediator, and negotiator" (Robles, 2012).

Employers are looking for people with business development, big data and soft skills.

Employees with business development skills have strategy, sales and relationship building capacities. They are passionate about the brand and able to communicate their enthusiasm to clients, which, in turn, are more likely to make purchases.

Moreover, Big data skills are now required in a vast range of professions, not just in data analysis, since there is the need to get helpful insights from the information acquired and apply them to business decisions. By consequence, mathematical skills, strictly connected to analytical ones, are in high demand for non-math-based roles such as marketing.

Finally, employers are increasingly looking for people who have critical thinking, are collaborative, and have strong communications and decision-making skills.

4.3.1 Sales Assistants

Sales assistant job requires communication, customer service and sales skills to help customers find what they're looking for and encourage them to buy more or to purchase specific items. Sometimes, sales assistants also operate the cash register (as in the case of the electrical retail employees described by Mason and Osborne, 2008) and in this case they must have basic accounting skills to give change and must learn how to use a cash register to deal with money and credit card transactions.

The most important skills needed for sales associates until a few years ago were POS assistance and purchase selection assistance, but specialized product knowledge and brand ambassadorship are becoming store employee's most demanded expertises.

Indeed, some retailers, in particular fashion ones, deploy frontline employees to shape the brand's value proposition and differentiate themselves from competitors. So, frontline staff shares a common look and plays a brand ambassadors' role, impersonating a look congruent with the corporate or brand image, as in the case of Abercrombie and Fitch, whose employees provide a youthful, casual, sensual American image (Pounders et al., 2014). This premeditated control of workers' appearance and physical look is called aesthetic labor. Aesthetic labor practices are common in fashion and beauty sectors and they can help in building image and creating uniqueness.

Employers look for employees with the right 'feminine' soft skills, related to having the 'right' personality, attitude and appearance and displaying a certain sense of 'style'; so, companies look for employees who "look good and sound right", so, that have these natural predispositions without acting and playing a role. In many upscale retail stores the ideal type is middle class, conventionally gendered, and white (Williams and Connell, 2010).

However, employers do not have difficulty in recruiting the right people because young students, who in the UK generally have middle-class backgrounds and, so, possess these skills related to being middle-class, are more attracted to fashion than other retail sub-sectors (Nickson et al., 2012). In fact, managers want to hire people who fit with the brand image and companies with "cool" brands are more successful at attracting workers who are highly identified with the brand because it appeals to their consumer interests (Williams and Connell, 2010).

According to Doug Stephens (2014), one of the most influential retail industry futurists, future sales associates will be required to be passionate about the brand, good listener and empathetic. They will become Brand Ambassadors, proud to represent the company and super-users of the brand products. Their primary aim will be to create a long-term relationship between customers and brand, turning a simple store visitor into a loyal customer. Moreover, sales associates will become product experts who can add value to the business (Donnelly et al., 2017). In fact, in order to afford online competitors, brick-and-mortar stores must guarantee customers the same accurate and complete product information that they can find on online retailers. If the brick-and-mortar store provides the information first, customers are more likely to purchase items directly in store, and not use it as a showroom and buy the product from other websites.

The basis to exceptional brick-and-mortar shopping experiences is outstanding shopper service and this is what salespeople are hired for.

For this reason, sales associates must demonstrate great customer service skills to deliver the best shopping experience and avoid clients' complaints. Indeed, shoppers have many ways of talking about their experience and stories of bad customer service or of clients insulted by employees may become viral in a short time, generating bad publicity for the company.

However, sales assistants are not only functional to shopping experience, they are also the means by which the omnichannel revolution takes place; by providing them with mobile devices, they are able to satisfy customers' needs more efficiently and effectively. Therefore, the shop assistants of the future need to be tech savvy to make use of in-store tools and to master the latest technologies and social platforms their customers use.

Nevertheless, they do not only need to know how to use technologies or to show customers how to connect and use the store Wi-Fi services; they must also be able to solve any connectivity issues (Hellings, 2014).

Therefore, sales assistants will become tech savvy product experts, who will perform their job with the help of technologies. Indeed, once a loyalty program customer, which generally spends five times more than a regular customer, enters a store, a mobile app will notify sales associates of his arrival to greet him personally. They will have access to his profile, his buying history, and what products he likes for enhanced shopping experience. In this way not only online retailers, but also brick-and-mortar stores can know everything about their customers (Hellings, 2014).

Moreover, thanks to technologies store associates are able to assist customers during a critical stage of the entire purchasing process: the fitting room. Customers need to get dressed several times and leave the dressing room to look for a different size, style or colour. This stage is equally frustrating for the associate, who cannot fulfil customers' requests, unless standing all the time next to the fitting room. Instead, thanks to augmented reality all this process is eliminated because customers virtually try-on clothes, supervised by the store associate that gives advices and can attend this delicate task.

Finally, technologies allow sales associates to check inventory availability on the spot, immediately knowing what items are stocked in the store inventory and where they are at any time. Indeed, sometimes happens that the customer is looking for an item but discovers that it is not available on the shelves, and so asks the sale assistant for help. This one, in turn, asks information to a superior officer or checks the inventory; but it could happen that the item stored in the inventory passes unnoticed. Then, the associate informs the customer that the item is not in stock and offers several options: it can be ordered from another store and sent to this one for pick-up, the customer can go to another store, or the customer will be informed when the item is back in stock.

So, technologies allow to save the sale, without the need of enumerating other opportunities that often make the customer annoyed and unsatisfied. In this way, sales associates will gain a higher degree of autonomy and will not need to ask a superior officer for information; they can just consult their devices, saving time and becoming more efficient. They can also choose to offer in-store discounts or items at a competitive price to avoid that customers use the store as a showroom and then decide to make the purchase online, throw another website (Hellings, 2014).

However, to make all these transformations possible is necessary to gain the support from the workforce and avoid any resistance to change. New technologies, trends and innovations can suddenly appear, requiring to unlearn the previous competences and learn new ones.

This clearly requires a considerable effort on the part of the workforce, that must demonstrate flexibility skills; but it is important that employees adapt, without freezing in the current status quo, to open the way to progress.

4.3.2 Personal Shoppers

Mobile shopping is growing fast and in 2017 North American consumers made 67% of ecommerce purchases throw mobile devices, while in Europe mobile shopping accounts for 50% but has grown of 21% compared to 2016 (Criteo, 2018).

However, choosing among a vast variety of items and last-minute discounts is not so easy, given the limited view of small smartphone screens and the high amount of time that browsing requires. So, a personal shopper app might be the right solution to make online shopping experience less stressful for many users. For example, if a client requests a pair of shoes but he has a small budget, the personal shopper can find the right products at the lowest possible cost, searching hundreds of online stores for the best deals and offers; otherwise, he proposes better alternatives to the items requested or provides personalized recommendations.

Shopper assistant apps can be divided into the ones relying on human agents and the ones deploying artificial intelligence algorithms.

The first ones establish a link between the users and professional shoppers, fashion advisors or brand/store agents. The mechanism is simple: users make shopping requests through the app and the personal shopper answers to customers' needs.

An example of this type of service is represented by Frank And Oak. Frank And Oak, the Canadian retail company, offers the service of curating collections for shoppers; customers have only to fill out a survey and then they receive up to six items which they can try on. Frank And Oak chose to use human stylists instead of making suggestions based on algorithms because sales associates can use data coming from the online customers profile as well as their in-store experience to better respond to customers' desires.

Another example is given by Shopbolt. Customers need to specify which of the five product categories they are looking for among electronics, gifts, home décor, household supplies and shoes; or they can also enter the category "something else". If they do not like the item provided by the personal shopper, this one will ask for a few more details and search again. Once the customer chooses an item, he can ask to have it shipped to a preferred location.

Therefore, throw this app experts give assistance and advices to shoppers saving their time, money and effort.

Moreover, there is another app of this type, whose name is Personal Shopper by Shop Your Way. This app offers the same service of the previous one but chooses goods from the group of Sears retailer companies, including Sears.com, Kmart.com, and mygofer.com. (Timokhina, 2017).

Also the retail giant Walmart has embraced this new frontier of technology, launching a service throw which customers can summon their own personal shopper with a simple text. Paying $50 a month, personal shoppers pick up the items required and then ship them to shoppers the same day or the next (Jones, 2018).

Finally, a similar service is also offered by Rinascente. Indeed, the company has recently set up "Rinascente on demand", the service of instant messaging that makes shopping easier. All you need is to write a message on WhatsApp, telling what cloth seen on a magazine you would like to buy, and a Personal shopper will find it for you. Then you can choose to buy the garment and receive it directly at home.

Personal shopping advice is mostly seen as a high-end service but today thanks to new technologies that help to quickly learn customers' preferences and deliver them the right products online and offline, every customer can benefit of it.

Furthermore, there are also apps relying both on AI algorithms and on human agents, in order to guarantee fast and efficient services, while keeping the human touch.

One example is Mezi. This app, founded in 2015, provides personal travel assistance, helping consumers plan and book trips. Travelers can simply send messages with their requests for flights, hotels or restaurants, and Mezi handles the reservations. This app deploys artificial intelligence to get the most important information from users' requests and to remember their preferences, making the experience more relevant and efficient in the future, but the final process is performed by real people, whose expertise is used to deliver recommendations and advices (Mezi, 2018).

Many retail companies and major fashion brands have adopted personal shopper apps. The reason is that the presence of a personal shopper can strengthen brand loyalty and create a better engagement with consumers, improving customer retention (Timokhina, 2017). Therefore, this role is not an entry-level job, as the service is mainly used by firms for competitive differentiation. Personal shoppers are industry experts and knowledgeable advisors; they are very careful in listening and understanding the deep customers' desires to properly match the right products to their requests. Despite the big progress made with technologies and the introduction of an algorithm able to keep track of trends and tastes, the presence of humans is fundamental because they alone can deeply understand needs and desires (Jawharkar, 2017). Indeed, a software will not reach a full level of understanding of customers and cannot give the same care, attention and counselling provided by a shop assistant.

For this reason, and for creating a better and tailored shopping experience, this job has not been automated, but has evolved to pick up the pace of change.

Thus, sales skills, written and verbal communication skills and organizational skills, to manage time schedules and offer an exceptional service to all customers, are essential to be successful in this role. Moreover, computer skills and a knowledge of basic Microsoft Office programs are essential to browse websites, looking for the best deals and offers, and to chat with users throw the app.

The final aim is to create a client base of loyal shoppers who are satisfied with their shopping experience and make frequent purchases; so, smart industry experts, who are sensitive to clients' needs, able to deliver a customer-centric experience and familiar with technologies must be hired for this role.

4.3.3 Cashiers

The cashier job generally involves processing purchases or return and exchange of merchandise, managing queues, giving change and receipts, counting money at the beginning and end of each shift, and answering customer requests. People in this role need to have communication and customer service skills to answer customers' questions and basic accounting skills to give change. Moreover, the job requires a great deal of patience to remain calm and friendly when interacting with customers. They typically use cash registers, scanners or calculators to process payments.

However, the no-cashier approach has evolved over the past decade, taking different connotations (Ismail, 2017), and has determined a radical change in terms of tasks performed and skills required for the job.

There can be self-checkout kiosks where customers scan, bag and pay for items on their own; in other cases, customers use portable scanner devices to scan items as they walk throw the store and then pay at dedicated self-checkout lanes.

Some stores have adopted the mobile self-checkout method. Shoppers can use the store app on their own mobile devices to scan items and then they walk to a dedicated aisle to complete their purchase and checkout. Walmart, Sam's Club, and Kroger's have implemented this technology that allows to reduce the queue at checkouts, as the time to scan items at exit is eliminated.

But the use of retail apps can be taken a step further, with "Just walk out technology". The customers can pick up the items they need and walk out of the store. When they leave, they are automatically charged for what they have bought, with "payments, offers, discounts and coupons applied through a cloud-based system directly connected to the shopper's mobile device" (Ismail, 2017). This is what happens in the Amazon Go store. It has no cashiers or checkout lines.

Moreover, there is also the possibility to buy online and pick up in store. Customers pressed for time can perform the payment online, and only come to the store to collect the purchases. So, associates only have to bag the items.

But what all these Cashier-less stores have in common, despite the differences among them, is the fact that there is no need for people to stand behind checkout stands anymore. Indeed, in the next five to ten years, the cashier job will transform into self-checkout host job. Self-checkout hosts will oversee several kiosks or mobile device checkout systems

and intervene if there are customers in need. So, self-checkout can free up workers to do other higher value-added activities able to influence customers satisfaction, like moving around the store to help customers, answering questions or bagging items for customers in the case of the buy online and pick up in store method (Forshaw and Khan, 2017). Thus, the introduction of technologies will have a strong impact on the cashier job. The cashiers of the future will have technology skills to diagnose problems and help customers use new technologies.

However, automation in grocery stores could have a significant impact on staffing needs, with a reduction in the number of working hours, which makes employers more reluctant to make full-time hires.

Moreover, the Bureau of Labor Statistics forecasts a 1 percent drop in the number of cashiers between 2016 and 2026, that is to say a loss of 30,600 positions out of around 3.5 million. Maybe this is not a dramatic fall, but in any case, it represents a decrease in spite of a growing retail sector (Bureau of Labor Statistics, 2016).

4.4 Conclusions

The retail transformation is responsible not only for the creation of new jobs, as seen in the previous chapter, but also for the change of pre-existing ones. In particular, in this chapter we focus on the most common in-store jobs, that are Personal Shopper, Sales Assistant and Cashier ones.

These jobs are commonly considered low skilled ones, but the capabilities needed for each of them have been subjected to a modification. Indeed, hard skills and soft skills are now both required by employers, as they are looking for people with technical skills but also more social and emotional skills to fill these hybrid jobs positions.

Moreover, customer experience is the most important factor to take into consideration and Sales Assistants and Cashiers roles will be increasingly directed towards delivering a seamless shopping experience. Indeed, they are hired to delight costumers, strengthen brand loyalty and create a better engagement with consumers. At this purpose, they will become industry experts and knowledgeable advisors, also to tackle online competition. Some customers use the traditional stores as a showroom and then buy the product from other websites, but if the brick-and-mortar store provides the information first, customers are more likely to purchase items directly in store.

Moreover, retail workers will become tech savvy, able to solve any connectivity issue and to help customers with technology. They will be equipped with their own mobile devices to answer customer requests or solve any issue by themselves without the need to ask a superior officer, so gaining in autonomy.

REFERENCES

Amazon (2018). Amazon Go. [accessed online https://www.amazon.it/].

Autor, D.H. (2015). Why Are There Still So Many Jobs? The History and Future of Workplace Automation. *Journal of Economic Perspectives, Volume 29, Number 3, Pages 3–30.*

Artz, G. M., & Stone, K. E. (2012). Revisiting Walmart's Impact on Iowa Small-Town Retail: 25 Years Later. *Economic Development Quarterly, 26(4), 298–310.*

Azuma, R. T. (1997). Survey of Augmented Reality, Teleoperators and Virtual Environments, 6, 355–385.

Baker, J., Levy, M., Grewal, D. (1992). An Experimental Approach to Making Retail Store Environment Decisions. *Journal of Retailing, 68(Winter), 445–460.*

Baker, J., Ashill, N., Amer, N., Diab, E. (2018). The internet dilemma: An exploratory study of luxury firms' usage of internet-based technologies. *Journal of Retailing and Consumer Services 41, 37–47.*

Beatty, S. E., Ferrell, E. M. (1998). Impulse buying: Modelling its precursors. *Journal of Retailing, 74(2), 169–191.*

Bellaïche, J., Chassaing, T., Kapadia, S. (2013). The Omnichannel Opportunity for Retailers [accessed online www.bcg.com/publications/2013/marketing-sales-omni-channel-opportunity-retailers.aspx].

Benlian, A., Haffke, I., Kalgovas, B. (2016). The Role of the CIO and the CDO in an Organization's Digital Transformation Completed Research Paper. *Thirty Seventh International Conference on Information Systems, Dublin 2016.*

Bentley University. (2016). Future-Proof Your Career why you need left and right brain skills for tomorrow's jobs. A Bentley University-commissioned analysis of labor market data.

Boston Consulting Group, BCG. (2018). Accelerating digital innovation in retail. *The Boston Consulting Group.*

Boston Consulting Group, BCG. (2018). Four Digital Enablers: Bringing Technology into the Retail Store. [accessed online: https://www.bcg.com/publications/2015/technology-strategy-four-digital-enablers-bringing-technology-into-retail-store.aspx].

Brodie, R. J., Ilic, A., Juric, B., Hollebeek, L. (2013). Consumer engagement in a virtual brand community: An exploratory analysis. *Journal of Business Research, 66(1), 105–114.*

Bureau of Labor Statistics. (2016). Occupational Outlook Handbook. Cashiers [accessed online https://www.bls.gov/ooh/sales/cashiers.htm#tab-6].

Bureau of Labor Statistics. (2016). Occupational Outlook Handbook. Retail Sales Workers. [accessed online https://www.bls.gov/ooh/sales/retail-sales-workers.htm#tab-6].

Criteo (2015). Hold the Smartphone: Criteo Report Reveals Consumers Increasingly Comfortable with Mobile Purchases. [accessed online https://www.criteo.com/news/press-releases/2015/03/hold-the-smartphone-criteo-report-reveals-consumers-increasingly-comfortable-with-mobile-purchases/].

Criteo (2018). Mobile Commerce Growth 2017: +13% Sales YoY, 67% of Sales Happen In-App & More. [accessed online https://www.criteo.com/insights/mobile-commerce-q4-2017/].

Davis, C., Kazaks, A., Pulido, A. (2016). Why your company needs a Chief Customer Officer [accessed online www.forbes.com/sites/mckinsey/2016/10/12/why-your-company-needs-a-chief-customer-officer/#5cf63f9249d7].

Donnelly, C. et al., (2017). Shaping the Future of Retail for Consumer Industries-A World Economic Forum project in collaboration with Accenture.

Đurđević, N., Labus, A., Bogdanović, Z., Despotović, M. (2017). Internet of things in marketing and retail. *International Journal of Advances in Computer Science & Its Applications Volume 6: Issue 3.*

Esmark, C. L., Noble, S. M., Breazeale, M. J. (2017). I'll Be Watching You: Shoppers' Reactions to Perceptions of Being Watched by Employees. *Journal of Retailing, 93(3), 336–349.*

Forshaw, T., Khan, N. (2017). New Skills Now: Inclusion in The Digital Economy. *Accenture*.

Frey, C. B., Osborne, M. A. (2013). The future of employment: how susceptible are jobs to computerisation? *Technological Forecasting and Social Change, 114, 254-280.*

Galante, N., Moret, C., Said, R. (2013). Building capabilities in digital marketing and sales: Imperatives for consumer companies. *Perspectives on retail and consumer goods.*

Galvez, J.F., Mejuto, J.C. Simal-Gandara, J. (2018). Future challenges on the use of blockchain for food traceability analysis, *Trends in Analytical Chemistry*, *107, 222-232.*

Gartner. (2018). The Chief Data Officer's Guide to an AI Strategy. [accessed online: https://www.gartner.com/smarterwithgartner/the-chief-data-officers-guide-to-an-ai-strategy/].

Gilbert, S. (2013). Built for Success: The Story of Amazon.com. *Creative Paperbacks*, 1 edition.

Goundry-Smith, S. (2011). Examining the role of new technology in pharmacy: now and in the future, *The Pharmaceutical Journal* [accessed online https://www.pharmaceutical-journal.com/examining-the-role-of-new-technology-in-pharmacy-now-and-in-the-future/11134174.article?firstPass=false].

Grewal, D., Roggeveen, A. L., Nordfält, J. (2017). The Future of Retailing. *Journal of Retailing, 93(1), 1–6.*

Hellings, P. (2014). Meet the shop assistant of the future. [accessed online https://www.theguardian.com/media-network/media-network-blog/2014/aug/15/shop-assistant-future-technology-retail-connectivity].

Horlacher, A. (2016). Co-creating value-the dyadic CDO-CIO relationship during the digital transformation. *Research-in-Progress Papers, 1.*

Horlacher, A., Hess, T. (2016). What Does a Chief Digital Officer Do? Managerial Tasks and Roles of a New C-level Position in the Context of Digital Transformation. *49th Hawaii International Conference on System Sciences.*

Howells, K. Ertugan, A. (2017). Applying fuzzy logic for sentiment analysis of social media network data in marketing. *Procedia Computer Science 120, 664–670.*

Huang, Y., Leu, M. C., Mazumder, J., Donmez, A. (2015). Additive Manufacturing: Current State, Future Potential, Gaps and Needs, and Recommendations, *Journal of Manufacturing Science and Engineering, 137, 1–10.*

Huré, E., Picot-Coupey, K., Ackermann, C.L. (2017). Understanding omni-channel shopping value: A mixed-method study. *Journal of Retailing and Consumer Services 39 (2017) 314–330.*

Hwangbo, H., Kim, Y. S., Cha, K. J. (2017). Use of the Smart Store for Persuasive Marketing and Immersive Customer Experiences: A Case Study of Korean Apparel Enterprise, *Mobile Information Systems, 17.*

Ikeler, P. (2016). Deskilling emotional labour: evidence from department store retail. *Work, employment and society 2016, Vol. 30(6) 966 –983.*

Inman, J. J., Nikolova, H. (2017). Shopper-Facing Retail Technology: A Retailer Adoption Decision Framework Incorporating Shopper Attitudes and Privacy Concerns. *Journal of Retailing, 93(1), 7–28.*

International Labour Organization. (2015). Employment relationships in retail commerce and their impact on decent work and competitiveness. *Issues paper for discussion at the Global Dialogue Forum on Employment Relationships in Retail Commerce: Their Impact on Decent Work and Competitiveness.*

Ismail, N. (2017). The evolution into a cashier-less future: the mobile retail app. [accessed online https://www.information-age.com/evolution-cashier-less-future-mobile-retail-app-123466493/].

Jawharkar, H. (2017). Five jobs that will transform the future of retail [accessed online www.forbes.com/sites/forbescommunicationscouncil/2017/07/27/five-jobs-that-will-transform-the-future-of-retail/#54a1af643057].

Jones, C. (2018). Walmart shoppers can summon a personal shopper with a text - and for $50 a month. [accessed online https://eu.usatoday.com/story/money/2018/05/31/walmart-personal-shoppers-amazon-rent-runway-text/661170002/].

Kahn, B. E. (2017). Using Visual Design to Improve Customer Perceptions of Online Assortments. *Journal of Retailing, 93(1), 29–42.*

Kaplan, A., Haenlein, M. (2019). Siri, Siri, in my hand: Who's the fairest in the land? On the interpretations, illustrations, and implications of artificial intelligence. *Business Horizons*, *62 (1), 15-25.*

Krieg, K., (2013). Sam Walton: Founder of the Walmart Empire (Essential Lives), *Essential Library.*

Kringel, George N. (1992). U.S. Patent No. 5083765. Washington, DC: U.S. Patent and Trademark Office.

Langer, J. (2012). 5 Ways to Humanize your Brand [accessed online www.huffing-tonpost.com/jenna-langer/social-media-brands_b_1586470.html?guccounter=1].

Lazaris, C., Vrechopoulos, A., (2014). From Multichannel to "Omnichannel" Retailing: Review of the Literature and Calls for Research. *2nd International Conference on Contemporary Marketing Issues.*

Lee, I., Lee, K. (2015). The Internet of Things (IoT): Applications, investments, and challenges for enterprises. *Business Horizons, 58, 431-440.*

Madakam, S., Ramaswamy, R., Tripathi, S. (2015). Internet of Things (IoT): A Literature Review, *Journal of Computer and Communications, 3 (3) 164–173.*

Mason, J., Osborne M. (2008) Business strategies, work organisation and low pay in United Kingdom retail. In: Lloyd C, Mason G and Mayhew K (eds) Low Wage Work in the United Kingdom. *New York: Russell Sage Foundation, 131–68.*

Mavridis, T., Symeonidis, A. L. (2015). Identifying valid search engine ranking factors in a Web 2.0 and Web 3.0 context for building efficient SEO mechanisms. *Engineering Applications of Artificial Intelligence 41, 75–91.*

Mezi (2018). American Express Acquires Mezi. [accessed online https://about.american-express.com/press-release/american-express-acquires-mezi].

Muldoon, James R. (2007). U.S. Patent No. 20070198347. Washington, DC: U.S. Patent and Trademark Office.

Nickson, D., Price, R., Baxter-Reid, H., Hurrell S. (2017). Skill requirements in retail work: the case of high-end fashion retailing. *Work, employment and society, 31(4) 692 –708.*

Otnes, C., McGrath, M. A. (2001). Perceptions and realities of male shopping behavior, *Journal of Retailing, 77, 111–137.*

Pantano, E., Naccarato, G. (2010). Entertainment in retailing: The influences of advanced technologies. *Journal of Retailing and Consumer Services, 17(3), 200–204.*

Pantano, E., Priporas, C. (2016). Computers in Human Behavior the effect of mobile retailing on consumers' purchasing experiences: A dynamic perspective. *Computers in Human Behavior, 61, 548–555.*

Pantano, E., Viassone, M. (2014). Demand pull and technology push perspective in technology-based innovations for the points of sale: The retailers evaluation. *Journal of Retailing and Consumer Services, 21(1), 43–47.*

Pantano, E., Viassone, M. (2015). Engaging consumers on new integrated multichannel retail settings: Challenges for retailers. *Journal of Retailing and Consumer Services, 25, 106–114.*

Parasuraman, A. (2000). Technology Readiness Index (Tri): A Multiple-Item Scale to Measure Readiness to Embrace New Technologies. *Journal of Service Research, 2(4), 307–320.*

Pol, J. M. Van De, Geljon, J. G., Belitser, S. V, Frederix, G. W. J., Hövels, A. M., & Bouvy, M. L. (2018). Research in Social and Administrative Pharmacy Pharmacy in transition: a work sampling study of community pharmacists using smartphone technology. *Research in Social and Administrative Pharmacy*, 15(1), 70–76.

Poncin, I., Ben Mimoun, M. S. (2014). The impact of "e-atmospherics" on physical stores. *Journal of Retailing and Consumer Services, 21(5), 851–859.*

Pounders, K. C., Babin, B. J., Close, A. J. (2014). All the same to me: outcomes of aesthetic labor performed by frontline service providers. *Journal of the Academy of Marketing Science, 43, 670-693.*

Probst, L., Frideres, L., Pedersen, B. (2015). Traceability across the Value Chain: Advanced Tracking systems. *Business Innovation Observatory, European Commission.*

Rigby, D. (2011). The future of shopping. *Harvard Business Review*. [accessed online hbr.org/2011/12/the-future-of-shopping].

Robles, M.M. (2012). Executive Perceptions of the Top 10 Soft Skills Needed in Today's Workplace. *Business Communication Quarterly 75(4) 453 –465*.

Roy, S. K., Balaji, M. S., Quazi, A., Quaddus, M. (2018). Predictors of customer acceptance of and resistance to smart technologies in the retail sector. *Journal of Retailing and Consumer Services, 42, 147–160.*

Saghiri, S., Wilding, R. (2016). The journey toward omnichannel retailing. *Logistics and Transport Focus, December 2016 issue, 30 - 32.*

Schneider, Howard (1992). U.S. Patent No. US5083638 A. Washington, DC: U.S. Patent and Trademark Office.

Sinha, P. K., Kar, S. K. (2007). Insights into the Growth of New Retail Formats in India. IIMA Working Papers, Indian Institute of Management Ahmedabad, Research and Publication Department.

Smith, H. J., Milberg, S. J., Burke, S. J., Hall, O. N. (1996). Privacy: Concerns Organizational. *MIS Quarterly, 20(2), 167–196.*

Social Media Today. (2017). How Much Time Do People Spend on Social Media? [accessed online https://www.socialmediatoday.com/marketing/how-much-time-do-people-spend-social-media-infographic].

Sopadjieva, E., Dholakia, U., Benjamin, B. (2017). A Study of 46,000 Shoppers Shows That Omnichannel Retailing Works. *Harvard Business Review*. [accessed online hbr.org/2017/01/a-study-of-46000-shoppers-shows-that-omnichannel-retailing-works].

Soutjisa, B., Cochoya, F., Hagbergb, J. (2017). An ethnography of Electronic Shelf Labels: The resisted digitalization of prices in contemporary supermarkets. *Journal of Retailing and Consumer Services 39 (2017) 296–304.*

Stephens, D. (2014). The Future of Retail: Death of A Salesman. [accessed online://www.retailprophet.com/the-future-of-retail-death-of-a-salesman/].

Stephens, D. (2018). To Save Retail, Let It Die. [accessed online http://www.retail-prophet.com/to-save-retail-let-it-die/].

Timokhina, V. (2017). Best Practices: Personal Shopper Apps Development. [accessed online https://easternpeak.com/blog/personal-shopper-apps-development/].

Tuttle, B. (2017). 4 Futuristic Features Every Retail Store Will Have by 2025. [accessed online http://time.com/money/5024470/the-store-of-the-future/].

Weitz, B. A. Whitfield, M. B. (2010). Trends in U.S. Retailing. In Krafft, M., Mantrala, M. Retailing in the 21st century-current and future trends. (pp 83-99). *Springer*.

Wileman, A., Jary, M. (1997). Retail Power Plays: From Trading to Brand Leadership, Chapter 4, *MACMILLAN Business*.

Williams, C., Connell, C. (2010). "Looking Good and Sounding Right": Aesthetic Labor and Social Inequality in the Retail Industry. *Work and Occupations 37(3) 349–377*.

Wünderlich, N., Heinonen, K., Ostrom, A., Patricio, L., Sousa, R., Voss, C., and Lemmink, J. (2015). "Futurizing" smart service: implications for service researchers and managers. *Journal of Services Marketing, Vol. 29 Iss 6/7 pp. 442 – 447*.

Yoo, W., Yu, E., Jung, J. (2018) Drone delivery: Factors affecting the public's attitude and intention to adopt, *Telematics and Informatics, 35 (6)*.

Zeller, A. (2017). How the retail sales associate role has changed over the last decade-National Retail Federation. [accessed online https://nrf.com/blog/how-retail-sales-associate-role-has-changed-over-last-decade].

Zorthian, J. (2017). Nordstrom's New Store Won't Sell any Clothes but Will Have a Bar Stocked with Beer and Wine [accessed online http://time.com/money/4935968/nordstrom-is-opening-a-store-that-doesnt-sell-clothes/].