The Impact of Digital Technologies on Innovations in Retail Business Models

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by

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EXECUTIVE SUMMARY

The journey to business success in the retail industry is neither straightforward nor even. It is a journey fraught with difficulties, obstacles and obstructions that arise from the interplay of several factors and elements that, taken together, render the selection of the correct course intricate and arduous. Not all retailers can stay the correct course in the face of external forces and heightening competitive pressures. However, there are those retailers who have successfully taken advantage of the changes happening in the customers' shopping behavior and in the retail industry as a whole.

Innovation in technology, both inside the retail stores and in the hands of customers, is one of those external forces that impact the retail industry and is also the primary focus of this study. This study lists examples of retailers and of recent developments in marketing and technology in retailing that transform the way retail business has been done. Through this study, the reader, potentially retail store or retail chain manager, will explore the topic of retail business model innovation evidenced by cases of retail companies, such as Walmart, Tesco, Safeway, Target, Burberry and other.

The role of technology is discussed in these cases and also separately with an outlook to those future technologies that are poised to grab the attention of retailers. Examples of those technologies include, but are not limited to, location-based applications, targeted and customized mobile promotions, mobile point-of-sale, personal shopping assistants and radio frequency identification technology. The study describes how these technologies might affect customer behavior and change the role performed by the store personnel. The combination of these examples sets the stage for a look into the near future of retailing.

Moreover, these examples convey an interesting insight into current and future technology trends. Future trends that are going to be characterized by technology creating stronger connections between customers and retailers. Connections that will increasingly be made across several channels and mediums that customers feel comfortable with and that retailers can utilize to increase both their profitability and competitiveness.

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CHAPTER 1 - INTRODUCTION

In order to meet evolving and shifting customer expectations and demands, retailers need to get to grips with multi-channel shopping behavior of today's shoppers. Shoppers the world over, armed with smartphones, tablets and virtually "unrestrained" access to the Internet from the comfort of their homes, at work, in stores or on the move, now have the upper hand over retailers and demand shopping experiences anywhere, anytime, and through any sales channel. In this introductory chapter, the background of the study and problem formulation are the main topics complemented by highlighting the contribution and objectives of this study and definition of terms used in it.

1.1. Background of the Study

The world of retailing continues to change rapidly as interaction between the physical and the digital world opens up new business opportunities and challenges that were hard to imagine just decade ago. After the dot-com crash in 2000, the idea of extending retail operations to the digital world and combining several sales channels into one seamless shopping experience for the customers may not have been approached with great enthusiasm (Chaffey, 2009; Rigby, 2011). Yet, several years later, the concept of multi-channel retailing ushers in new, bold possibilities for reimagining retail.

The retail industry is being driven by a new, dynamic, global transformation that further adds to the general competitive nature of the retail industry. This transformation has been set in motion by greater adoption of the Internet by the general public on a global scale which has forced retailers to develop e-commerce strategies and incorporate the multi-channel approach into their business models (Geyskens et al., 2002). Another contributing factor is the rising sales and penetration of smartphones and tablets worldwide that enable customers to stay connected to the Internet even outside of their homes or workplaces. Indeed, total annual global shipments of smartphones exceeded those of PCs for the first time in 2011 (Canalys, 2011). Furthermore, the shipments of smartphones are forecast to outnumber the shipments of feature phones for the first time in 2013 (IDC, 2013). As prices of smartphones continue to fall and cheaper models are being introduced in emerging markets, they are becoming an increasingly attractive option for customers in both developed and developing countries. With regard to tablets, the situation is very similar. As a matter of fact, the growth of the global tablet market has exceeded

expectations and predictions despite ongoing economic troubles in certain parts of the world (IDC, 2012). Customers' needs and shopping patterns have been changing as a result (Verhoef et al., 2007). According to a report published by Bain (2012, p.3), "*mobile digital devices and social networks are revolutionizing how consumers shop and what they expect, and how retailers operate*".

Other contributing factors are the increasing number of global population and purchasing power of people, especially middle-class people, living both in developed and developing countries. Nowadays, consumers enjoy, and perhaps are even inundated, by a wide selection of services, products, brands, shopping choices and shopping channels in the form of legacy bricks-and-mortar stores, flagship stores, department stores, catalogue shopping, TV shopping, on-line shopping, mobile shopping and other online shopping electronic systems (PwC, 2012).

1.2. Technology Connects Retailers to Customers

The rapid speed of technology development and rising adoption of mobile digital devices on a global scale, such as smartphones and tablets, have a profound transforming impact on consumer behavior and retail businesses at large (Bain, 2012; Nielsen, 2013). Accenture (2013 a, p.3), in its Technology Vision annual series, supports this claim. Technology is part and parcel of every aspect of business today and "*serves as a primary source of market differentiation, business growth, and profitability*." Nowadays, keeping pace with technological developments and innovations, and putting technology successfully to use play a decisive role for businesses, retailers included. Mobile digital technologies, for instance, help create and provide targeted ads, new on-the-go services, and engage the customer. Relationships between customers and retailers are thus extended beyond the physical store into the digital sphere. Retailers contribute and are an inseparable part of new digital connections among customers themselves by creating and participating in discussions on social media.

Apart from mobile digital technologies, some other technological innovations introduced in the retail industry include Quick Response (QR) codes, electronic price tags, digital advertising displays, self-check-out systems, personal selling assistants, smart kiosks, and an overall interconnection of all of these innovations with social media platforms and retailers' customized platforms and applications (Krafft & Mantrala, 2010).

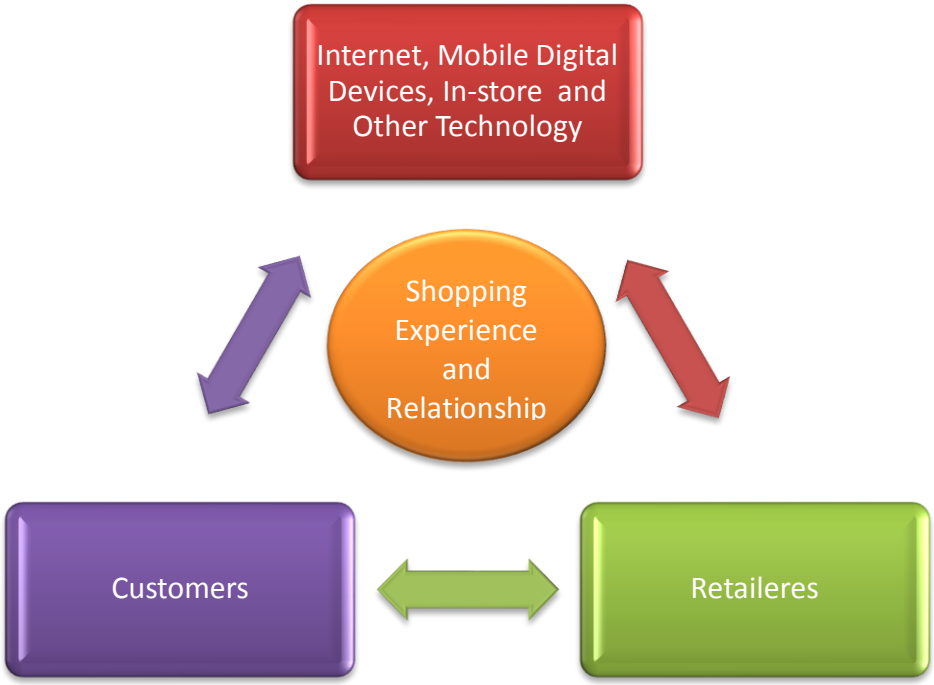

Figure 1: Interrelationship among Technology, Customers and Retailers. Source: Own Figure

1.3. Technology Opens up New Data Sources

All these technological innovations, platforms and applications present a tremendous potential in the form of access to previously untapped sources of data. Data that now can be collected, e.g. at the point of sale (POS), and analyzed to obtain a more complete view of the customer on the one hand and to improve and enrich the overall customer experience on the other hand.

Moreover, customers are not anymore just "customers". They are content creators, marketers and advertisers (eMarketer, 2012 b; Accenture, 2013 a). They blog and chat about products with their friends, colleagues, followers while spreading word-of-mouth on-line. They check and contribute to product review websites, as well as to retailers own websites and social media sites by expressing their likes, dislikes and recommendations. They advocate quality products purchased and service received on one hand while denigrating brands and companies that do not live up to their promises (Javadi et al., 2012; Accenture, 2013 a). Mobile digital technologies enable this and much more anywhere, anytime. The option to instantaneously post experiences on social media sites and let others comment on those posts alters consumer behavior with respect to staying informed, collaboration, interaction, entertainment, and maintaining overall awareness. It also changes how consumers perceive of and react

to ads. Accenture (2013 a, p.10) identifies earned media as the most trusted form of advertising among customers. If retailers can take advantage of this trend of open and unfettered communication taking place on the Internet, it will, inevitably, put retailers in a better position to formulate up-to-date business decisions in the areas of merchandising and inventory planning, product and service pricing, marketing (on- and off-line) and personal targeting. By maintaining integrated communications across both physical and virtual channels, retailers can use insight from digital channels to improve service in the store (Accenture, 2013 a). This ushers in the onset of big data and analytics in the retail industry. It is commonly known that data drives business and big data analytics can help retailers develop deeper consumer insights and customize offerings, both off- an on-line, grounded on past consumer browse behavior, transactions, and interactions while reducing marketing costs, increasing messaging optimization and maximizing overall marketing performance (Epsilon, 2012; ShopperTrak, 2012). On top of that, big data of digital devices mean that retailers can monitor customer behaviors much more closely, and in real time. This takes customer relationship management and targeted marketing to unprecedented levels. By mining big data, retailers have a stronger platform to better manage existing relationships and start new ones.

Tracking on-line word-of-mouth brings along a new opportunity for retailers in the form of being able to react quickly to what people are saying about them and structuring an adequate response (Accenture, 2013 a). To put it simply, it is time for retailers to reimagine their costumer engagement strategies as there are now more data sources to be tapped for insightful information on consumers than ever before. It is only a question of readiness and skillfulness on the part of retailers to understand and unlock the value of data collected about consumers across several channels (Deloitte, 2013). By merging disparate sources of data together in one location (customer database), retailers can obtain an all-encompassing view of their customers to better understand their needs and to introduce appropriate communication strategies (Epsilon, 2012). A lack of understanding about consumer behavior may not only undermine retailer's position in the market but also lead to internal misconceptions and wrong conclusions. This may, perhaps not that surprisingly, be rooted in retailers' inability to cope effectively with the surfeit of data available from numerous channels. Information overload on the part of some retailers may thus present a competitive disadvantage (Accenture, 2013 b).

1.4. Multi-Channel Approach Evolves into Omni-Channel

As customer demands are evolving ever faster, businesses, and retailers in particular, need to stay abreast in order to remain relevant to shoppers by providing them with seamless, engaging, reliable and trustworthy shopping experiences across several shopping channels and at each customer touch point. Combining different shopping channels and selling across channels is no longer a question of whether or not retailers should do it. Being active across several shopping channels has been identified as an absolute necessity in order to satisfy existing customers, attract new customers while, simultaneously, gaining and maintaining lasting competitive advantage (Ebeltoft Group, 2012). The complexity of the retail marketplace itself forces retailers to adopt a multi-channel stand in order to improve on the products and services they offer. The approach of cross channel retail strategy has been termed multi-channel retailing (Berman & Thelen, 2004) with omni-channel retailing that builds upon it (PwC, 2012). Berman and Thelen (2004, p.147) argue that retailers can benefit from multi-channel retailing by growing their customer base, market share, and total sales. On the other hand, each retail channel creates competitive opportunities, challenges and different cross channel priorities. This means that being a multi-channel retailer is a strategically and operationally demanding undertaking that requires substantial planning and a wise allocation of resources and investments. Thus, each channel requires different strategy, approach and infrastructure that must all unite in one integrated system that can answer and deliver on customers' demands along with the required development of new services, applications and business models. Retailers need to break down internal barriers in the form of a siloed approach to each channel and customer segment and create a unified consumer strategy across all channels to start integrated customer interactions and to avoid customer confusion. Both PwC (2012) and Accenture (2013 a) promote omni-channel retailing as an approach towards greater collaboration among retailers' internal departments and strengthened brand image. Shared departmental goals focused around enhancing the customer experience and the customer lifetime value will produce more consistent brand messaging and enhanced shopping experience across multiple touch points and channels.

Omni-channel retailing also means unrestricted access to information about customers to anyone who needs it real-time. Sharing of information across channels to identify those where customers are most comfortable interacting with the retailer will create a portfolio of channels where the customers will

receive additional value through relevant, up-to-date, targeted and real-time messaging. Offering customers a promotional message based on their current situation and the channel they found themselves using at a specific time has a higher likelihood of creating a satisfied customer (Epsilon, 2012). Omni-channel retailing is thus about introducing unconventional thinking, innovative solutions and services, and revolutionizing the shopping experience across all channels through the use of modern technologies and big data analytics. It is an approach that transcends multi-channel retailing, to connect the web, mobile, and bricks-and-mortar channels into a truly seamless customer experience (McKinsey, 2011; iProspect, 2013; Griffiths, 2013). Consistently delivering on the brand promise and enabling seamless transition between channels create omni-channel shopping experiences for the customer while driving engagement, purchase, and loyalty (Bain, 2012).

Customers' lifestyles, preferences, and ways of shopping change rapidly. They are adopting shrewder and savvier approaches to their purchase decisions. Moreover, customers today have little time to spare. They want instant gratification, e.g. in the form of digital loyalty points, digital coupons or other rewards that can be immediately redeemed (Epsilon, 2012).

Customers are multitasking, e.g. using mobile digital devices while watching TV which leads to accessing multiple streams of information at the same time (Accenture, 2013 a). This is yet another manifestation of changing consumer behavior which could be termed as "second screen habits" or a simultaneous use of mobile digital devices and other, more traditional, media such as TV (eMarketer, 2012 a). This, undoubtedly, puts retailers under considerable strain as they must get a deeper understanding of changing consumer behavior and ongoing trends around the world that affect their industry while, at the same time, devising sustainable and workable retailing strategies to fend off competitors. Moreover, ongoing alteration of marketing approaches, operations, and human resource management strategies are necessary (Krafft & Mantrala, 2010).

The cumulative result of the above mentioned topics is a change in customers' purchase behavior both in the traditional, "old-fashioned" off-line world of retail and in the more "modern" on-line retail world of the 21st century. Both of these worlds are being connected by multi-channel retailing that presents a tremendous upside potential in mature and developing markets (Ebeltoft Group, 2012).

1.5. Research Problem Statement

As has been reasoned above, technology advancements and innovations present a transforming impact on the retail industry through a change in consumer behavior. Customers, the world over, have been quick at adopting new digital mobile technologies enabling access to the Internet 24/7. Digital mobile technologies bring the retail store inside customers' homes or rather their devices.

Despite hard economic times, customer demands have not let up. Customers seek time efficiency, avoidance of crowds and queues, convenience and flexibility when searching for products that would satisfy their needs and wishes while striking the best possible deal, the biggest bang-for-the-buck, and avoiding disappointment (e.g. from empty shelves or rude shop assistants), i.e. gaining the best possible value from every purchase through the use of modern technologies (Karayanni, 2003). A new wave of consumerism is thus underway. A new era where customers have an upper hand over retailers as they can quickly search the Internet for product and service related information and price-compare retailers' offerings (Shankar et al., 2011). Customers are price shopping and, therefore, are more diligent in their purchasing, with the Internet seen as an efficient vehicle to foster that behavior. Access to the Internet (currently over 2.4 billion people are on-line; Internet World Stats, 2012) has, indisputably, shifted the balance of power in favor of customers opening the door to information treasure troves (Geissler & Zinkhan, 1998). Mobile digital technologies elevate the position of customers to an even higher level by enabling instant on-line search.

The store experience, however, continues to play an important role as some customers still, and most likely always will, savor the feel of the physical product and personal interaction with shop assistants (Wolf et al. 2008). Besides, the traditional shopping experience of physically going to a store is a source of relaxation, entertainment, and presents an opportunity to socialize for many customers who do not think of on-line shopping as a time-saving alternative or in terms of convenience (Kaufman-Scarborough & Lindquist, 2002).

Customers are changing the rules of doing business and retailers must adapt accordingly. Retailers, therefore, need to meet shifting customer demands both on-line and in the physical stores through the introduction of relevant innovative solutions, and the integration of on-line and off-line shopping experiences. They need to maximize share gain, keep customers happy, and at the same time look to get

a greater share of wallet. The customer experience must, however, remain in the forefront for every retailer as customer expectations grow each year and, more crucially, the customer experience may also hold the key to maintaining the competitive advantage derived from a business model innovation; topic discussed later.

As will be argued later, the increasing penetration of the Internet and rising adoption of mobile digital devices are global trends with consequential implications for retailers in each market and country. Retailers, therefore, are compelled to change their traditional business models. Retailers need new strategies, structures, processes and tools to deliver customer experiences across all channels. They are literally obliged to incorporate social and mobile channels into their strategies and prove the value of physical stores to maintain business in the face of on-line pure plays such as Amazon and eBay while being smart about it in terms of invested capital. Many levers will have to be pulled to incentivize customers to visit physical stores and to shop more with the ultimate goal of retaining and acquiring more buyers.

Getting up-to-speed on new technology might be an impediment. Taking an innovate approach and making investments for the future by leveraging retail heritage and current active customer base might be an advantage. Retailers can draw on gained “understanding” of customers who frequent physical stores to better serve customers on-line. Ultimately, it is all about listening to ever-changing customers, being present where they are, translating their needs via technology, and fostering a seamless, vibrant and robust multi-channel experience.

The research problem may therefore be summarized as follows:

The impact of digital technologies on innovations in retail business models.

This study sets to address the following research questions:

1. Can innovations in retail business model lead to a sustained competitive advantage?
2. Do new technologies have the potential to influence the introduction of completely new retail formats?
3. What are some of the key technologies and trends that have the potential to change the way we shop in retail stores in the future?

1.6. Contributions of the Study

This study sets to provide contributions to the area of retail business models through creating a link between customer behavior and technological innovations (mobile digital technologies in particular) by taking a holistic view of current and future trends that affect, directly and indirectly, the retail industry. The study offers a more comprehensive understanding of these trends, how they interact and produce implications for the retail industry. The study draws on extensive review of extant literature, both academic and private-sector research, and best practice examples in retailing.

The study investigates the unprecedented impact of increasing adoption of the Internet and digital technologies on retail business models. While most retailers embrace the multi-channel concept characterized by interacting with current and prospective customers across several channels, others tend to stay loyal to the bricks-and-mortar concept. Both groups of retailers, however, have creating a rewarding customer experience, customer retention, and loyalty as their ultimate goal which requires a shopper-centric frame of mind.

The retail business model outlines how each retailer creates value for its customers, how it competes in a specific marketplace defined by unrelenting change and intense competition. The model consists of one or more retail formats which are coupled with and supported by retail activities, retail governance mechanisms, and the interdependencies among these three elements (Zott & Amit, 2010). Multi-channel retailers require more retail formats with specific activities and governance mechanisms but cohesiveness and synergy have to be maintained in order to consistently deliver on customers' expectations.

The growth of the Internet and mobile digital devices in the hands of shoppers has been driving transformation and innovation of business models in the retail landscape (Padgett & Mulvey, 2007). This leads to innovations in, for instance, methods of payment that retailers provide to customers in order to increase convenience and speed up the check-out process (Mirabella, 2011; KPMG, 2011, Rudolph et al., 2012; Ankeny, 2012). An innovative retail business model may also outline how value is created for targeted customers through the use of mobile coupons that are delivered to their smartphones. Customers, who opt in to receive promotional messages and incentives from specific retailers, can then redeem them at the cash register and obtain savings, loyalty points and/or special rewards (Cuddeford-

Jones, 2011; eMarketer, 2013). These, and many other, examples highlight how dozens of pieces of the retail business fit together to create value for customers and revenue for retailers and their partners. By continuously pinpointing the means by which retailers create and re-distribute value in the face of outside pressures (e.g. the Internet and mobile digital devices) and by adopting a systemic and holistic thinking, innovative business models come to life with linkages among formats, governance, and activities ceaselessly updated (Magretta, 2002; Zott & Amit, 2010). It is this determined and focused weaving together of interdependent activities that is the essence of the business model design. At this point, it is worthwhile mentioning that innovation in retail business models tends to shift the thinking from solely focusing on "products" sold to "services" provided that enrich the store and shopping experience while making it harder for others to replicate the business model (Zott & Amit, 2012).

1.7. Objectives of the Study

Technological developments are potential drivers of innovations in retail business models that affect the retail industry from the outside and that may lead to the design of new ways of creating and distributing value (Padgett & Mulvey, 2007; Sood & Tellis, 2010). Moreover, Meuter et al. (2005) reason that new business models, based on multiple channels and self-service technologies, are created as a result of information and communication technology permeating businesses which is at the center of this study.

To sum up, the objectives of this study are to:

1. Introduce and explain the domain of business models to the reader, potentially retail store and retail chain managers;
2. Relate that domain to examples of retail business model innovations carried out by selected retail companies;
3. Identify and describe those digital technologies that present retailers with business opportunities and customers with enhanced shopping experiences in physical stores.

1.8. Definition of Terms

The term **big data** refers to the continuous increase in the volume of internal and external data that are available either in a structured or unstructured form (Deloitte, 2012). In terms of volume, velocity and variety, the term big data refers to larger data volumes, from various sources, than a given organization

is accustomed to processing by traditional database technology while processing happens real-time or near real-time (Capgemini, 2012).

Most authors agree that a business model articulates a firm's value proposition, its sources of revenue, the resources used to extract rents, and the governance mechanism that links firm's stakeholders. Zott & Amit (2010, p.219) define the **business model** as "*depicting the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities*". A retail business model articulates then how retailers create value for their customers and appropriate value from the markets for themselves and their partners. **Business strategy** is a concept that tends to be mistakenly confused with the concept of the business model. Strategy, however, refers to the choice of business model through which the firm will compete in the marketplace (Casadesus-Masanell & Ricart, 2009, p.2).

Various sources define the terms "customer" and "consumer" differently. For the purposes of this study, **customer** is the person who buys goods or services from a shop or business but does not necessarily consume them. **Consumer**, on the other hand, is a person who purchases goods and services for personal use (Oxford Dictionaries, 2010). **Consumer trends** is a term referred to at several points in this study, therefore "*habits or behaviors currently prevalent among consumers of goods or services*" is what shall be understood under the term (Business Dictionary, 2013). Nevertheless, consumer trends track more than simply what people buy and how much they spend. Data collected on trends may also include information such as how consumers use a product and how they communicate about a brand with their social network.

Customer experience includes every point of contact at which the customer interacts with the business, product, or service. Customer experience management represents a business strategy designed to manage the customer experience (Grewal et al., 2009).

There are many different types, styles, and models of **mobile digital devices** available on the market today. In general, they could be classified as portable battery-powered devices with various features. For the purposes of this study, mobile digital devices are defined as those portable, wireless devices with a display screen with touch input or a miniature keyboard that can access the Internet and enable data transfer and exchange between the device and the Internet, as well as among various other devices. They range from feature phones, smartphones, personal digital assistants (PDAs), netbooks, ultrabooks,

tablets to e-book readers with much overlap between them (Harris, 2009; Dictionary.com, 2013). Smartphones and tablets are then in the center of this study.

The importance of paper and digital coupons for retailers is discussed in connection to mobile marketing. **Mobile marketing** is the two-way or multi-way communication and promotion of an offer between a firm and its customers using a mobile medium, device or technology (Shankar et al., 2010).

In the section dedicated to the description of new technologies impacting on the retail industry, the term **mobile payments** is used to describe "*payments made or enabled through digital mobility technologies, via handheld devices, with or without the use of mobile telecommunications networks. These payments are digital financial transactions, although not necessarily linked to financial institutions or banks*" (Dinez et al., 2011, p.5).

Multi-channel customer management is the design, deployment, coordination, and evaluation

of channels through which firms and customers interact, with the goal of enhancing customer value through effective customer acquisition, retention, and development (Neslin et al., 2006).

By **multi-channel retailing** shall be understood the delivery of customer propositions via multiple channels – brick-and-mortar stores, catalogs, newspapers, magazines and other prints, kiosks, mobile digital devices, and/or web sites – with at least some degree of channel integration in management, information and service, i.e. in a consistent and coordinated way across all channels (Chatterjee, 2010; Jones, 2007). **Omni-channel retailing** is then a higher level of multi-channel retailing (PwC, 2012). Defining aspects are channel-agnostic, relevance-based, and customer-centric (Bain, 2012). Omni-channel retailing enables a seamless brand and shopping experiences across all channels (iProspect, 2013). A **channel** is, therefore, a means, a medium and/or a contact point through which the customer and the firm interact (Neslin et al., 2006).

Online shopping behavior, a.k.a. online buying behavior and Internet shopping/buying behavior, refers to the process of purchasing products or services via the Internet (Javadi et al., 2012, p.81). It is in general very similar to the traditional buying behavior where the customer goes through several stages in the buying process starting with recognizing the need, conducting on-line product search, selecting a product that satisfies the need, placing an order and ending with the evaluation of the purchase decision. In stark contrast to the traditional buying behavior stands, however, the multitude of

information sources the customer may consult and the speed with which the customer finds sought information and/or receives tips from other customers who have previously purchased the product in question.

Self-service technologies, e.g. in the form of mobile point-of-sale and self-service product scanners; are defined as "technological interfaces that enable customers to produce a service independent of direct service employee involvement" (Meuter et al. 2000, p.50).

Connected to multi-channel retailing and shopping across channels is **showrooming**. It is a term used to describe situations where customers research products both on-line and off-line using their mobile digital devices in the process. **Showrooms** are those physical stores that customers visit to test products out, using five human senses where possible, to subsequently buy products on-line for better prices and/or with additional product-related benefits. Retailers can fight off showrooming, among others, by matching prices of online-only retailers (PR Newswire, 2012; Lutz, 2012; Bain, 2012).

A **social network** is the label attached to any consumer–initiated communication with other consumers who share an interest and use the World Wide Web as a platform for creating a community (Quinton & Harridge-March, 2010, p.59). The purpose of a social network could also be briefly summarized as creating, managing and growing social interactions, connections, relationships and contacts (José Carlos Martins & Soares, 2011).

CHAPTER 2 - METHODOLOGY

The following section of this study aims to succinctly and concisely elucidate the methodological approach adopted to research the specific issue of digital technologies and their impact on innovation in retail business models.

2.1. The Influence of Rapid Technology Innovation on the Chosen Research Method and Literature Sources Used

The topic under investigation, as is evidenced in the following sections, is undergoing constant and very rapid change. Technological innovations that hit the global customer markets just a few years ago might already be out-of-date today and frowned upon by technology-savvy customers. A case in point is the rapid speed of innovation spearheaded by Apple and embodied in Apple's innovative products, such as iPhones and iPads, with redesigned product versions and new features introduced almost every year; a pace that has been slowing down though as this approach starts to backfire (Shaughnessy, 2013).

Another example of how fast technological innovations are developing and penetrating customer markets is smartphone shipments that are forecast to outstrip feature phone shipments for the first time this year (IDC, 2013).

The two, aforementioned examples, plus those described in ensuing sections, only corroborate the difficulty of adopting an appropriate research method on the one hand, and selecting relevant, valid, and up-to-date sources of information on the other hand.

In this regard, this study primarily draws on case studies published and discussed by the academia and available in various on-line academic journals. Other important source of cases are market research reports prepared by global consulting companies and market research agencies that are available to general public on the Internet. In addition, news articles written by respected or globally renowned on-line news agencies, newspapers, bloggers and contributors have been tapped in order to further enrich and contribute to the quality of this study and to increase the number of both pertinent company cases and technology examples considered.

The combination of several sources of information, apart from relevancy, richness and validity, introduced in this study is also due to the limitation of academia in terms of following current and, perhaps even more importantly, future technology innovation trends. The academic papers referenced in this study provide, in the author's point of view, only a limited, incomplete, and often outdated picture of technology innovations and their impact on both the changing customer shopping behavior and the retail industry. Therefore, the results of market research studies carried out by several global consulting companies and market research agencies facilitate the formation of a more complete picture. Lastly, information from books on the topic of retail, selected news agencies and contributors has been referenced to finalize the total picture, i.e. this study.

The following figure depicts the main sources of information that have been tapped for the purposes of this study.

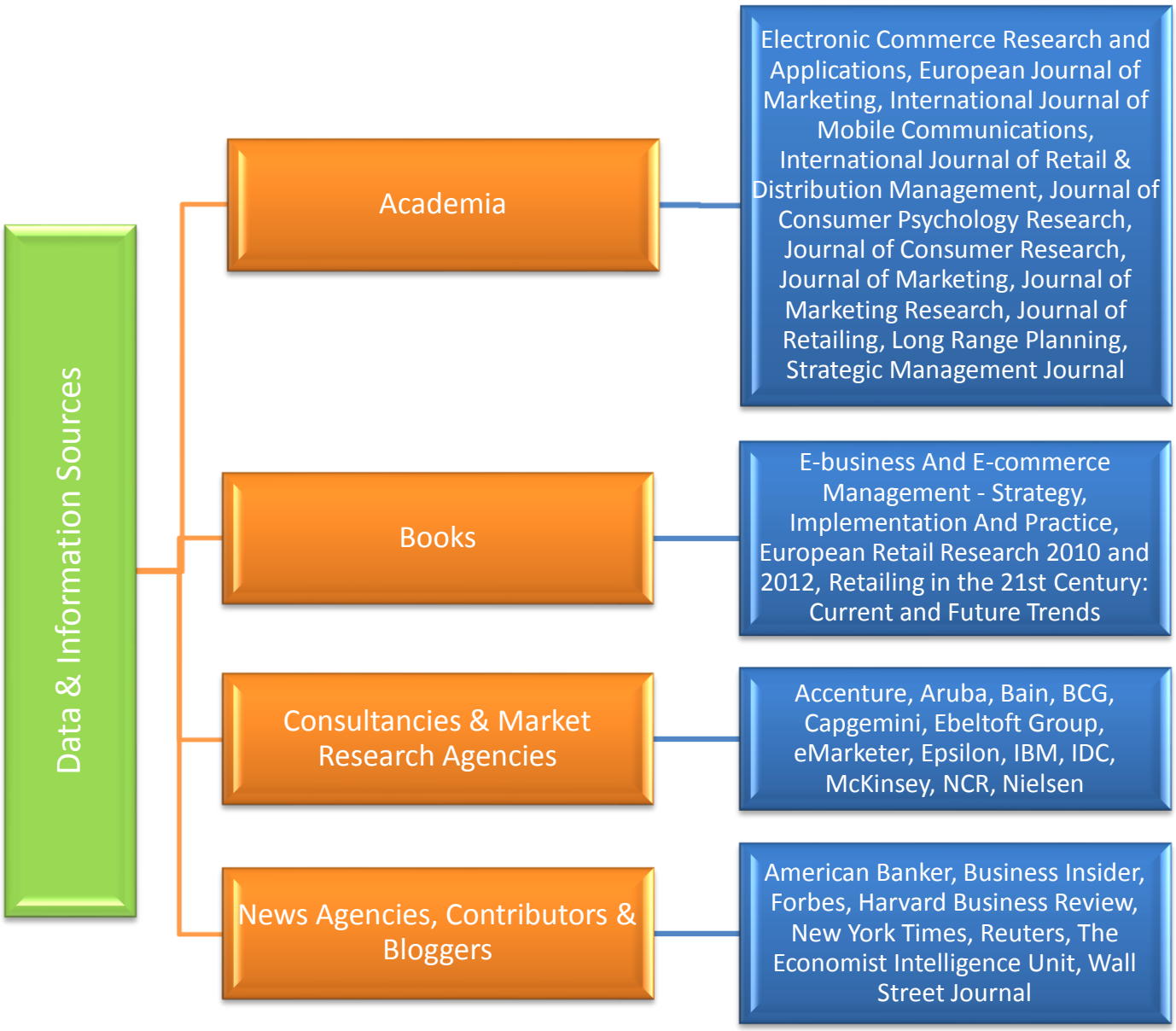

Figure 2: Data & Information Sources Used in this Study. Source: Own Figure

2.2. Case Study as a Research Method

The research method adopted for this study is based on a multiple-cases approach where institutions (retail companies), groups (customers, consumers, shoppers, technology users), and trends (shopping trends) are at the center of the study. Cross-sectional quantitative and qualitative data, in the form of published reports, transcripts of interviews, news, etc. have been used to create the cases (Aaltio & Heilmann, 2010; Gillham, 2010).

The sheerness of information used and multiple cases presented reflect the complexity of the issue under investigation and its transcending, as well as rather far-reaching implications. Furthermore, as no one kind of either an information source or case is likely to be sufficient to describe the investigated topic, more evidence has been presented and more cases created to ease this issue. In this respect, one may argue that using multiple cases in one study suggests that the study lacks a clear objective. Nevertheless, the three primary objectives, as outlined in section 1.4, articulate the intention of the author to introduce a rather general and superficial discussion of business models based, however, on specific cases of retail companies and on what role technology plays and will play in the future retail industry.

Consequently, an emergent research design characterizes the approach to the study together with inductive theorizing. In other words, the initial input for this study was the author's existing knowledge of a group of retail companies that introduced innovative approaches to the way they have been doing business with technology playing either a fundamental or minor, but still important role. This has led the author to the discovery of relevant technology innovations and technology trends that transform the shopping behavior of customers on a global scale. Subsequently, the issue to be investigated has been formulated and fitting theory chosen. This clearly highlights that theory formation was neither a starting point nor an objective of the study. Hence, the whole study process can be characterized as fundamentally practical in its nature and discovery driven. The latter term insinuates that the author has been in a position of a learner who applies open-mindedness to the discovery process rather than focus and subjectivity to give meaning to discovered information. In other words, the author moves through the research process from developing understanding of the specific examples and information to general conceptions about the reality as the following figure shows.

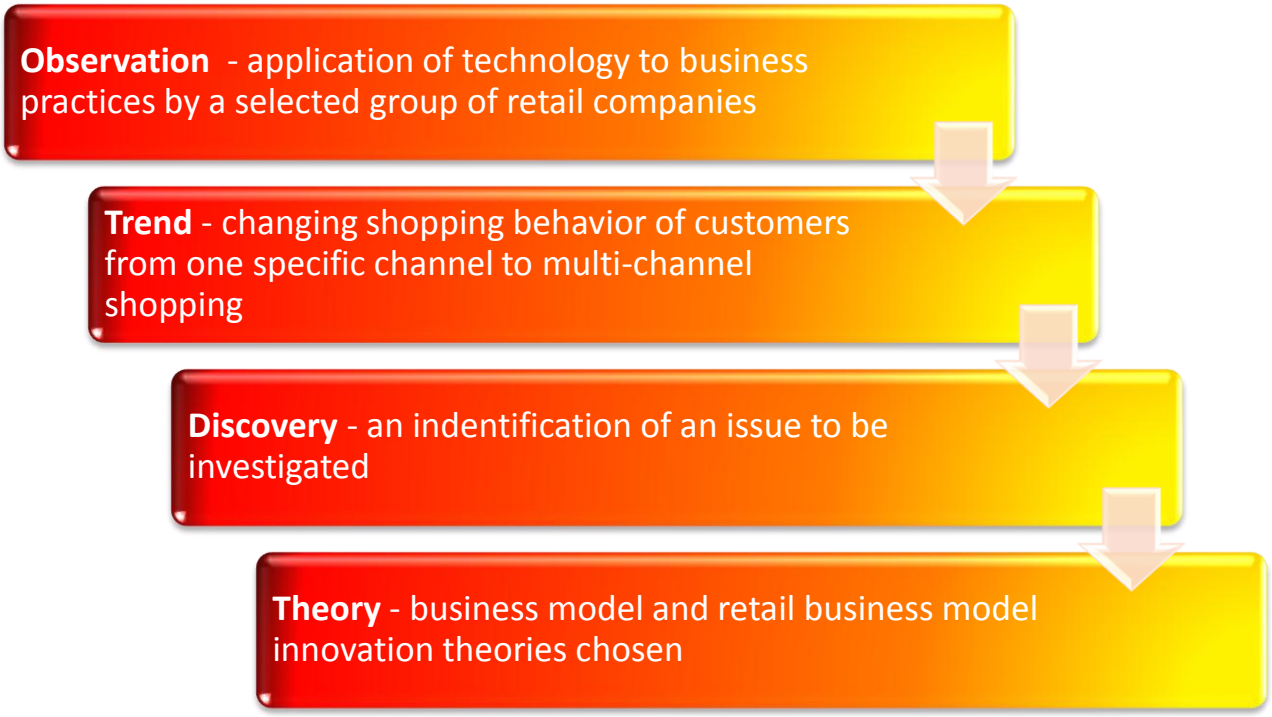

Figure 3: Emergent, Inductive Approach in This Study. Source: Own Figure

2.3. The Question of Reliability of On-Line Sources of Information

It goes without saying that relying primarily on information available on the Internet and blindly accepting it without employing scrutiny and objective judgment might be detrimental to any study and degrade its quality to the utmost bottom of reliability and validity. The Internet is, without any doubt, almost an infinite source of information. Information that is easy, convenient and fast to access and utilize. Nevertheless, as the Internet becomes open to more people all around the world, the global Internet population now represents 2.4 billion people (Internet World Stats, 2012), so increases the amount of information and data to search through. According to Eaton et al. (2012), as much as 90% of the data in the world today have been created in just the last two years even though the Internet has already been around for over two decades. This only substantiates the caution that needs to be adopted when building upon information that is freely available on the Internet as the quality may vary substantially.

Therefore, every on-line source referenced in this study has been treated with caution, objectivity, and checked for reliability. Moreover, even if some of the sources used might not exactly specify the name of

the author or his/her professional background, the company, agency or newspaper's name, reputation and global reach behind the publication provide a verifiable indication of reliability and validity.

In this regard, the subsequent guidelines of the University of British Columbia (2012) on evaluating on-line sources of information have been followed, such as:

- Author or source: author's name, organization and purpose of the website;
- Accuracy: clear indication of sources used, e.g. footnotes or description of tables and figures;
- Currency: date of publication, date of last edit, frequency of updates;
- Objectivity: no advertising related to article's content; style of language used;
- Coverage: page not being under re-construction; no content missing;
- Purpose: reason for the website's existence, target audience, facts or opinions.

In consequence, each on-line source accessed and referenced in this study has been scrutinized in accordance with these six elements. Hence, the author considers those sources to be reliable, accurate, objective, and relevant for the purposes of this study.

2.4. Limitations and Further Research

There are several limitations that, arguably, taken together diminish the quality of this study. Nevertheless, discussion of one primary limitation follows.

As this study is based purely on the analysis of secondary data published on the Internet, primary data collection method in the form of an on-line self-completion questionnaire coupled with face-to-face interviews would be beneficial to the study. The proposed questionnaire is part of the Appendix section together with questions that could be asked during the face-to-face interviews. The questionnaire would be sent out to a targeted group of customers who frequent a particular retail store. The group would be selected using, for instance, customer loyalty data or retail card membership data. The interviews would be carried out with retail stores management representatives who have a decision making authority in terms of sales channels selection or retail technology adoption. Subsequently, a second round of interviews with managers would be carried out during which they would be confronted with the results of the quantitative study. Moreover, a comparison between what managers have initially stated and what retail store customers have answered would be prepared to create a discussion about those topics where managers' opinions are in accordance with those of customers and, vice versa, where both

groups' opinions diverge. Carrying out such a comparative research process might present the managers with interesting topics of and insights into customers thinking about multi-channel shopping behavior and the use of in-store technology.

Therefore, further research would enrich the study by introducing both quantitative and qualitative elements and by informing retailers about both the disparities and synergies between customers' perceptions towards the physical retail store and the managers' view of customers' expectations.

The following figure outlines the process of future research.

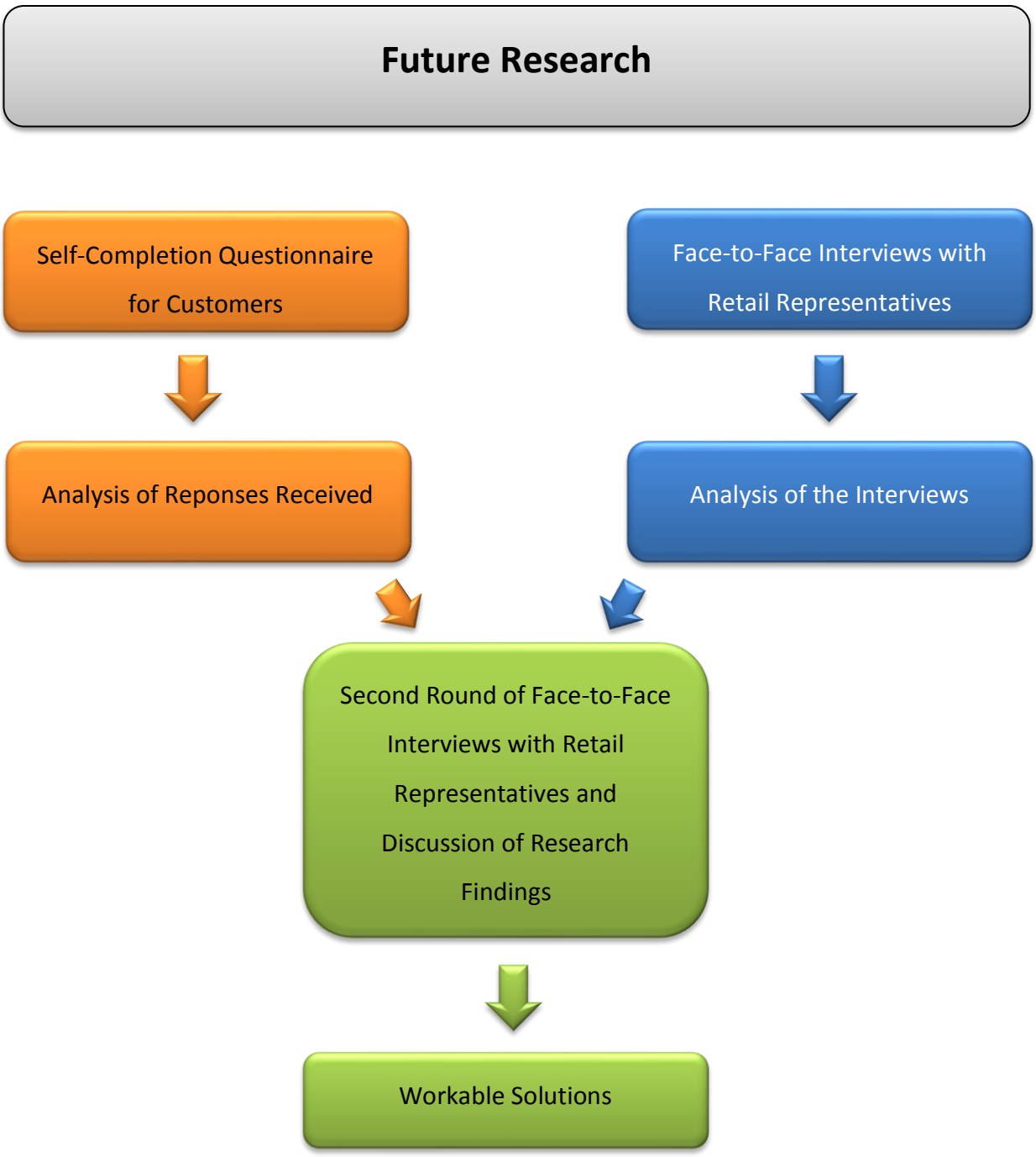

Figure 4: Future Research Outline. Source: Own Figure

CHAPTER 3 – LITERATURE REVIEW

This chapter's main focus is on review of the extant literature about business models and the chapter is structured as follows. In the first part, various approaches that have been advanced in the literature are first discussed in general. Subsequently, the second part presents the topic of business model innovation.

3.1. Business Model

A solid business model is vitally important for the success of each company irrespective of its size, products or services it sells or an industry sector the company competes in. Developing a clear idea of a business model is just as important step for a new venture as it is for an established market player (Zott & Amit, 2010). Rethinking a business model that has been in place for years and that is now challenged by external market forces is even a greater undertaking due to people's inherent inertia and propensity to cherish the status quo or "it-has-always-been-done-this-way" mindset (Zott & Amit, 2010, p.217; Chesbrough, 2010).

Success of the current business model may render managers reluctant to change the logic of how value is created and appropriated. Nevertheless, past success does not necessarily translate into future profitability (Debruyne et al., 2010). As time passes, markets change, customer expectations shift (usually towards higher expectations) and companies ought to keep pace. This is, however, easier said than done since prior investments may limit the company's flexibility to make significant changes to its prevailing logic of value creation and appropriation. Therefore, to introduce change into commonly accepted company's thinking about value, what it means to customers, partners and the company itself, can be met with a great deal of reluctance and opposition (Padgett & Mulvey, 2007).

Solid business models elevate some companies to such a position where they surpass their competitors by offering greater value to a common group of customers. Similar or even identical products may be available on the market but a certain distinguishing feature sways customers to buy one over the other. Some customers may ascribe greater value to post-purchase services such as delivery options and service terms. Other customers, however, ascribe more importance to the product price, brand, packaging, convenience and store atmosphere. Therefore, every business model must specify what the customer values are and how the company delivers the perceived value. To put it differently, the

business model tells the story of how the company is going to earn money through selling its offerings to targeted customers (Magretta, 2002).

Zott & Amit (2010) further argue that a company's business model is a set of interdependent activities that not only allows the company to create value for its customers but also to appropriate a share of that value to its value chain partners. Thus, the business model also covers the aspect of partnerships and value networks that the company is part of and how cooperation is structured within networks. Governance of information flows, resources and goods exchanges is another relevant element of the business model. Casadesus-Masanell & Ricart (2009) take the notion of business model governance into consideration but group it together with the company's policies and assets under a common theme of *choices* the company's managers make and the *consequences* derived from these choices.

Business Model	Magretta (2002)	Zott & Amit (2010)	Casadesus-Masanell & Ricart (2009)
Views on Business Models	Who is the customer and what does the costumer value? What is the underlying economic logic that explains how we can deliver value to customers at an appropriate cost? The business model refers to the logic by which the organization earns money.	A business model depicts the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities.	The logic of the firm, the way it operates and how it creates value for its stakeholders.

Table 1: Views on Business Models. Source: Own Table

Taken together, the authors emphasize the continuous interactions among the activities, components, and elements of the business model. Consequently, business model is a well-specified system of interdependent structures, activities, and processes and is geared toward total value creation for all

parties involved by employing an intertwined set of activities within the company and among its customers and partners. The greater the total value created, the greater the value the company can appropriate to its partners and customers while capturing a greater share for itself and strengthening its bargaining power within the value chain.

No company can stay in business long-term without realizing value for its current and prospective customers and, at the same time, receiving sufficient amount of money in return. Consequently, a company's business model exploits an identified business opportunity while also clarifying how the company is going to create value and generate profits by selling its products or services at an appropriate cost to its customers. This is where the company's customer value proposition plays a decisive role because it turns on an insight about value (Magretta, 2002; Johnson et al., 2008). Each company needs to be clear of how it creates value for its customers by helping them solve their problems in a given situation and doing it better than its competitors. If the company fully grasps the dimensions of the customer's problem, it can offer a solution and design an offering superior to that of its competitors. The more effective the company's offering is at resolving the customer's problem, the greater the likelihood it will resonate with a larger proportion of customers who are experiencing similar problems and who, until now, have not found a suitable solution in the market (Johnson et al., 2008). Such targeted customer value proposition is the essence of the company's business model with crucial implications for its ability to stay competitive through creating and capturing unique value in the marketplace (Zott & Amit, 2010).

There may be several profitable companies in each market sector but there are surely those that are more profitable than the others. What distinguishes them from the rest of the pack? Could it be a successful business model that represents a more profitable way of doing business that sets them apart? Could it also be that some business models create completely new ways of doing business? Magretta (2002, p.87) reasons it could by initiating, for instance, process innovations in terms of product or service delivery that resonate with a specific group of customers and that become the new, future standard.

Redesigning a company's processes involves a fundamentally different business model supported by resources and a variety of either internal or external capabilities (Zott & Amit, 2010). The company might be lacking some capabilities that some of its value chain partners could provide. If the capabilities are not of crucial importance to the company, a decision should be made about which external partner can

deliver optimal performance. In some cases, even entire key activities, such as product development, can be outsourced to value chain partners (Hippel & Katz, 2002). Nonetheless, outsourced activities still remain a central part of the company's business model. Ultimately, synergies and links within the value chain are created and relationships between the company and its partners are strengthened. This is also how value gets appropriated while the company successively becomes embedded in its multiple networks of suppliers, partners and customers (Zott & Amit, 2010). As a result, other companies may be slow to adjust to new market realties that were started off by the redesign of the company's processes in the first place. Other companies may find it tough to replicate and internalize the new processes set in place by the innovative company that constantly rethinks its business model (Johnson et al., 2008). Thus, a successful business model creates a sustainable long-term competitive advantage and, optimally, is unique and hard to copy. Nevertheless, every business model requires constant refinements and tweaking as time goes by. Creating and redesigning successful business models is a repetitive managerial task coupled with continuous testing in the marketplace (Magretta, 2002). Hence, a successful business model stands the test of time by creating value for customers on the one hand, sustainable competitive advantage and rising profits for the company on the other hand. If the logic behind a business model does not add up, customer value will not be realized and a company's profits will suffer as a consequence. Moreover, each time a company's business model goes through a redesign phase it creates direct implications for the company's bottom line. In consequence, product prices and margins might have to be updated, new value chain partners contracted, and additional employees hired to fill in talent gaps.

Johnson et al. (2008) identify four interlocking elements that, taken together, create and deliver value for the company, customers, and value chain partners. These value creating elements are then set in motion by designing workable strategies to realize profits for the company in the face of competition. A point to keep in mind then, the following business model elements predetermine the competitive strategies that the company employs but it is fundamentally about how these elements fit together to create and appropriate value. This fit, synergy and interplay among the elements create a higher total value than the value that would be generated by applying these elements in isolation (Magretta, 2002; Sorescu et al., 2011). The following table characterizes the four elements which are then depicted in Figure 2 that comes after the table.

Business Model Elements	Characteristic
Customer Value Proposition	This element has already been discussed above so in a nutshell the proposition specifies how the company helps its customer solve their problems by offering its products and services in the marketplace at an affordable cost and with clearly visible benefits to the customer that distinguish them from the company's competition.
Profit Formula	The formula builds on the company's revenue and margin models, cost structure and resource velocity. The formula defines how the company creates value for itself and its partners while providing value to the customer.
Key Resources	The key resources are assets such as the people, technology, products, facilities, equipment, channels, and brand required to deliver the value proposition to the targeted customer and to sustain competitive differentiation.
Key Processes	Company's operational and managerial processes that allow for the delivery of value in a way that can be successfully repeated and increased in scale. These may include such recurrent tasks as training, development, manufacturing, budgeting, planning, sales, service, company's rules, metrics, and norms

Table 2: Business Model Elements Affecting the Choice of Strategy. Source: Adapted from Johnson et al. (2008, p.3-4)

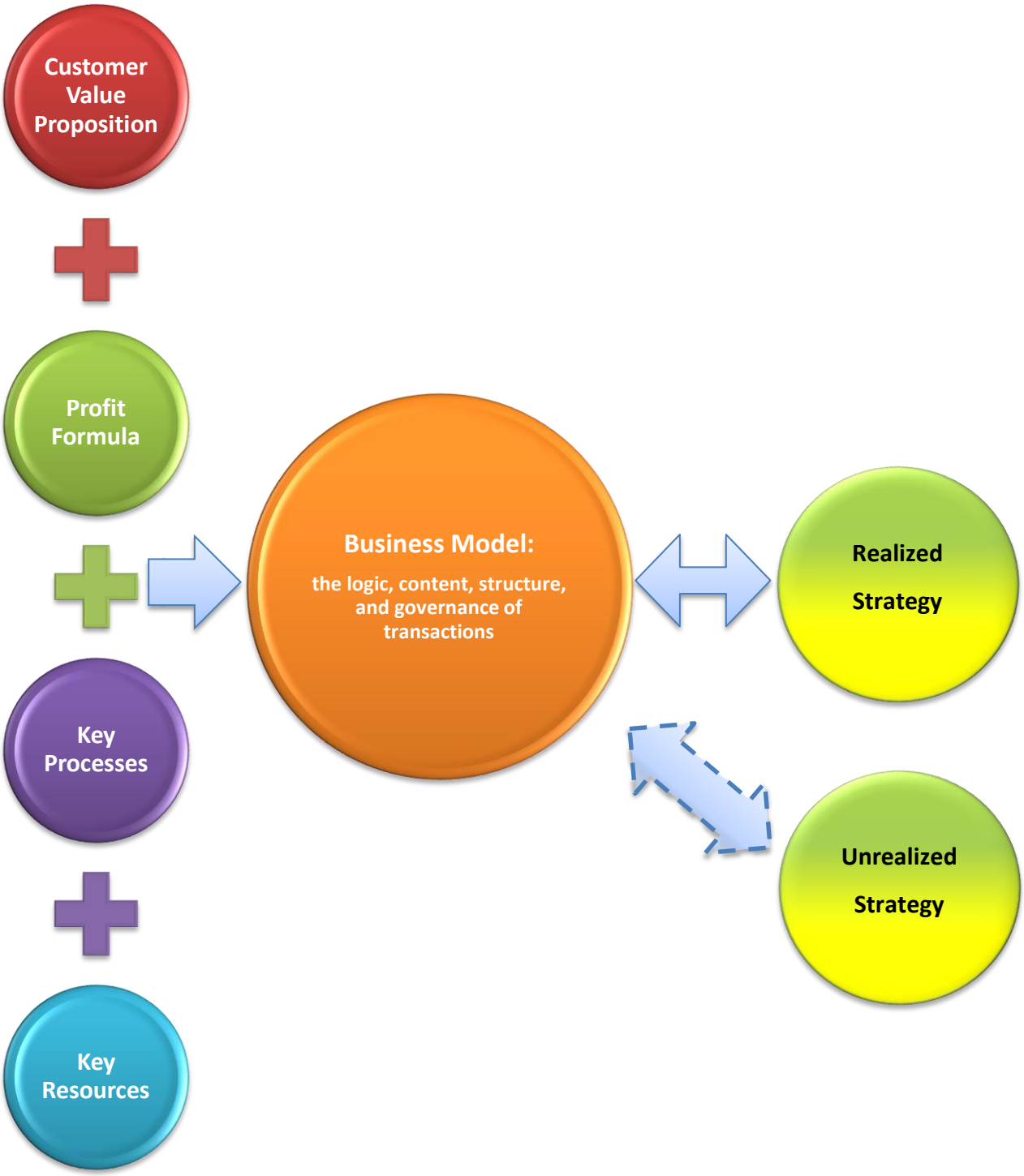

Figure 5: Business Model Elements. Source: Own Figure

3.2. Competing through Business Model Innovation

Innovating in a company's business model with success has been identified as a necessary managers' ability due to external market forces (advances in information and communication technologies, globalization, deregulation, etc.), rising competitive pressures, shifts in economic power from western developed countries to emerging markets (BRICS, Indonesia, Mexico, etc.), and relentless changes in customer tastes and preferences (Casadesus-Masanell & Ricart, 2009; Sorescu et al., 2011; Zott & Amit, 2012). This should come as no surprise since managers are the decision makers and their choices reflect how the organization must operate (business model) and what outcomes shall be realized (value). A global survey by the Economist Intelligence Unit confirmed that 55 percent of 4,018 senior managers favored new business models over new products and services as a source of future competitive advantage (EIU, 2005, p.9). In another study of 1,709 chief executive officers in 64 countries, IBM (2012, p.13) stated that technology change and its impact on companies' business models over the next three to five years had been cited as the most critical one; a point discussed later. Although there were regional and industry differences, the overall message is clear. How companies do business will often be *as* or even *more* important than when, what, and where they do business.

Business model innovation puts the company's managers in a situation where they contemplate innovation costs and benefits by answering the following four questions:

- How have we been doing business during the last X years?
- How can we do business better from now on, i.e. increase the total value created for our customers, partners and for ourselves in the next X years?
- What kinds of resources, technology, skills or expertise do we lack at this moment that prohibit us from growing that value in future?
- How is the new business model going to impact our competitive position and how are our competitors likely to react?

Finding answers to these questions sets the company's managers into an unenviable position where they have to take several factors into consideration. Although addressing the questions is a daunting task, developing a perspective of the company's current business model is an important precondition. This starting position provides important context that shapes the managers' thinking about how to take the

business model to a completely different level of value creation instead of just, for instance, considering isolated product or process choices. Even though it may seem easier and more desirable to innovate in the company's products or processes at first, Amit & Zott (2011) argue for business model innovation over product or process innovation due to the associated R&D monetary costs that naturally come with developing new products, time costs, and uncertainties surrounding both the products' success and initial investments payback period.

These uncertainties are further amplified during economic downturns and crises such as the one that started in the fall of 2008 with the collapse of Lehman Brothers with its repercussions still felt even almost five years later (The Economist, 2010 and 2013). Gloomy economic outlook made some companies resort to short-term cost cutting measures to stay in business by, for instance, slashing the size of the workforce and the number of employee benefits. These and other short-term cost-cutting moves might, however, spell trouble in the longer term as the company's competitive position could have been adversely affected. In these difficult times, characterized by economic stagnation and crisis, a narrow focus on product or process innovation coupled with short-term cost-cutting measures might not be the best option available.

Business model innovation, on the other hand, can help companies weather even long-term economic storms by embracing new technology, introducing change into their industry or breaking into other industries (IBM, 2012, p.47). One may reason that to branch out into a new industry is a costly undertaking. On the other hand, in times of crises and during recession periods, it is very unlikely for companies to succeed only by implementing cost-cutting measures since this might exactly be what competitors are doing (Ucaktürk et al., 2011). When facing strong economic

Figure 6: When to take on business model innovation? Source: Adapted from Johnson et al. (2008)

headwinds and when capital resources to fund R&D programs are limited across the industry, any new attractive source of value creation, such as entering a new industry or embracing modern technology, may seem appealing.

Thus, business model innovation represents a longer term move towards creating new and additional profits at relatively low cost in comparison to product development. In this respect, Amit & Zott (2011, p.12) purport that managers must look beyond mere product and process innovations to center on ways to innovate the company's business model in a highly connected world. Moreover, business model innovation may not always be industry disrupting but still create significant benefits to the company in incremental steps (Johnson et al., 2008; Amit & Zott, 2011; Ucaktürk et al., 2011). Therefore, business model innovation is, arguably, the best option for the company to grow the market share and increase profits while the application of modern technology forms an inseparable aspect in this regard (Ucaktürk et al., 2011).

The opportunity to capitalize on a brand new technology by wrapping a new business model around it or to bring a road-tested technology in-house presents a chance for the company to leapfrog its competition by designing new ways of creating and appropriating value (Padgett & Mulvey, 2007). This approach, subsequently, leads to leadership in the product innovation game and, consequently, greater total value created translates into a growth of business, market share or stronger market position. Indeed, as the IBM (2012, p.46) study found, interviewed CEOs have watched digitization and other technology trends render business models obsolete and disrupt entire industries which further emphasizes the crucial role technology has for business success. In addition, both the growth of the Internet and sales of mobile digital devices have set in motion waves of change in the retail industry that are revolutionary in scope and unprecedented in nature. The speed, easiness, and convenience with which customers access information have led to many new and more efficient ways of information exchange and transaction between them and retailers (McGrath, 2010).

By innovating in business models, retailers go beyond current practice in one or more elements of the business model and their interdependencies. A change in one element causes ripples throughout the whole structure as elements are interlocked. Retail format and design of interface change while value creation and appropriation is modified as a result (Sorescu et al., 2011). Some companies have changed existing markets, such as Walmart with its impeccable inventory management, large bargaining power

over its supply chain partners, and price policy described by the motto “Every Day Low Prices” or "Always Low Prices” in Sam Walton's own words when he opened the first Walmart store in 1962 (Casadesus-Masanell & Ricart, 2009; Business Insider, 2012). Other companies have innovated their business model and expanded an existing market through the use of modern technologies while reaping the benefits in the process, such as Burberry with its digital innovation which is now an integral part of its culture and which started off the rapid pace of branding through online media and implementation of mobile digital devices in its bricks-and-mortar stores (Moore & Birtwistle, 2004; Farber, 2009; Burkitt, 2011; Morrison, 2012).

Other retailers have used technology to completely alter the customers’ thinking about the product assortment, pricing, and store format. The Spanish retailer Zara, owned by the Inditex group, is a good example of a company putting technology to work to design, manufacture and distribute clothes in a rather “fast fashion” style (Lopez, 2009; Newbery & Meulen, 2010). Zara launched online operations in over 80 countries and its digital application for both tablets and smartphones[1] has been downloaded by millions of customers since its launch in 2009 (Dowsett, 2013). Taken together, Zara, by striking a balance between keeping certain generic clothes manufacturing activities in-house and outsourcing others, has grown into a global fashion powerhouse. A position Zara has earned by taking an innovative approach to its business model that is built on customers’ preferences understanding, prompt delivery of new fashionable garments and enveloped by technology (Casadesus-Masanell & Ricart, 2007).

Technology plays a critical role in the area of business model innovation as it can streamline the company’s internal activities and connections with partners, expand the company’s boundaries and engage its customers in a new and uncommon way. Business model innovation, in its essence, sets in place the logic for competing effectively in existing and new markets and technology serves as an enabler to get closer to customers (Sorescu et al., 2011; Zott & Amit, 2012).

In the retail industry, transactions between retailers and customers are more personal as retailers engage directly with customers. The strength of these interactions is dependent on the customer experience retailers can create for their customers rather than on the goods and services sold to them. A purposeful focus on elevating the customer experience is an internal driver that prompts retailers to

[1] For more information about Zara’s application for mobile digital devices, go to: http://www.zara.com/webapp/wcs/stores/servlet/category/dk/en/zara-neu-S2013/362004/APPS

select innovative techniques to strike the best balance between their back-office activities (those not visible to customers), and physical and digital environments (where customers interact with retailers and other customers) (Zomerdijk & Voss 2010). Therefore, innovative business models go beyond traditional retail functions of procuring, stocking, and moving products. In other words, technology driven innovation in retail business models shifts retailers' position of intermediaries between manufacturers and customers to creators of additional value through the integration of technology into the retail format.

Decisions surrounding channel coordination have been given prominence in the past decade since these decisions, together with customer design interface, impact the choice of the retail format in the first place. Besides the channel coordination, the choice of a retail format in itself presents an important decision as it can offer unique competitive advantages that would require deeper insight into a retailer's core processes and interrelationships to replicate them successfully by competitors.

Nowadays, most large retailers have morphed into multi-channel companies (Sorescu et al., 2011). Retailers, compelled to stay abreast with technology developments, need to coordinate on- and offline channels using multichannel formats such as "click-and-mortar" where the same customer seeks product information via the Internet on his/her smartphone after seeing an advertisement on his/her Facebook page and reading customer reviews on Yelp.com, then visits the retailer's store and purchases the product, and finally has the product delivered to his/her front door with the option to contact customer support via on-line chat interface to seek advice in case of doubt (Rudolph et al., 2012).

The advent of the Internet and the growing uptake of mobile digital devices enhance the efficiency of the shopping experience by reducing customers' search costs and by allowing them to purchase products that were previously not geographically accessible. Retailers have traditionally sought to increase customer efficiency by offering the product in multiple locations, increasing the convenience of product displays or offering more sales support. Nonetheless, all of these options add to the total costs retailers incur and to the final product price customers pay. The shopping flexibility enabled to customers by accessing the Internet on-the-go forces retailers to sell products in multiple channels and also across channels. Both sides can collect additional value if their interests are aligned and if retailers are supported by their value chain partners (manufacturers, suppliers) (Padgett & Mulvey, 2007; Grewal et al., 2009; Panteva & Stampfli, 2012).

Business model innovation within this multi-channel retail environment empowers the customer to contribute to the total value created through the use of in-store technologies that may also present cost savings for the retailer, such as self-checkout registers, intelligent weighing scales, hand scanners and walk-in kiosks (Krafft & Mantrala, 2010; Rudolph et al., 2012; Springwise, 2013). Although this raises the issue of whether or not some customers could perhaps be deterred by the self-service technologies installed and available in stores. In this respect, the New York Times (Clifford, 2012 a) reports that a younger generation of shoppers is inclined to and embraces the self-service shopping experience because where employee assistance was previously required, the customer, enabled by technology, can now perform the transaction alone without feeling pushed or forced into completing the purchase (Meuter et al., 2005). On-line platforms, such as review websites and augmented reality, present another area where customers can co-create value (McNeal, 2013). Sorescu et al. (2011, p.6) purport that retailers, in today's customer- and technology-driven retail industry, are increasingly counting on the customer to play an active role and be a co-creator of value across a broad range of retailing activities. Every time customers talk, either on- or off-line, about their impression of the shopping experience created by retailers, they inevitably shape the design of retailer interfaces, i.e. the way retailers structure exchange processes and ways of providing more effective and superior experiences to their customers in-store, on-line and on mobile devices.

The above discussion of the theory of business model innovation, of the impact of technology on retail, and of multi-channel retailing concludes with the following figures that depict transformation the retail has gone through during the last decade. The first two figures outline the traditional business models of bricks-and-mortar stores. Figure 10 then shows the changed business model of a multi-channel retailer.

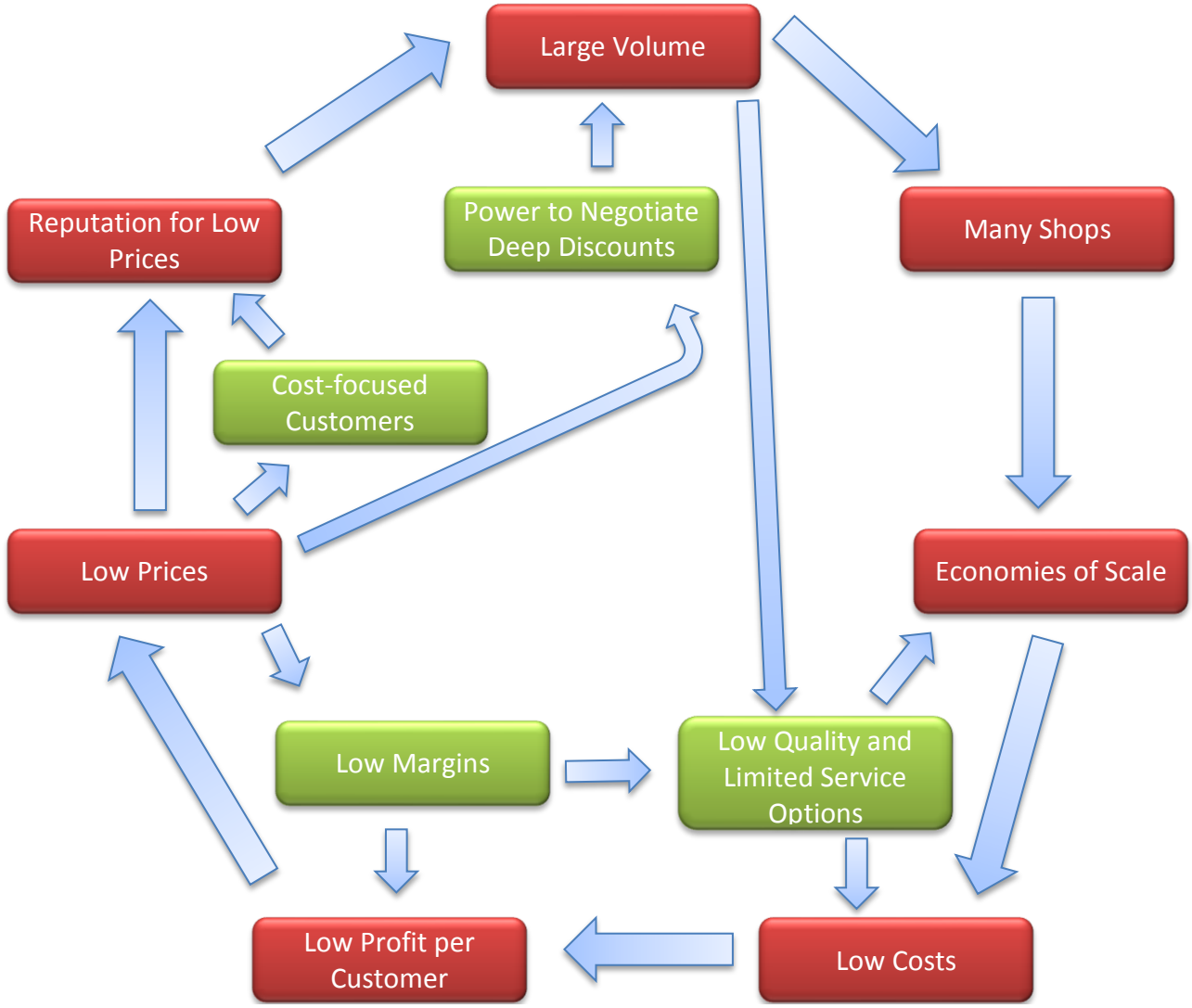

Figure 7: Traditional Business Model - Low Costs Bricks-and-Mortar. Source: Own Figure.

The above figure represents a business model of a low cost retailer, such as Walmart, where low product prices and large volume are the crucial elements of customer value proposition. These two elements determine who the targeted customers are and what they expect. Customers of a low cost retailer look for daily discounts and seek to realize savings. In order to meet their expectations, the retailer must possess a strong market position to be able to exert influence over its suppliers and constantly negotiate product discounts. In addition, the retailers offer a high number of various products of rather lower quality. Shops are set up in many locations to cater to the mass market. As the retailer operates on thin margins, service options and the number of store personnel are limited to a necessary minimum which leads to, together with economies of scale, low costs of running the business. The retailers achieve high turnover but profit per customer is low.

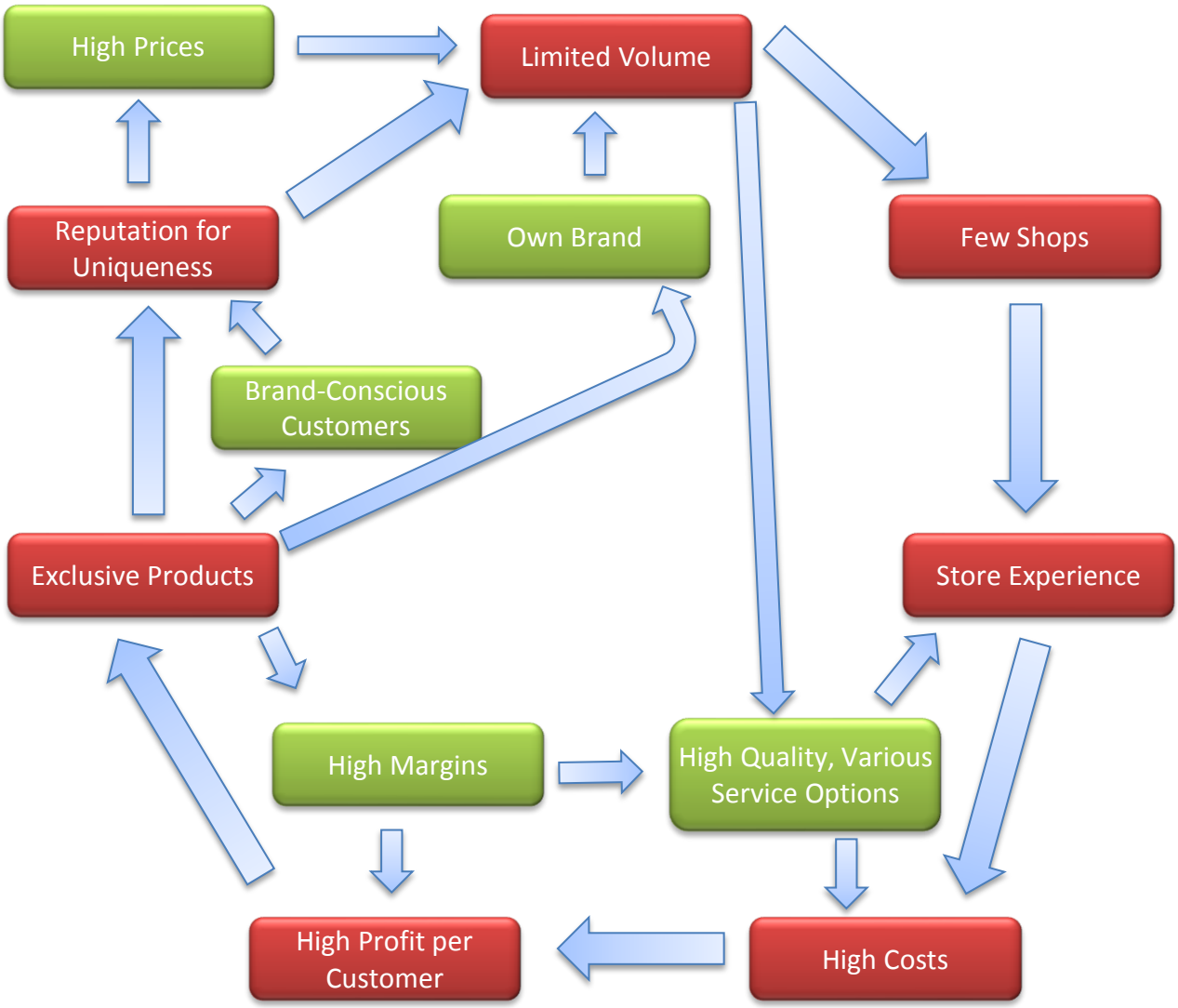

Figure 8: Traditional Business Model - Premium Bricks-and-Mortar. Source: Own Figure.

Figure 8, in comparison to the previous figure, depicts a business model of a premium retailer, such as Burberry, who sells luxury products at high prices and enjoys reputation for product uniqueness. High prices add to the prestige of the brand and product volume is kept low to further strengthen the sense of exclusivity in the minds of brand-conscious customers. Shops are established in select locations and limited in number. Impeccable customer service and memorable store experience increase the costs of operating the stores. Nevertheless, high profit per customer is realized as costs are calculated in high margins.

With the onset of on-line shopping and increasing connectivity of customers, the evolutionary impact of the Internet has been felt by retailers. All kinds of products that used to be and could be bought only in

traditional physical stores in the past are now available on the Internet. Furthermore, mobile digital technologies that allow customers constant Internet access take the evolution of shopping one step further.

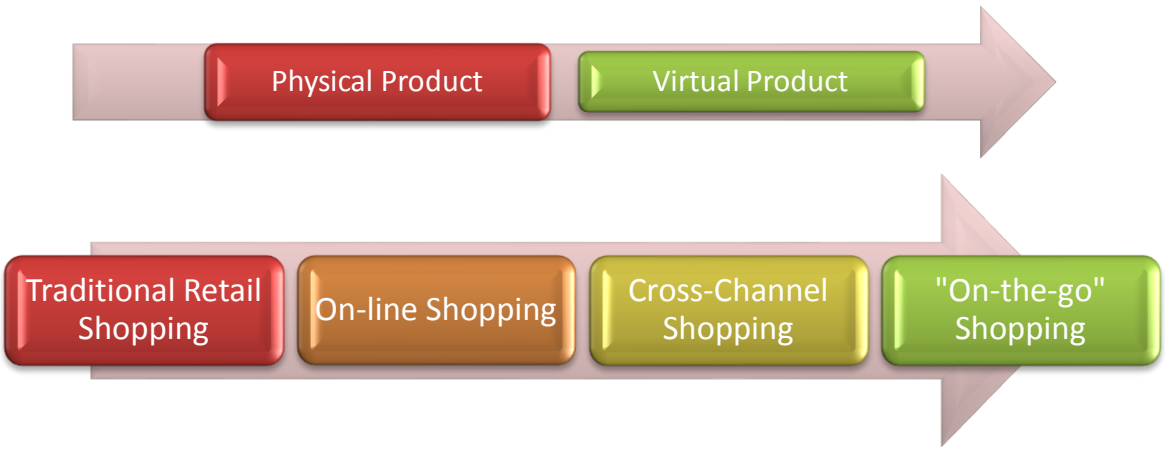

Figure 9: Impact of the Internet and Mobile Digital Technologies on Retail Shopping. Source: Own Figure.

A combination of physical and on-line retail presence, together with constant access to the Internet, enable the customers to shop on their own terms. Traditional retailers' business model changes as a result (Figure 10) and more factors affecting shopping are at play, as shown in table 3.

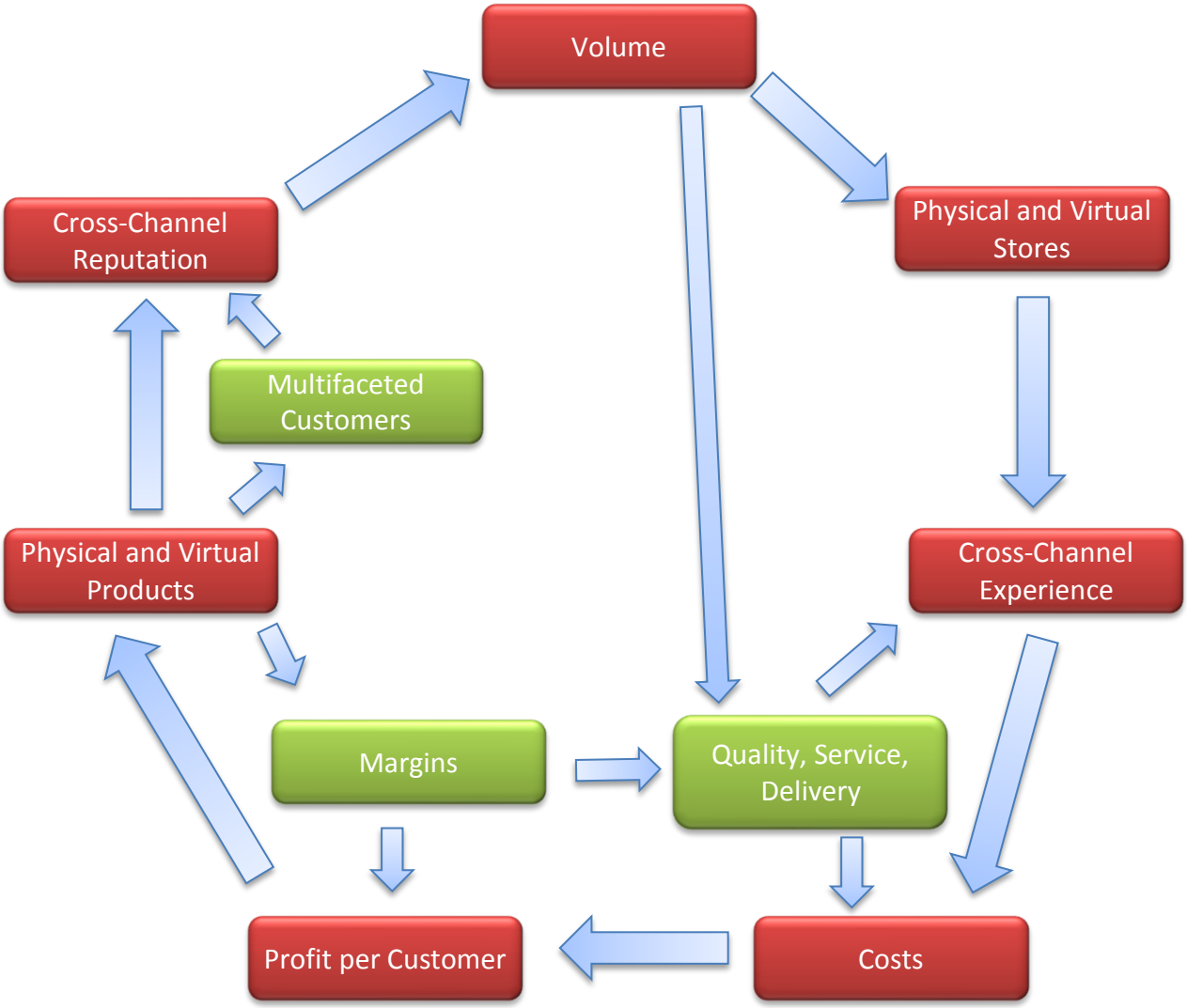

Figure 10: Changed Business Model – Multi-Channel Retailer. Source: Own Figure.

	Aspects for Consideration
Physical and Virtual Products	The role of presentation of virtual products on the Internet accessed from any kind of device – PC, laptop, mobile digital device, in-store kiosk – and the form of presentation – videos, static/360° pictures, virtual reality – help realize the sale on-line or sway the customer to visit the store; Products sold in-store are complemented with digital presentations and virtual reality;
Customers	Needs, wishes, and expectations of customers on-line and in-store differ; Customer behavior of the same customers on-line and in-store differs; More customer profiles, based on customer data, are developed; More sales scenarios are developed for each customer profile;
Reputation	Store, brand, and product reputation "travel" wildly and fast across the Internet; The retailer has options to influence on-line discussions and direct them in his/her favor;
Volume & Stores	Selection of products on-line is the same as in-store; The on-line store holds an expanded volume of products, complementary products, tailored products, bulky products too big for the store, etc. to keep inventory levels low; The physical store is a "showroom" – carries only the best, core, exquisite products; Stores are redesigned and equipped with interactive technology that informs, entertains, helps realize sales or otherwise entices the customer to spend more time in the shop and to repeat the visit;

	Store traffic is a measure with variable importance dependent on where more sales are realized, in-store or on-line;
Cross-Channel Experience	Shopping and brand experience is seamless across channels; One channel is given preference over the other or channels are integrated in one cohesive system; Store personnel promptly react to customers' requests by being available on the shop floor and are trained in the use of mobile technology;
Quality, Service, Delivery	Quality of products sold on-line cannot be personally verified, therefore brand, reputation, customer reviews and recommendations are important; Price guarantee and various return options (in stores, by post, at pick-up locations for products bought on-line) ease customers' hesitance to purchase on-line; Products purchased on-line are shipped to customer's address, the nearest shop or specified pick-up location; Customer service available on-call, on social media platforms or through instant messaging on retailer's website helps solve problems and answer customers' questions; Several payment options are offered to guarantee convenience and finalize the sale;
Costs	Additional channel and services increase retailer's costs of doing business; Employing specialists, negotiating with more value chain partners, training staff add up more costs; Investments in new technology, fulfillment software, inventory software, IT infrastructure, web and mobile applications, etc. take time to pay back; Customer data analytics augments costs;

Margins	On-line price transparency plus price comparison websites impact the retailer's product prices both in-store and on-line; Various price strategies and margin models are set in place to ensure flexibility in manipulating with prices;
Profit per Customer	Profit per customer shopping on-line differs from the one shopping in-store; Knowledge of customer behavior on-line and in-store together with customer purchase history affect profit per customer;

Table 3: Aspects of a Multi-Channel Retailer's Business Model. Source: Own Table.

The discussion above confirms that the upside potential of business model innovation on value creation is indisputable. Customers shape the retail format adopted by retailers and, as a result, drive the push towards multi-channel retailing where all formats have to be integrated in a cohesive business model. This all boils down to the fact that multi-channel retail formats are here to stay even when it comes to, for instance, luxury fashion brands.

Linking retail activities with a set of particular brand ideologies, and extending these ideologies to the on-line world and onto mobile devices may require significant changes to a retailer's business model; changes that may well be worth it. Leveraging the interconnections among the business model elements makes it harder for others to replicate a particular business model. Innovating in business models through the application of modern technologies, through the strengthening of established linkages and the creation of new ones, a potentially powerful and long-term source of competitive advantage can be attained.

A general, internally entrenched emphasis on innovation within the company, i.e. within the minds of its people, is surmised to lead to business model innovations, as experimentation will motivate employees and enable the company to discover viable new business models without jeopardizing current performance (McGrath, 2010; Chesbrough, 2010). Indeed, current performance is just a short-term and passing state in the company's existence. Business model innovation either creates new markets or sets the company in a position to pursue new business opportunities in existing markets. Subsequently,

competitive position of those companies that successfully embrace business model innovation is elevated above the industry average as value creation and appropriation logic are dramatically improved (Sorescu et al., 2011). This applies even in times of economic hardship when resource scarcity and ensuing cost-cutting may seem to dominate the company's manager's agendas (Amit & Zott, 2011).

Successful business model innovation does not happen overnight though. It takes time and flexibility as the model may have to be revised several times before finding the correct fit of all business model elements. Mistakes and omissions are commonplace in initial phases. They should not, however, dissuade the company from keeping the course while taking corrective actions on the way (Johnson et al., 2008). In this respect, business model innovation is as much a method towards increased profitability and sustainable competitive advantage, as it is a learning journey for the company. A journey that may be shortened by conscious, thoughtful, and purposeful decisions taken on the company's managers' part on the one hand, and artfully enveloping modern technology in an opportune and robust business model on the other hand. In a fast-changing retail industry characterized by intense competition and driven by technology and customers' demands, business model innovation offers a fresh lens for creating and appropriating a greater total value for the customers, value chain partners and for the company.

Lastly, as the revolution in information and communication technology and social media opens broad new opportunities, both in the on- and off-line worlds, business model innovation is increasingly vital for business growth and survival. Hence, retailers need to adapt to this new world of "unrestrained access to information" to survive the shoppers' changing expectations about how they wish to be engaged all along their path to purchase.

As technology opens new possibilities and options to both customers and retailers, the customer purchase journey changes as well and customers have more options of how to discover, research, purchase, and enjoy the products bought.

In Figure 11, the factor level contains three key factors introduced and discussed in preceding sections. These factors spark the process of change, both in customer behavior and in retailer's business model. The customer then "walks" the purchase journey while interacting with other customers, the intended product, and the retailer at several touchpoints and through various digital media. After the purchase has been finalized and customer's expectations have been met, stronger relationship between the

customer and the retailer is established which leads to repeat purchases and/or positive word-of-mouth, both of which can take place off- and on-line.

Figure 11: Multi-channel Shopping Experience for Customers and Business Opportunity for Retailers. Source: Own Figure.

CHAPTER 4 – SELECTED CASES

The ensuing selected cases are used to verify and discuss business model innovation through the means, direct or indirect, of modern technology implementation.

4.1. Leveraging Customer Loyalty Data – Case of Tesco and Safeway

To generate value, retailers will have to understand more fundamentally what their shoppers need and how best to deliver it. It is an old challenge in a new world. A purchase process can, for instance, be improved by connecting loyalty program data with loyalty-based on-line promotions through the use of technology to create customer lock-in.

In the retail sector, customer lock-in creates a high incentive for customers to return to a store, such as a membership or a subscription to a retailer's services (Zott & Amit, 2010). In this respect, mobile applications, personal shopping assistants and kiosks are potential technologies to utilize. The customer's purchase history can be accessed by on-line personal shopping assistants and, as a consequence, targeted shopping lists, promotions and adjusted prices are delivered to specific customers.

Online analytic tools and data mining abilities on the part of retailers bring a new perspective on loyalty program data. For instance, the UK-based supermarket chain Tesco, the world's third largest retailer in global sales after Walmart and Carrefour (Krafft & Mantrala, 2010), is famous for its "Tesco Clubcard"[2] and loyalty program. Tesco offers Clubcard holders and loyalty program members not only traditional, untargeted promotions through its weekly flyer but also targeted promotions based on each customer's purchase history. Tesco categorizes its customers into several segments, designs targeted promotions for each segment, and disseminates information about product promotions through personalized e-mail and mobile digital communication initiatives with special focus on Facebook, Twitter, YouTube and smartphones. Tesco also uses purchase data to select those customers who are likely to switch and personalizes special offers to them. Targeted coupon and voucher promotions allow customers to get

[2] For more information about Tesco Clubcard, go to: http://www.tesco.com/clubcard/clubcard/what.asp or http://www.clubcard.info/loyalty-cards/tesco-clubcard

extra discounts and earn points for buying certain products to keep them loyal on the one hand, and increase store foot traffic and improve the profitability of each customer for Tesco on the other hand.

In terms of customer profitability, smart use of loyalty data can go even beyond offering tailored coupon and voucher promotions by offering tailored pricing. This is a strategy adopted by a U.S.-based retailer Safeway[3]. This retailor tailors pricing privately to individual shoppers based on their profile and purchase history by combining an on-line and mobile application called "Just For U" with its club card scheme. Customers, by using this application, receive not only a list of products that are currently on sale, but also a personalized offer for other products that are discounted by a certain percentage based on the customers' purchasing history. The retailer estimates that individualized pricing represents savings of between 10 and 20 percent for the customer. Apart from the product list and pricing features, Safeway also offers its customer an on-line platform where they can conveniently search for coupons. These are then added on the customer's club card and redeemed in Safeway's stores. Just For U was launched in 2012, and so far 5.4 million households have signed up for it, representing 45 percent of Safeway's sales base (The Futures Company, 2013). Furthermore, Safeway takes the digital customization of coupons one step further by reacting promptly to current events in certain locations of the USA. In one case, Safeway promptly sent Washington city residents coupons for freezer items to encourage restocking after a power failure paralyzed the city (Clifford, 2012 b).

The combination of electronic delivery of coupons and vouchers with mobile digital devices, that allow the customers to store and then conveniently redeem them inside the store, provides the functionality and specific features to effectively target individual customers and increase their loyalty (Zhang & Wedel, 2009). By offering unique value-enhancing options and services that elevate the customer experience above expectations and by bundling them with mobile digital devices the customers are used to carrying around, positive consequences for loyalty, retailer brand equity, and repeat purchase are achieved (Casadesus-Masanell & Ricart, 2007). Multi-channel retailers must, however, understand the cost and benefits associated with implementing such targeted promotional and communication methods as they might be perceived intrusive by some customers (Neslin & Shankar, 2009).

[3] For more information about Safeway, go to: http://www.safeway.com/ShopStores/Offers-Landing-IMG.page?

Business Model Elements	Evaluation
Customer Value Proposition	In both cases, the proposition is changed by the use and implementation of digital technology; Personalization of promotional messages, vouchers, and even pricing based on collected and analyzed data, are clear examples of offering the customers new value specifically appropriated to them;
Profit Formula	Revenue and margin models are adjusted as a result of introducing new discounting options; Targeted offerings draw more in-store and on-line traffic which leads to higher resource velocity;
Key Resources	New technologies, IT solutions, software and hardware are purchased or leased; Staff is trained, new employees with specific skills hired, and/or specialized provider contracted; The brand is stretched across several channels and must be nourished;
Key Processes	Customer service and privacy policies come to the forefront as customers ask questions about collected data and received offers; New customer metrics following the customer purchase history, voucher rate of redemption, on-line and in-store purchase behavior are introduced; Constant training and skills development become a company norm as they are seen to support the delivery of value;
Conclusion	Both cases are examples of business model innovation

Table 4: Tesco and Safeway: Evaluation of Business Model Innovation. Source: Own Table.

4.2. Customers as Co-creators of Value – Cases of Mix My Granola, chocri and My M&Ms

Customer co-creation goes hand in hand with the use of the Internet and mobile digital technologies. Co-designing products has been identified as a useful technique to strengthen brand associations and potentially increase brand loyalty by leveraging the endowment effect and psychological ownership effect (Franke et al., 2010). Emotional involvement with and attachment to the brand or product, as well as emotionally stimulating shopping experience through product co-creation, play a crucial role in customer engagement (Van Doorn et al., 2010).

Giving customers the option and tools to create their own versions of products has resonated well, for instance, in food retailing. Fans of granola, chocolate and M&Ms[4] can now create their own and personalized versions of these snack foods in a matter of a few minutes and have them delivered to the comfort of their home or have them sent to friends' address as a little surprise. These and many more other examples of customers co-creating the final products have opened a market to innovative companies that was previously underserved by mass manufacturers. The business model innovation in this respect manifests itself in the fact that the company moves from selling products to offering immersive and emotional shopping experiences which include socialization, co-creation, and embedding the brand in personal memories. The intent is to design a unique shopping experience that integrates the customer into the process to create a lasting, pleasant memory, and ultimately a loyal customer who will shop for the products both in-store and on-line (Krafft & Mantrala, 2010). Moreover, mobile digital devices give customers the option to "brag" about their version of a granola bar or share their ardor over a received package of personalized M&Ms on social media precisely at the right moment – when the emotional feeling is at its highest (Ohngren, 2010).

[4] For more information about Mix My Granola (now Element Bars), chocri and My M&Ms, go to: http://www.elementbars.com/mix-my-granola-becomes-element-bars.aspx; http://www.createmychocolate.com/; http://www.mymms.com/utility.aspx;

Business Model Elements	Evaluation
Customer Value Proposition	The proposition is in "make-your-own" version of a well-known, and maybe even mundane product by utilizing digital technology; Personalization plays a decisive role since the final product is more expensive than a similar one sold in-store; Flexible delivery options strengthen the proposition; Social aspects – social media sharing, gift options - further elevate the value proposition;
Profit Formula	Higher prices and higher margins can be set for providing extra value;
Key Resources	The importance of brand is high as it makes potential customers "believe" in the quality of the final product; The brand is stretched across several channels and must be nourished; Technology is important and necessitates additional investments; In the case of My M&Ms in-store staff is trained to be familiar with the on-line solution; In all three cases, new employees with specific skills are hired, and/or specialized provider contracted;
Key Processes	Strong customer-service mentality is developed to handle customer questions and possible complaints; Reliable fulfillment process and system capable of handling spikes in demand; Flexibility in dealing with suppliers; New customer data metrics and customer profiles based on on-line purchases;

Conclusion	All three cases are examples of business model innovation.

Table 5: Mix My Granola, chocri, My M&Ms: Evaluation of Business Model Innovation. Source: Own Table.

4.3. Big-format Retailers Innovate In-store Fashion Lines – Case of Target

Another driver of competitive advantage that stems from the retailer's business model is an innovative approach to otherwise mundane product assortment. U.S.-based Target has built clothes assortments around products that are unique, inimitable and which deliver a clear value proposition to customers. Target, through exclusive deals with fashion designers Michael Graves, Isaac Mizrahi, Alexander McQueen, Jean Paul Gaultier and others, has crafted a modern and stylish brand image not characteristic of superstores (Reuters, 2011; Groth, 2011).

Target has also successfully invoked an aura of exclusivity through a deal with the Italian brand Missoni which would only be available for a few weeks. Successfully targeting consumers who value "cheap chic", Target has added a few more points to the bottom line and strengthened its position in the retail industry. Target has capitalized on its innovative approach to discount retailing by offering designer clothes and succeeded where undifferentiated competitors such as K-mart, and to a certain degree Walmart, have floundered because they failed to find distinctive ways to compete. Target, as well as Zara mentioned earlier, relies on exclusive, high quality but still reasonably priced fashion products sourced from an efficient network of value chain partners. These innovations are pointing examples of the interlinkages among the elements of the company's business model since product assortment changes also require changes to the company's governance mechanisms (Magretta, 2002; Zott & Amit, 2010; Zimmerman, 2010; Ryan, 2010).

Business Model Elements	Evaluation
Customer Value Proposition	Designer clothes sold at lower-than-usual prices is the main proposition; Creating a sense of urgency, limited selection, and setting a deadline on the sales contribute to exclusivity, to possessing a truly luxurious product;
Profit Formula	Higher margins are set and higher prices charged for offering high-quality and special products; Costs associated with contracting designers push the prices higher but have to be constantly curbed in order to sell the products;
Key Resources	People and people connections are key to negotiate contract conditions with designers who “risk” their reputation; The brand behind each designer’s work is important because it sells the more expensive pieces of clothes; The store area is redesigned and the store experience rethought in order to reflect the sale of luxury products in a traditional big-format retail store; In-store and digital technology serves the purpose of informing the customers of the limited sales;
Key Processes	Employees are trained to deliver “luxury” customer service and stories about the products; Sales are short-term and repeated which necessitates flexibility in store organization and in negotiating with suppliers;
Conclusion	The case is not an example of business model innovation as the innovation happens around one specific product line that forms neither the core of Target’s product assortment nor is a substantial item in Target’s sales. Nevertheless, Target

	has set in motion a trend not seen or successfully undertaken by his competitors.

Table 6: Target: Evaluation of Business Model Innovation. Source: Own Table.

4.4. Luxury Fashion Retailers Enhance the Store Experience by Introducing Technology inside the Stores – Case of Burberry

The topic of fashion and retail deserves more attention especially due to combining modern technology with emotional feelings about fashion which adds an entirely new, exciting layer to the retail setting. Themed brand stores such as those of Burberry are exponents of a retail brand ideology which is designed to immerse and lock in customers in a complex experience which includes socialization, modishness, and embedding of the brand into personal memories (Kozinets et al., 2002). Burberry has successfully enshrined the brand ideology in its stores and has become part of its customers' daily lives by providing them with unique shopping experiences in the stores but, now, also on-line. Customer engagement the "Burberry's way" goes beyond customer satisfaction; it represents an active involvement with the product, the brand, the digital media and the stores. What sets Burberry apart from other fashion houses is the dedication to digital and the seemingly effortless weaving of the medium into everything the brand does. This has transformed Burberry into a truly global brand with a consistent brand message across the world and channels (Morrison, 2012). Burberry has built a large following on Facebook[5] and also established its very own social domain called the Art of The Trench where fans can post pictures of themselves wearing the iconic trench coat using the iPhone Instagram application[6] (Conti, 2009).

By appropriating resources to online shopping solutions, and developing social media applications in association with relevant partners, Burberry has launched, as the first fashion brand, the option to buy clothes directly from the catwalk using tablets with the Burberry application. This approach to selling new season's clothes greatly shortens the delivery time as customers can expect to have the pieces delivered in a matter of a few weeks. It also creates the sense of exclusivity because customers receive the clothes before they hit store shelves.

[5] Burberry has more than 14 million Facebook likes in addition to established presence on Twitter, YouTube, Pinterest
[6] For more information about the Art of the Trench Coat social domain, go to: http://artofthetrench.com/

With regards to stores, Burberry has created a unique store experience by "arming" the store assistants with tablets and a log of customers' purchase history and preferences, and by connecting stores digitally (Burkitt, 2011). Lastly, Burberry has opened a new futuristic flagship store in London recently which some characterize as the future of bricks-and-mortar (Nobbs et al., 2012; Manlow, & Nobbs, 2013; Minnick, 2013). The store combines radio frequency identification technology with interior digital walls, innovative touchscreens, and audio systems. The aim of the store is to create a seamless shopping experience and replicate Burberry's online world with all its advantages over the off-line world (recommendations, suggestions, reviews, product videos, fashion show recordings, etc.) and complement it with the store atmosphere, human touch and physical experience of the products.

The long and the short of it is, Burberry has succeeded in capturing the opportunities for business model innovation that lie in developing new delivery methods of designer clothes through weaving digital and physical channels and by turning products and the process of shopping, both on- and off-line, into memorable experiences (Nidumolu et al., 2009). Experiences that ask for sharing and customer interactions on social media platforms, such as Facebook, where Burberry enjoys strong presence.

The shift in consumers' preferences from owning a luxury piece of clothes to experiencing the shopping process for luxury items and sharing the experience with like-minded consumers is a global trend confirmed by a recent study carried out by BCG. The study confirmed that experiential luxury now accounts for nearly 55 percent of total luxury spending worldwide (estimated at $1.4 trillion) and, year on year, has grown 50 percent faster than sales of luxury goods (BCG, 2012, p.3). Other relevant finding concerns the shift of economic gravity from Western developed countries to rising economic powers, such as the BRICS nations. Indeed, luxury brands have been building up presence in, for instance, China over the last six years. This move to developing markets, however, necessitates radical business model innovation. Burberry's move towards digital media and devices, discussed above, had actually been initiated and market-tested in China first before the multi-channel retail model was scaled up in other markets (EIU, 2012). The study further verified the importance of building a consistent brand experience across channels. As legacy luxury brands have been rather slow to build their digital presence, nimbler digital pure plays have chipped away at their profits by offering luxury items on-line for a limited period of time and at lower prices than in branded physical stores (BCG, 2012, p.13).

Business Model Elements	Evaluation
Customer Value Proposition	The main customer value proposition lies in experiencing the Burberry brand using modern technology that customers are familiar with – social media, Internet, tablets – creating more touchpoints; Embracing this approach to luxury, customers have more opportunities to interact with the brand across channels and share their experiences with other Burberry fans creating a unique collection of stories; By giving the lucky few customers the option to purchase brand-new pieces as they see them on the models, Burberry creates a sense of exclusivity that is inextricably associated with luxury;
Profit Formula	Purchasing luxury clothes before they even appear on stores' shelves comes at a higher price for the customer; Volume is increased as on-line word-of-mouth spreads and brand stories resonate positively with customers who would otherwise not be interested; Costs associated with implementing new technology – both in-store and on-line – are reflected in higher prices;
Key Resources	The core product – the trench coat - stays the same but is seen in a new light while the brand is stretched across channels and is cherished both by the company and the fans; The core product, the brand, and the brand stories are the driving force behind value delivery; New flagship stores are opened and current stores refurbished with interactive technology to create both a seamless brand experience and memorable shopping experience;

	Store staff trained in using new technology and in creating the connection between technology and luxury experience is crucial;
Key Processes	Season's sales are planned with the digital channel in mind; Impeccable customer service, both in-store and on-line, and delivery service guarantee the brand experience customers expect; Employees are trained to deliver on the customer value proposition;
Conclusion	The case is an example of business model innovation.

Table 7: Burberry: Evaluation of Business Model Innovation. Source: Own Table.

4.5. Extending Sales of Luxury Fashion to the On-line Channel – Case of Gilt Groupe

Gilt Groupe is (or perhaps was) a shining example among digital pure plays selling designer clothes on-line. Gilt, founded in 2007, has established itself on-line by enveloping its business model around marketing limited-time, members-only "private sales" for designer apparel at steeply discounted prices (Carroll, 2012). Gilt has masterfully taken advantage of the fallout of the economic recession and of the excess in clothes supply that retailers with physical channels suddenly needed to deal with as customers became stingy and careful with money. Gilt has introduced a model founded on digital channels, such as email, Facebook, Twitter and the company's website, whereby customers, after becoming Gilt club members, could acquire discounted designer clothes and accessories through limited daily deals. Gilt's model spelled trouble for legacy luxury brands that had traditionally relied on their own flagship stores and partnerships with retailers to distribute their products. Even Burberry, mentioned above, had not fully embraced the digital channel until the fall of 2010 and other luxury brands had been greatly lagging behind (Owen, 2010; BCG, 2012). Social media platforms, namely Facebook, have contributed greatly to Gilt's success because they allowed for speedy sharing among customers and for a growing number of subscribers. As a result, that number had increased from mere 15,000 in 2007 to whopping 5 million in 2011 and is still growing (Carroll, 2012).

Gilt has also skillfully combined purchase history and personal data of its customers with personalized mobile-enabled email offerings reaching the customers "everywhere". This has contributed to its email

marketing success by not spamming customers' inboxes with irrelevant offers and, at the same time, keeping them engaged and giving them the option to make a purchase now rather than later when sitting behind a desktop PC or a laptop. In addition, Gilt has been sending out emails at the most purchase-prone times during the day, i.e. Gilt has identified hours of the day when specific groups of customers are most inclined to make a purchase.

To sum up, Gilt has cut a share of the fashion luxury market for itself by not creating memorable store and brand experiences, but by attending to a segment of luxury-hungry customers who are on the lookout for deals. Gilt has designed an innovative business model built on member invitations, discounted yet time-limited offers of designer products to compel immediate action, and on partnerships with luxury brands.

As time progresses, Gilt has had to face an increasing number of competitors, such as Vente-Privée, Rue La La, Hautelook, Net-A-Porter Group, ideeli[7], and voices questioning the sustainability of its business model have been heard more and more often especially after Gilt's full-price, luxury men's apparel business turned out to be a flop (By & Das, 2012). As Gilt strives to stay ahead of its numerous competitors, questions about the appropriateness and novelty of its business model should be asked by its managers. The model was built when customers were seeking discounts and when brands and retailers experienced difficulty selling excessive inventory at pre-crisis levels. Not that the customers today wouldn't seek discounts anymore, but inventory levels have already stabilized. Moreover, customers may have already come to the point where they expect designer clothes at discount prices and, therefore, do not view them as something exciting as five years ago. This suggests that Gilt's business model has already passed its "expiration date" and that virtuous cycles, that have led to growth in revenues in the past, may have already been broken due to changes in customer expectations and a growing number of competitors. As business models do not operate in a vacuum, i.e. they interact with those of competitors' and partners', also Gilt's model may have been adversely affected by these interactions (Casadesus-Masanell & Ricart, 2007).

[7] For more information about these flash sale competitors, go to: www.vente-privee.com, www.ruelala.com, www.hautelook.com, www.net-a-porter.com, www.ideeli.com

Business Model Elements	Evaluation
Customer Value Proposition	Bringing discounted designer clothes and accessories to a wider base of customers, especially those seeking luxury but having limited budgets, is the main proposition; Flash-sales model spurs quick action before the offer is gone which preserves the feeling of owning a luxury item; Even though user numbers are rising, it is still a membership-only club which creates a sense of uniqueness and privilege;
Profit Formula	To realize profits, favorable contracts with suppliers and manufacturers must be in place; Lower prices of otherwise pricey luxury pieces sway more customers to make a purchase – volume drives profits; Automation of sales keeps costs down;
Key Resources	Presentation of products on the Gilt's website, digital promotions based on customer preferences and purchase history, and accompanying technology are key resources as there is no physical store and Gilt itself is not a luxury brand; Customer data and analytics serve to create customer profiles and targeted digital promotions; Reputation about Gilt as a credible on-line store is important to break customers' hesitance and dispel doubts about the quality and originality of luxury products offered;
Key Processes	Repeated renegotiation of contracts with suppliers and manufacturers of luxury products; Strengthening Gilt's reputation both on-line and off-line;

	Constantly collecting lead and customer data and analyzing them; New customer data metrics (based on on-line purchases) and customer profiles are developed; Reliable product delivery service and return options;
Conclusion	The case is an example of business model innovation although, as time passes, its originality seems to be outdated, customers' enthusiasm and the "wow" effect seem to be subsiding, and the competition copies the model with success.

Table 8: Gilt: Evaluation of Business Model Innovation. Source: Own Table.

4.6. Adopting Alternative Retail Formats to Strike a Difference – Case of Merci

Digital channels present, undoubtedly, an opportunity for brand extension, getting closer to mobile-enabled and Internet savvy customers, and for growing profits. Nevertheless, there are successful, nascent retail companies that have built up their business models without establishing presence across channels. Some retailers have identified an opportunity in adjusting their business models to include philanthropic giving as part of their business strategy (Krafft & Mantrala, 2010). Therefore, alternative bricks-and-mortar formats can form the foundation for producing significant customer value in the face of shifting consumer behavior. Creative thinking gives rise to new retail formats created around sustainability, accountability, and charity that resonate with some groups of socially oriented customers.

The sense of accountability strikes a note with the Paris based Merci[8] retail company. Merci is built on a philanthropic concept which is termed "concept store" (Manlow, & Nobbs, 2013). This means that 100 percent of the company's profits go to a charity association helping women and kids in Madagascar (Foiret, 2010). Merci is dedicated to charity efforts financed primarily by selling discounted designer clothes, home furniture, vintage jewelry but also by operating coffee shops inside its stores where customers can marvel at the stores' artful design, décor, and browse through dozens of donated books (Hodges, 2009; Santlofer, 2009). Merci combines luxury items, designed or donated by affiliated artists

[8] For more information about Merci, go to: www.merci-merci.com and subscribe to the newsletter

and designers, with simplicity and an artistic choice of store items that, together with the charity cause, create an emotional brand affinity in the stores' visitors (Kozinets et al., 2002).

The retail format of a concept store certainly resonates well with customers the world over as the example of Merci suggests (von Keyserlingk, 2013). Merci expanded the concept to the USA through a partnership with a specialty retailer, the GAP[9], in 2009 (Santlofer, 2009). This move strengthened the Gap's intent to be seen as a retailer marketing "ethical" products as part of its membership in the Product Red Label[10] program (Krafft & Mantrala, 2010). Merci, by partnering with a respected and world-famous retailer, was given a chance to introduce its store concept to a wider audience and establish itself in the U.S. retail market. Another expansion followed in 2011 when the concept was introduced in Japan through a partnership with the department store Isetan (WWD, 2011). The concept store format is not limited to stores that sell luxury goods only, though. This concept has very recently caught the interest of the retail king Walmart that tests this concept at the University of Arkansas offering financial and basic shopping services to students and university staff (Walmart, 2011; Sunnucks, 2013).

Business Model Elements	Evaluation
Customer Value Proposition	Helping disadvantaged people by purchasing luxury items creates the sense of feeling good about splashing out; Enjoying the store's cozy atmosphere in company of other like-minded customers and being surrounded by luxury items; Being part of something greater;
Profit Formula	Profits, donated to a charity, are dependent on selling luxury items that had been donated or sold at a low price to the store's owners; Additional sources of money are extra donations from customers, partners, and

[9] The GAP is a major global retailer offering clothing, accessories, and personal care products for men, women, children, and babies under the Gap, Banana Republic, Old Navy, Piperlime, and Athleta brands. For more information about the GAP, go to: www.gapinc.com http://www.gapinc.com/content/gapinc/html/aboutus.html

[10] For more information about the Product Red Label program, go to: www.joinred.com

	affiliates; Minor sales are realized by running in-store caffé;
Key Resources	Various luxury products from a broad selection of designers and artists; The store's atmosphere, design, and the idea behind the store itself; Founders' established connections in the world of luxury;
Key Processes	Constant contact with renowned artists and designers, as well as search for rising starts in the world of luxury; Establishing contacts with other retailers active in the area philanthropy; The rule of "giving" that goes against the logic of a company's existence;
Conclusion	The case is an example of business model innovation. Technology, however, is relegated to a less important position than in previous cases. Nevertheless, technology is still important in, for instance, spreading the word about the concept and reaching out to potential partners.

Table 9: Merci: Evaluation of Business Model Innovation. Source: Own Table.

CHAPTER 5 - APPLICATION OF TECHNOLOGY INNOVATIONS IN THE RETAIL INDUSTRY

Technology innovations applied in the retail industry have been considered on the backdrop of a broader discussion of business model innovation. The need to innovate and to adopt new technologies has been highlighted as a source of competitive advantage in the face of a prolonged global economic downturn and shifting customer demands. In this section, a closer focus is given to current and future technological innovations in the retail industry and what implications these innovations mean for retailers.

5.1. Digital Promotions

Several examples of innovative approaches and modern technology applications have been mentioned in the preceding sections, such as employing data analytics to extract fresh customer insights; the use of social media platforms to accost customers and spread the word about companies' initiatives and products; the relevance of mobile digital devices in providing prompt in-store shopping options and reaching customers with marketing communication on-the-go; the innovative utilization of RFID tags, interior digital walls and multi-touch screens, self-service kiosks and mobile points of sale to enhance the store experience in connection to the on-line world and to let customers, if they wish it, serve themselves.

Data analytics based on collected purchase history and loyalty data has been discussed with the examples of Tesco's Clubcard, Safeway's Just for U, and Gilt's customized email communication. Customized promotional messages delivered to the company's customers are growing steadfastly across all retail channels but most notably on-line because of the Internet's cost and wide reach benefits (Grewal et al., 2011). The opportunities associated with targeted and customized promotions have been greatly widened by innovative solutions that offer more personal, one-to-one communication between the customer being targeted and the company sending out the promotional message. Loyalty programs (e.g. Tesco's Clubcard) have gained popularity among retailers because they allow them to communicate "relevant" messages to shoppers based on analyzed card data. As these messages are based on collected and analyzed data about customers that only the company that runs the loyalty program has access to, such targeted promotional messages provide the company a competitive advantage by building

customer loyalty which may, eventually, turn into an increase in store foot traffic, basket sizes, as well as into a decrease in the number of competitors who would be able to serve the customers as effectively (Shankar et al., 2011; Snow, 2011). These messages may take the form of weekly digital flyers adjusted to the targeted group's preferences and digital or printed coupons redeemable at the cash register inside the store.

Printed coupons are distributed through direct mail or at the cash register after customers have paid for their purchase whereas digital coupons are delivered to email accounts, via SMS and smartphone applications to those customers who have opted in. The opt-in model gives them the assurance of controlling the communication process and weakening their fear of privacy invasion (Muk, 2012) while strengthening the virtue of promotional messages that deliver coupons only when customers value them. Irrespective of the coupons' format, price discounts for specific products, brands and bulk product sales are mostly offered (Zhang & Wedel, 2009).

The question retailers should, however, be asking themselves is whether or not both types of promotional offers, i.e. digital format and print format, create the same results in terms of return on money invested in these offers. Zhang & Wedel (2009) postulate that there are differences between both formats. Targeted digital promotional offers tend to be more profitable and enjoy higher redemption rates when shopping on-line whereas untargeted and undifferentiated print promotions should be the primary promotion format in bricks-and-mortar stores. These findings are supported by the relative easiness of adjusting the on-line store's interface for individual customers which is, indubitably, a tougher proposition in physical stores. Thus, channel migration between physical and on-line stores driven by sales promotions and other marketing efforts, such as loyalty programs, is becoming a prevalent behavior among customers. This poses an issue for multi-channel retailers that sell the same products both on-line and in their physical stores. Indeed, customer migration towards one channel (in hunt for deals, rewards, convenience, etc.) leads to declining sales in other channels (Ansari et al., 2008). Therefore, multi-channel retailers should have a clear understanding of customer channel migration and how it affects their bottom line before launching promotional campaigns across channels.

The multi-channel retail format constitutes a challenge in terms of cross-channel behavior of customers and of influence factors that drive this behavior. If customers are influenced by promotional messages in one channel but buy in a different channel, this obviously presents coordination issues for retailers

(Sullivan & Thomas, 2004). Nevertheless, robust knowledge about channel switching behavior is important for retailers because it creates a clearer picture of future revenues and costs incurred, where they are going to be generated and why. With respect to digital coupons, some customers may be swayed by the economic value of the coupons themselves. Other customers, however, accept digital coupons because of convenience and interaction with brands (Sichtmann, 2007; Muk, 2012).

Digital coupons became popular and widely accepted by customers on the onset of the economic crisis in 2008. Fueled by stagnating economies around the world and the growing number of mobile digital devices sold, customers have become accustomed to receiving promotional messages onto their mobile devices and to the practice of having digital coupons stored in their smartphones when out and shopping. Yet, even when the economic crises seem to be receding and growth returns, digital couponing still remains a favorite activity among customers (eMarketer, 2013). Which means that customers have grown used to receiving digital coupons even after their financial situation has improved (Shankar et al., 2011) (a point that has been mentioned with the case of Gilt and flash sales promotions). This change in customer behavior and attitudes, linked to the fallout of the financial crisis, is in fact a deeper shift caused by the intersection of changing social attitudes and technology, and reinforced by the economic environment (The Futures Company, 2013).

Digital couponing is a trend similar to that of e-commerce in the first half of 2000s. As customers become more and more trusting and comfortable of using digital mobile coupons as a money-saving activity, the market with mobile coupons is set to explode (Harris, 2010). In 2011, the market was estimated at $5.4 billion globally. An eightfold increase is forecast for 2016 when the total redemption value of mobile coupons will exceed $43 billion while store redemption rate will greatly exceed on-line redemption rate with eight percent and one percent respectively (Haselton, 2011; Snow, 2011).

A contributing factor to the estimated growth of the mobile coupon market is two-fold. First, paper coupons distributed through printed circulars, such as shopping magazines and weekly specials, are coming out of fashion because they are simply not convenient considering the fact that customers must cut them out of the circulars and “remember” to bring them to the store (Swaminathan & Bawa, 2005; Wortham, 2009; Muk, 2012). Coupons distributed through the Internet and to be printed out at home before going to the store are nearing maturity (eMarketer, 2013). Paper coupons present another drawback that decreases their redemption rates inside physical stores. Chiou-Wei & Inman (2008)

identify the physical distance customers need to overcome in order to redeem the paper coupons as a negative factor. Second, the distinction in the delivery format leads to a dramatic difference in redemption rates between printed and digital mobile coupons (Zhang & Wedel, 2009). Furthermore, digital mobile coupons can play a more important role for retailers operating physical stores if they succeed at implementing a customer-friendly, quick redemption system. A rapid coupon redemption process inside a store can create a huge difference for groups of customers who do not want to be perceived as being cheap, yet still want to enjoy the coupons' value (Ashworth et al., 2005).

To sum up, as customers always have their mobile devices on them, digital mobile coupons allow smartphone users to access promotions and sales deals real-time; deals that are relevant, location specific and timely. Retailers, accordingly, should take the time to plan carefully their foray into mobile coupon programs and weigh the benefits and costs associated with such an initiative in view of their multi-channel presence.

Potential for Business Model Innovation	Evaluation
Key Points	Digital promotions are dependent on customers' attitude towards modern technology and its use in their daily lives; Customer data collection raises an issue of privacy infringement but is vital for a commercial success of digital promotions; Data analytics skills are necessary for discovering insightful information about customers' shopping behavior and tailoring appropriate promotions;
Conclusion	Digital coupons and promotions present a potential for affecting business model innovation, especially in the years to come.

Table 10: Evaluation: Digital Promotions. Source: Own Table.

5.2. Location-based Applications and Mobile Promotions

Customers make purchase decisions out of stores, e.g. by reviewing the retailer's website and checking this week's offers, by reading user and expert reviews on-line or by consulting their friends about recent purchases they have made either on-line or in a bricks-and-mortar store. Customers also decide what to buy when they are already in the store. Irrespective of where a final purchase decision is made, retailers are constantly looking for creative ways to influence customers' decision-making process along the entire shopping cycle, i.e. from the point of raising awareness to the point of receiving payment.

When customers visit the store, they typically have a general idea of what they want to buy and where to find it. Customers do not go through each aisle of the store as that would be time-consuming and counterproductive in respect to the initial need that necessitated a visit of the store (Hui et al., 2009). Hui and Bradlow (2012) estimate that customers usually visit only one-third of the shopping area in the store which translates into lost sales for retailers because products in "avoided" areas can never find their way inside the customers' shopping carts even if the customers might show interest in purchasing them. Hence, retailers try to increase not only the amount of time customers spend inside the stores, but also the distance walked. The more time customers spend in the store and the more distance they walk, the greater the likelihood that they stumble upon a product they initially did not intend to buy. This does not mean that retailers resort to such treacherous tactics as scattering or even hiding favorite products in dark corners of the store. On the contrary, modern technologies make it easier for customers to locate desired products on store shelves while, at the same time, can increase the distance walked by informing customers of special offers or complements through mobile promotions sent to customers depending on the specific location in the store. As a result, in-store mobile promotions create the potential for growing sales from more time spent inside the store and from unplanned purchases (Bell et al., 2011; Hui et al., 2013).

In-store location-based mobile shopping applications, such as Foursquare and shopkick[11], can make use of smartphones' location-sensing features to offer product information, coupons or other marketing offers when shoppers are in a convenient position to buy (Fowler, 2010). These and other location-based applications can further be used to let customers earn reward points redeemable inside the store.

[11] For more information about both applications, go to: https://foursquare.com and www.shopkick.com

Customers earn those points by simply checking in, using such applications, each time they enter participating stores. This way, customers send out a message to the store staff and inform them that they are in the store. Moreover, such applications combine location-specific features with digital loyalty cards. This means that retailers can tap them to collect information about their loyal customers. As a result, retailers can customize promotions and specials dependent on customers' purchase history. Furthermore, some larger retailers, such as Neiman Marcus, a premium U.S. department store[12], have developed and successfully implemented their own location-based applications and added some supplementary twists (Liyakasa, 2012). The NM Service application introduces a social and more personal shopping experience by creating a connection between the customer and the store assistants. Customers can even book "appointments" with store assistants, i.e. request service at a point when they feel ready. This option gives customers the sense of control over the shopping experience. Furthermore, as store assistants have access to customers' purchase history, they can promptly react to product enquiries and questions.

The adoption of mobile shopping applications is on the rise. As part of a study of 1,000 consumers in 10 countries, Accenture (2010) finds that 48 percent of surveyed consumers have downloaded at least one application from large retailers. As the number of mobile shopping applications increases together with growing adoption by customers, so does the number of possibilities for "marketing" to customers. Grocery list applications for both iOS and Android powered smartphones, such as Grocery Gadget, Shopper or Grocery List[13], help customers save time by, for instance, automatically adding recipe ingredients to the shopping list. Other featured options usually include list sharing through email and social media platforms, barcode and QR scanners and GPS tracking. And here is the potential for retailers who manage to devise persuasive mobile promotions and coupons that make customers walk longer distance and visit unplanned parts of the store. Retailers, for example, could send out a customized mobile coupon for a product that compliments other product on the customer's shopping list. If such an offer arouses the customer's interest and makes him/her walk to other parts of the store, the probability he/she buys additional items on the way increases. Other benefit of this approach is that customers receive tailored offers specifically matching their shopping list. Unlike product relocation that affects all customers in the store, customized offers through location-based mobile applications can direct every

[12] For more information about Neiman Marcus, go to: www.neimanmarcus.com
[13] For more information about these and other shopping applications, go to: www.apple.com/iphone/from-the-app-store

single customer to an exact location within the store. This tactic limits overcrowded areas and queues inside the store that could detract from the customer's interest and enthusiasm for discovering new products (Hui et al., 2013).

Location-based applications are, however, not the only medium that can deliver customized promotions. Specific in-store locations can be promoted to customers through installing interactive touchscreens that customers with smartphones can connect to and search for particular products (Dukes & Liu, 2010).

One caveat retailers should keep in mind is, however, that targeted mobile promotions based on the customers' location, shopping lists or purchase history may be perceived as irrelevant or even annoying if the customers have to wander all over the store to find what they are looking for. Such an approach may just as well have the opposite effect and irritate customers who, next time they go shopping, bypass the store altogether.

Potential for Business Model Innovation	Evaluation
Key Points	A link is created between customers' smartphone shopping applications and retailers' promotion offers; Customers are encouraged to discover more products and visit other parts of the store which may translate into increased store sales; It is up to customers to decide whether or not they want to receive the retailer's promotions which decreases data-privacy concerns;
Conclusion	Location-based applications and promotions present a potential for affecting business model innovation, especially in the years to come.

Table 11: Evaluation: Location-Based Applications and Mobile Promotions. Source: Own Table.

5.3. Mobile Point of Sale

Sophisticated applications for smartphones and other mobile devices form one area of opportunities for retailers to institute, nurture, and sustain long-term relationships with their customers. Mobile point of sale (POS), however, opens also other opportunities for creating customer value (Aruba, 2012). Mobile POS is, in simple terms, a mobile checkout, an extension to traditional fixed POS that has been around for decades and that customers are more than familiar with (NCR, 2011; Rudolph et al., 2012).

Mobile POS, like its older fixed POS sibling, enables retailers the collection of sales data at the point of sale, i.e. on the shop floor where store assistants communicate with customers instead of at the traditional cash register where payments are processed. This gives the assistants not only a sense of mobility, but also the opportunity to sway the customer to buy even if a product is currently not on the shelf. If the assistant can check inventory levels at some other stores while engaging with the customer, the likelihood of finalizing the order rises. In the opposite case, the customer might just as well leave the store after seeing empty shelves which is a likely scenario in big retail stores (Krafft & Mantrala, 2010).

Mobile POS frees store assistants from the cash register to accept payments for products “anywhere” in the store and to spend more time with customers and to provide them with service directly on the shop floor where they have a chance to influence their purchase decisions.

Other crucial benefit associated with this technology relates to the time that customers spend waiting in lines and then at the cash register before the payment process is finalized. If the assistant can take the payment from the customer directly at the point where the customer interacts with the product, he/she can deliver additional service, e.g. recommend a complement. The assistant could, for instance, propose to the customer a purchase of an additional item to make the intended product more functional; in a fashion store that would be accessories also purchased by other customers; in a consumer electronics store that would be longer cables for a new TV set that are usually not part of the original package. This, in combination with an application that shows the assistant the customer’s purchase history (such as those presented in the previous section), could create significant opportunities for cross- and up-selling. Besides, assistants who can move around the store with mobile POS are more proactive towards the customer than those that wait for the customer to come to them (NCR, 2011).

The time that customers "waste" queuing presents another opportunity for retailers. Implementing mobile POS inside stores is a matter of promoting concern about customer satisfaction because customers, in general, tend to get anxious and even irritated if compelled to spend an unreasonable amount of time in the line (e.g. during peak hours) waiting for their turn at the cash register (Mirabella, 2011). Therefore, accepting customers' payments for products on the shop floor decreases the likelihood they leave the store irritated or, even worse, changing their mind and leaving the store without the product (the worst case would, probably, be customers leaving the store with the product but not paying for it). The question is, taking into account the highly competitive nature of the retail industry and the easiness with which digital word-of-mouth spreads across social media platforms and review websites, whether or not retailers can afford to have customers leaving the store irritated. If customers spend more time standing in the line than the expected waiting time, this may negatively affect their perception of the retailer and the likelihood of a repeat store visit (Zhou & Soman, 2003).

One possible solution to the problem of lines is, obviously, having more cash registers manned by skillful cashiers. This option, however, seems to be impractical and expensive since retailers' costs would rise by employing more cashiers and installing more cash registers (Accenture, 2012). Moreover, retail stores are busy only at certain times during the day and also depending on the season; usually in afternoon hours when people leave work and during major holiday seasons, such as Christmas.

Mobile POS could be an effective cost saving solution to the problem of queues. It is cheaper to equip assistants with mobile POS rather than to move or build more fixed POSs that still need to be manned by people (Rudolph et al., 2012; Accenture, 2012). Likewise, an inexpensive solution is a tablet mounted on a proper stand and loaded with powerful analytics software and applications that enable not only to monitor inventory in the store, but also across stores and accept orders and payments (Guillot, 2012).

It may seem that mobile POS presents a time-saving alternative to customers over more traditional cash registers. Nevertheless, several other factors, apart from time, will impact on a wider rollout of mobile POS in stores and need to be pondered by retailers (Mirabella, 2011; Rudolph et al., 2012; Accenture, 2012). The customer's age is a factor since younger customers are more receptive to the use of technology that saves their time in comparison to older customers who have grown up with the cashier processing their payment. The size of the shopping basket is another factor. Those customers who wish to purchase only a few items can be reasonably expected to avoid the lines and thus try the mobile POS.

In the same respect, customers of higher stature perceive their time as more valuable than bargain hunters and customers belonging to lower income groups. Therefore, the mobile POS could cater to their needs. These differences in customer characteristics clearly affect their tolerance for waiting in lines which also suggests why some retailers (Burberry, Home Depot, Nordstrom[14], Apple) have already adopted mobile POS whereas others will shun them (grocery stores in general) depending on several factors ranging from the type of an average customer that frequents the store, the goods sold, the retail format and to the store design.

In addition, there are also limits to the mobile POS technology itself. So far, it is inconceivable, for instance, for a store assistant to handle other forms of payment than credit cards and mobile wallets or other mobile payment applications (discussed in the next section). For a transaction to be processed by a mobile POS, strong Wi-Fi signal is a must which may present an issue in some buildings and stores with "dead zones" or in large outdoor spaces (NCR, 2011). Besides, questions arise about what happens in the middle of a transaction in case the mobile POS malfunctions due to, for instance, drop and break or out-of-battery status.

Protection of customer data and security features are elements that also influence the number of mobile POS customers will see in stores. The success of this technology rises and falls with robustness of security measures put in place by application developers, credit card companies, retailers, and other stakeholders such as local authorities and payment card industry auditors. Security guarantees, in the form of data encryption, for example, must go hand in hand with easy access and reliability.

Lastly, mobile POS, especially smartphones and tablets, are the kind of devices that may pique the interest of thieves, even in the lines of store associates. Accenture (2012), for instance, asked store managers to identify their biggest concerns with mobile POS implementation in their stores and product loss ranked among mentioned issues.

In summary, it is highly unlikely for mobile POS to replace traditional fixed POS any time soon given the technology's limitations that hinder a rollout on a wider scale. On the other hand, this technology presents an appealing extension to traditional POS in terms of increasing value to customers who cherish innovativeness, time and convenience (Guillot, 2012) and, at the same time, provides the retailer the

[14] For more information about Home Depot and Nordstrom, go to: www.homedepot.com and http://shop.nordstrom.com

ability to increase its effectiveness by supplying value-added services to customers that they perceive to be unique to that retailer (Rudolph et al., 2012).

Potential for Business Model Innovation	Evaluation
Key Points	The technology creates a stronger link between the customer and the assistant which may translate into increased sales and customer satisfaction; Customers' time is not wasted in lines; Payment options are limited to credit cards and mobile applications;
Conclusion	This technology does not currently present the potential for affecting business model innovation.

Table 12: Evaluation: Mobile Point of Sale. Source: Own Table.

5.4. Mobile Payments and Digital Wallets

There could be no discussion about the success, adoption, and increasing use of mobile digital devices, especially smartphones, by consumers for m-commerce other related payment purposes (O'reill et al., 2012). Mobile payments have become a favorite means of paying for all kinds of services, such as travel ticketing (from bus to flight tickets), product purchase and, but not limited to, finalizing payments in physical stores using smartphone "wallet" or other payment applications (Lukies, 2011). The multitude of products, services, and applications available for mobile digital devices is expected to increase enormously over the coming years and the same is anticipated for mobile payment technology (Pliskin et al., 2012). eMarketer (2012 c) estimates that the value of mobile payment transactions could rise from $635 million in 2012 to $62.3 billion by 2016 in the USA alone and quickly rise in the rest of the world too as consumers grow more familiar with the different systems available. Gartner (2012 a) estimates the current total value of global mobile payment transactions at more than $171.5 billion (a 61.9 percent increase from 2011 values of $105.9 billion) and counts around 212.2 million mobile payment users worldwide. Gartner further estimates that total global mobile transaction value could reach $617 billion by 2016 and a user base could grow up to 448 million. Companies, retailers in particular, would be wise

to heed these staggering numbers and the technology behind them; even more so as m-commerce is predicted to achieve by 2016, what e-commerce has achieved in the last fifteen years (O'reill et al., 2012).

SMS and Web/Wireless Application Protocol (WAP) remain the dominant access technologies throughout the world. With respect to SMS, developing and emerging countries account for the largest user bases due to lower incomes that prohibit local customers from buying more advanced phones and also due to underdeveloped communication networks. Nevertheless, this picture is changing fast and, already now, China is the biggest smartphone market with 26.5 percent global market share (Reuters, 2012). Web/WAP access is forecast to increase to 80 percent and 88 percent in Western Europe and in North America by 2016 respectively (Gartner, 2012 a). Embedded Chips coupled with technologies like radio frequency identification (RFID), near-field-communication (NFC), global positioning systems (GPS), etc., have enabled many applications (Kaur, 2012). Near-field-communication[15] enabled smartphones can be used by customers as payment devices for all kinds of purchases inside the stores that have NFC-terminals.

NFC technology enables a contactless, short-range, encrypted communication between NFC mobile devices, such as smartphones and tablets, and NFC-terminals in retail stores such as checkouts or digital displays. This technology opens up the possibility of wire-less data transfers between devices that may be active or passive. A passive device, such as an NFC tag on a piece of clothes in a fashion store, contains information that other devices can read but does not read any information itself. Active devices can read information and send it. An active NFC device, e.g. a smartphone, can collect information from NFC tags and also exchange information with other compatible phones or devices and can even alter the information on the NFC tag if authorized to make such changes. Hence, this technology transforms mobile devices into multi-purpose devices (Lukies, 2011).

As mentioned earlier, NFC is not the only technology on the market for making mobile payments. Radio frequency identification (RFID) technology is similar to NFC but has a longer transmission range. This is probably its biggest disadvantage in comparison to NFC which is designed for use by devices within close proximity to each other. Besides, even if somebody managed to intercept the data communication between both devices, unique data are used to authenticate the mobile device each time a new

[15] For more information about NFC technology, go to: www.nearfieldcommunication.org/

payment is made. Such data authentication measures hinder potential criminals from fraudulent transactions (Hayashi, 2012).

Let's turn the attention to specific applications of NFC technology and to the ability of mobile technology to help customers manage their money on the go. Mobile payment applications are easy to setup and are fast becoming a popular way to speed up the selling process which benefits both the customers and the retailers. Retailers then get an extra benefit in the form of valuable customer information, such as the customer's e-mail address for sending an e-receipt (Schulz, 2012). Therefore, mobile payments could allow merchants to acquire more information about their actual and potential customers than is possible with traditional payment methods. Consequently, retailers could be in a better position to increase the scale and sophistication of their targeted mobile marketing promotions, as discussed before. With regards to specific applications and technologies, most of the excitement centers on point-of-sale payments using NFC-enabled smartphones and mobile applications such Google Wallet, Square (mentioned in the previous section), Apple's Passbook, PayPal Application and PayPal Here Application or MasterCard's PayPass.

As is clear, there are several market players and boundaries between them are quickly blurring as each wants to offer a more comprehensive mobile payment solution that would bring together the NFC technology, mobile applications, and the on-line world so that customers can use such solutions across channels and reap the benefits. With contactless payment methods based on the NFC technology, the consumer need only tap or wave his/her mobile device in front of a reader to make a purchase which allows for a speedier check-out process than when paying with more traditional plastic cards (Hayashi, 2012).

NFC-based Google Wallet[16] has evolved from a mobile-only solution into a digital wallet that allows its users to store payment information in the cloud and use their smartphones in stores with NFC terminals. Moreover, the digital wallet works like an ordinary wallet in the sense that users can store their credit cards, debit cards, loyalty cards, insurance cards, pharmacy cards and other membership cards in the digital wallet instead of carrying around an ordinary wallet full of plastic and paper cards. Plus, the digital wallet can store mobile discount coupons which users can easily redeem in stores, both bricks-and-mortar and on-line, collect the benefits and loyalty points. On top of that, customers can be reasonably

[16] For more information about Google Wallet, go to: www.google.com/wallet/index.html

expected to be engaged across a lot of different retailers which decreases coupon redemption rates because customers simply forget them home – a problem the digital wallet deftly solves (Farb, 2011). Therefore, mobile payments are considered to be more convenient than traditional payment methods in terms of portability and will, eventually, allow customers to replace multiple pieces of plastic with functionality embedded inside their phone (Hayashi, 2012; Kaur, 2012). There lies the potential of NFC chips; in having intelligent smartphone chips that connect to POS devices and create a better, smarter experience for the customers (White, 2011).

Usefulness of Google wallet is further stretched to e-commerce because users can conveniently shop across the Internet and pay with the digital wallet. This means that users do not have to create separate accounts on each retailer's website. Instead, they sign in into their Google Wallet account only once and then they can shop at participating retailers' websites. Another benefit of this wallet is the automatic synchronization with other Google applications, such as Google Offers[17], which give users even more reasons to remain "hooked". In addition, some users might appreciate the possibility to check the status of their funds prior to making a purchase, even in a bricks-and-mortar store and without access to a personal computer. Customers who have hard times to control their spending will appreciate this option as it opens the opportunity to choose the payment instrument with the most favorable financial impact, e.g. the instrument with the lowest fee, highest reward, or in the case of credit cards, most favorable terms for repayment (Hayashi, 2012). Moreover, spending thresholds can be set for different categories of spending regardless of which payment instrument is to be used.

In order to bring Google Wallet closer to a wider base of retailers and potential users, Google has successfully partnered with Citi Bank, with credit card companies such as MasterCard, Discovery, American Express and Visa, and with a mobile operator Sprint (Teicher, 2012). Hence, Google Wallet has transcended several market sectors from banking to payment processing and to commerce. The establishment of partnerships with renowned financial institutions provides for increased perception of security in the eyes of users who can fund their mobile payments directly from their bank account. Such payments are processed by a secured system for direct electronic transfers between bank accounts which adds to users' peace of mind (Hayashi, 2012). Furthermore, by partnering with Visa and

[17] For more information about Google Offers, go to: www.google.com/offers/customer/how-it-works.html

MasterCard, more merchants will be able to accept NFC-based mobile payments because terminals that accept chip cards, promoted by both card companies, can also accept NFC-based payments.

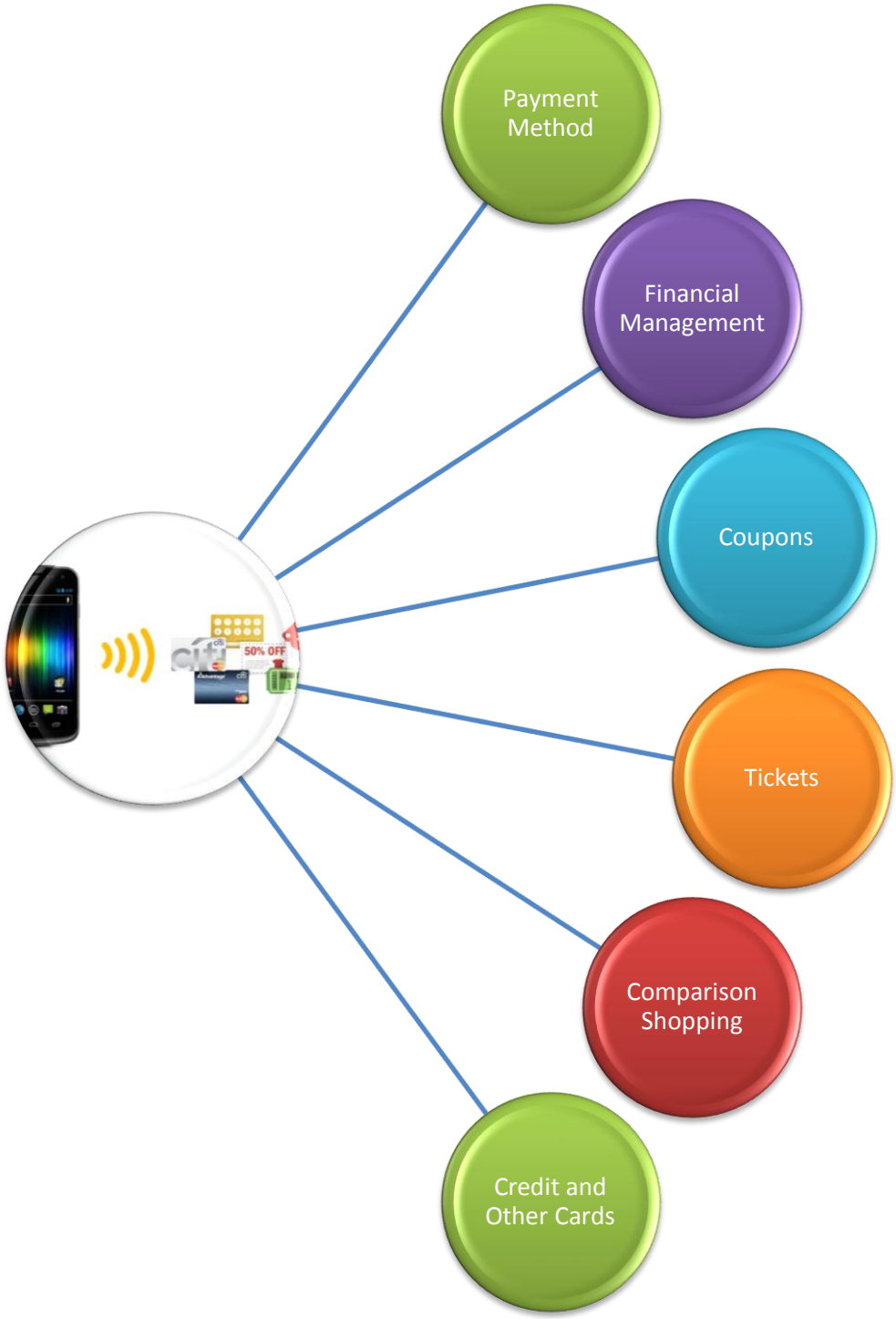

Figure 12: Digital Wallet's Retail Applications. Source: Own Figure

Another NFC-based mobile wallet, ISIS[18], is a joint venture including three of the largest U.S. mobile carriers—AT&T Mobility, Verizon Wireless, and T-Mobile USA. ISIS Wallet is in many aspects similar to Google Wallet and, apart from mentioned mobile providers, participating credit card companies include American Express, Discovery, Chase and MasterCard. What distinguishes it though is the Isis Cash card[19] that customers can use for payments in retail stores just like any other plastic card. Even though this digital wallet has yet to increase scale, only customers and merchants in Austin and Salt Lake City in the USA can use it so far, it has drawn the attention of other big American banks, such as Bank of America Corp. and Wells Fargo & Co., which undoubtedly gives credence to its potential success (Johnson, 2011). ISIS Wallet's open approach to several banks is going to bring in more users, both end-users and participating retailers, and thus increase scale. Banks also stand to profit by delivering loyalty offers and expanded services tied to mobile payments made through the wallet even if they operate their own digital wallets, such as American Express and its Serve wallet (Kharif & Moritz, 2012; Wolfe, 2012).

PayPal[20] is an application that differentiates itself from both Google Wallet and ISIS Wallet by giving customers the option to link their bank account, debit, and credit cards to their PayPal accounts and thus pay on their terms. PayPal account holders simply activate their accounts for in-store checkout and then enter their mobile number or swipe their PayPal payment card to pay at the cash register in a store using the funds in their PayPal account. PayPal users can, however, also tap their credit and other cards linked to their PayPal account should they need extra money. On top of that, store coupons and offers are automatically applied when PayPal users pay. Plus, PayPal states that the seller never collects the user's financial information.

The PayPal Here mobile application provides specific features to both PayPal users and partnering retailers. Users can, for instance, snap a photo of their check and immediately upload it to their PayPal account whereas retailers can use the application to process checks electronically on the spot. Retailers can also accept credit card payments with a phone attachable card reader and, of course, PayPal money transfers that utilize email address or a phone number to effectuate the payment. In early 2013, PayPal further strengthened its position in the mobile-point-of-sale market, where it competes with Square, by expanding its PayPal Here mobile card reader technology to the iPad and by updating the application

[18] For more information about ISIS Wallet, go to: www.paywithisis.com
[19] For more information about ISIS Cash card, go to: www.visaprepaidprocessing.com/Isis/Cash/Pages/Home.aspx
[20] For more information about PayPal application, go to: www.paypal.com/us/home

with product bar code scanning technology (Camhi, 2013). These features are also what elicits concerns from bank institutions since PayPal combines its own money transfer options with location-based digital advertising, retailer inventory checking options, and overall popularity among retailers by offering digital technologies that help drive in-store sales through developing various applications specifically targeted at bricks-and-mortar stores (Woodward, 2011; Valentine, 2012; Dembosky, 2013). Moreover, PayPal offers its users the option to spread out payments over time with its Bill Me Later financing option which basically replaces the usefulness of a credit card issued by banks.

Last but not least, financial metrics for the year 2012 verify PayPal's rising prominence in the field of payment transactions as PayPal doubled its revenues throughout the preceding three years to $14.1 billion and the total value of transactions reached $145 billion of which $97 billion were realized through partnering merchants[21].

Even though smartphones are poised to become critical delivery tools of m-commerce products and services, as the above discussion and even past predictions suggest (Leppaniemi & Karjaluoto, 2005; Schierz et al., 2010), payment and data security, as well as privacy protection guarantees are necessary to build trust among even a wider proportion of mobile payment users (Chau et al., 2007). This, perhaps unsurprisingly given the novelty of smartphones, poses a critical challenge in terms of security and privacy risks that lead to customers' distrust towards mobile payments and may dissuade some from adopting this yet unproven payment method (Chen, 2008). Indeed, as is the willingness to provide personal information an important factor for the success of e-commerce, so it is a crucial factor for m-commerce. In this respect, trust in the vendor is a key inhibitor of both transaction and payment based m-commerce services (O'Reilly & Duane, 2010). As findings suggest, data security and information privacy are top of mind of customers (Mallat, 2007; O'reill et al., 2012). Therefore, customers' privacy concerns will have to be addressed first to win their trust and, subsequently, grow the size of the mobile payment market.

To realize the full potential of m-commerce, and mobile payments in particular, authorities and rules-setting organizations will need to be part of the dialogue to put adequate legislation and assurances in place in order to sway even more customers to make mobile payments. The active participation of

[21] For more information about PayPal's financial performance, go to: www.paypal-media.com/assets/pdf/fact_sheet/PayPal_Fast_Facts_Q412_Final.pdf

authorities in this area can play a decisive role for customers who, in a rather impersonal domain of m-commerce, hold more trust if an objective third party is present (O'reill et al., 2012). Indeed, the pervasiveness of mobile digital devices combined with Internet connectivity, GPS, embedded chips, location information, and integrated sensors provide an excellent platform to collect data about individual customers and their whereabouts (Kaur, 2012). What may seem as somewhat innocent collection of behavior data of customers through the process of mobile payments at first, is in fact a digital gold mine with credit and other card numbers, personal identities, spending data and other sensitive information that is just waiting to be mined by application developers, credit card companies, marketers, retailers and, unfortunately, uninvited "guests" such as hackers (Savitz, 2013).

Another aspect that still slows down the boom in m-commerce and mobile payments is a lack of infrastructure on the part of retailers. Unless retailers equip their stores with NFC terminals or their staff's mobile devices with payment applications and solutions, this will create yet another obstacle on the way to a speedier check-out process and more convenient shopping experience. To add to this problem, retailers and customers have to ponder which solution to choose. Customers face this choice when deciding what operating system, e.g. iOS or Android, will power their smartphones. Retailers, however, have to make a calculated decision as the mobile payment market is flooded with solutions that are not always mutually compatible. Unless various solutions and systems can communicate together, this will only lead to confusion and pose issues for retailers in the long run (Valentine, 2012). Should a retailer decide for a mobile payment solution that will not be around one year from now, it will backfire in the form of a lost opportunity and investments (Marks, 2012). Retailers, apart from the preferred mobile payment application, also have to consider the technology that "powers" those applications because smartphone manufacturers favor different approaches to mobile payments. Apple, for instance, released its latest iPhone 5 to the market in September 2012 and did not embed the NFC technology in it (Stein, 2012; Subramanian, 2012).

Retailers are, however, not the only party that stands to lose. Customers cannot and will not experience the full potential of mobile payments if they are chained to only one provider because one company, even of the size of Google, can hardly cover the whole market. Therefore, there is a need for the formation of larger cross-industry alliances that would involve big players from the financial, retail, mobile, and other sectors that have the resources and established market positions to build a unified

network that would be open to more mobile payment applications and technologies because, as James Anderson, Group Head and Senior Vice President at MasterCard Worldwide, aptly said "*a single wallet is unlikely, at least in a free market*" (Adams, 2012). No one party can own the mobile wallet or another payment application without cooperating with other parties. However, for all parties to be willing to participate, it is necessary to establish fees, rules on ownership of consumer data, and rules on liability for fraud losses that allow each party to cover its costs and earn a reasonable profit (Hayashi, 2012).

The mobile wallet is here to stay as product and service innovations, in general, accelerate. Nevertheless, mobile wallets will live or die on the utility, reliability, security, and ease of use they provide to customers and whether or not all involved stakeholders (retailers, financial institutions, developers, etc.) can reap benefits and guarantee security in the process (Savitz, 2013).

Lastly, it takes a while for people to change long-held habits in general, and it may take a long time in some countries before a majority of consumers embraces mobile payments (Yurcan, 2012).

Potential for Business Model Innovation	Evaluation
Key Points	Digital wallets combine the functionality of mobile payments with digital couponing, digital storage of various cards and loyalty membership programs into one solution; Digital wallets are "portable" between mobile devices, as well as on-line; Both mobile payment applications and digital wallets suffer from not-yet-developed retail infrastructure, from too many players each offering a proprietary solution, data privacy concerns;
Conclusion	Both mobile payments and digital wallets currently do not present the potential to affect business model innovation. Nevertheless, the situation may be vastly different in just a few years' time.

Table 13: Evaluation: Mobile Payments and Digital Wallets. Source: Own Table.

5.5. Personal Shopping Assistants

As discussed in the example of mobile point-of-sale, providing high quality personalized customer service on the shop floor is a challenge if the store assistants spend more time manning the cash register rather than with customers. Personal shopping assistants could alleviate the issue of receiving quality service inside the store at the moment when the customer requires it.

Personal shopping assistants are touch screens with built-in wireless connectivity to ensure mobility and they remind of tablets both in shape and functionality. The assistants can be affixed on top of shopping carts hence they "accompany" the customers on their shopping journey and enable the customers to access on-line content using standard browser-based technology. Content in this regard usually means the retailer's website with product offerings, digital flyers, events happening in the store, etc. Apart from wireless Internet access, these devices offer UPC (Universal Product Code) scanning features, layout and navigation capabilities of the store which may become extremely handy in big box stores (Kalyanam et al., 2010).

Personal shopping assistants have been deployed in Real's Future Store[22], part of the METRO GROUP, where loyalty card holders can try and test this technology. The customers activate the assistant by scanning their loyalty cards which immediately gives them an overview of the store's promotions, past purchases, and suggested shopping lists accompanied by information of product location within the Future Store.

Sales-promotion oriented and cost-conscious customers will appreciate the UPC scanning feature of the assistant. This feature keeps a running total of current product purchases so that the customers know at every point how much they have spent so far. In addition, scanning each product before putting it into the shopping basket reassures the customers of the product's correct price. This eliminates the issue of unexpected surprises at the cash register when the customers suddenly find out that the product they want to purchase is actually not on sales, a common problem that relates to inaccurate or misplaced price labels. Moreover, scanning the products also serves as a crosscheck with the suggested shopping list, i.e. the customers see exactly what products are still needed for a specific recipe which removes the

[22] For more information about the Future Store Initiative, go to: www.future-store.org/fsi-internet/html/en/375/index.html

later disappointment of discovering that a certain ingredient is missing because the customer has simply forgotten to buy it.

In connection to recipes and products on sale, the assistants can also serve as a tool for cooking inspiration. The customers scan the product barcode of the discounted product to access a list of possible recipes to choose from. They then narrow down the list by entering their personal preferences and, for instance, food allergies which eliminates those recipes that might contain health-threatening ingredients.

Time-constrained customers are likely to identify the speedy checkout process as the greatest benefit the assistants offer. Since the content of the shopping basket is pre-scanned, the customers need not take their shopping out of the basket and place the articles on the conveyor belt. The overall payment process is also expedited because data stored on the assistant are transferred to the store's cash system which means that the customers can pay the moment they approach the cash register area.

Apart from customers, retailers stand to reap benefits as well. After Metro announced the results of its pilot personal shopping assistant project, it became obvious that this technology has the potential to boost product sales. While an average shopping trip amounts to 9.7 articles in the shopping cart worth €18, the average shopper using the personal shopping assistant purchases 13,6 items worth € 30,80 (Kalyanam et al., 2010, p.155).

Potential for Business Model Innovation	Evaluation
Key Points	The technology provides various benefits from information about product location and characteristics, store sales, shopping tips and suggestions, to quick check-out process; Retailers gain access to even more data about their customers; Customers using this technology seem to spend more money;
Conclusion	Even though this technology offers several benefits, it is unlikely to lead to

	business model innovation.

Table 14: Evaluation: Personal Shopping Assistants. Source: Own Table.

5.6. Electronic Price Tags

In the preceding section, the problem of mispriced products has been mentioned in connection to products deemed by customers to be on sale. In this section, electronic price tags are discussed as a possible technology to ease this problem that applies, on average, to 2 – 3 percent of products in a retail store (Kalyanam et al., 2010).

There are several benefits to the technology of electronic price tags. The customers will recognize the benefit of accurate pricing that saves them the trouble at the cash register. Potential arguments between the customers and the cashier can be avoided while other customers, still waiting in the line, are not delayed by this inconvenience. This contributes to the overall pleasant shopping experience and also decreases the likelihood of returned products that customers either leave directly at the cash register or return later due to a higher-than-expected price.

In addition, labor cost savings can be realized. The less mispriced products are returned, the more time the store staff can spend attending to other tasks at hand. Greater labor cost savings, however, are achievable by rolling out price changes from a centralized computer system across the whole store instead of replacing paper price tags manually by the store staff. In this regard, prices can also be adjusted more frequently during the day to reflect various store price strategies. Prices can be adjusted, for example, to higher- and lower-income groups of customers visiting the store at certain hours of the day. Those customers who frequent the store in late afternoon and evening hours could theoretically be charged higher prices as they can be reasonably expected to belong to the “9 AM – 5 PM” customer group with office jobs who do their shopping after work. Likewise, older and less affluent customers usually visit the store in morning hours. Thus, lower prices in the morning hours may be the appropriate price strategy. In addition to price, stores can also change the quality of service by time of day. Therefore, if customers who are more affluent visit the stores in late afternoon and evening hours, higher prices and more staff can be an appropriate price strategy for the store (Kalyanam et al., 2010).

Nevertheless, similar store price strategies may backfire if customers resent the notion that they are charged more money for the same product that somebody else bought in the morning. Even though

price discrimination dependent on the time of the day, month or season is a common practice in some sectors, such hospitality and travel, is should be tested carefully before scaling up this approach.

Potential for Business Model Innovation	Evaluation
Key Points	Electronic price tags are a convenient replacement for traditional paper price tags and offer the retailer the option to change prices quickly; They "eliminate" customers' complaints about incorrect product prices; They free stores' personnel to attend to other tasks, i.e. they present time and labor savings;
Conclusion	Even though electronic price tags have several benefits, this technology is unlikely to lead to business model innovation.

Table 15: Evaluation: Electronic Price Tags. Source: Own Table.

5.7. Radio Frequency Identification (RFID) Technology

RFID technology has briefly been described in the section dedicated to digital promotions. Let's now have a closer look at this technology and its application.

Traditionally, RFID systems consist of three parts - a reader, a transponder and a computer network. The reader remotely identifies a small transponder by sending out radio signals on a continuous basis. The transponder is attached to a product and responds to the signal. This information is then communicated through a computer network that processes the data (Kalyanam et al., 2010). Chipless forms of RFID tags that use material to reflect back a portion of the radio waves beamed at them are also in use (RFID Journal, 2013). RFID technology, together with UPCs, benefits the retailers in several ways and presents them with opportunities whose potential is yet to be discovered.

Firstly, RFID improves goods traceability within the whole supply chain which means that retailers can track the flow of goods in the physical distribution channel at any given point which should lead to reduced inventory levels (Kalyanam et al., 2010). This functionality of RFID also decreases the likelihood

that some products get lost in any particular location. Furthermore, it eases the issue of locating specific products in big warehouses and retail stores while, at the same time, the store personnel can check if each product is in its designated location. As a result, instances of misplaced products and stock-outs should be less frequent and lead to higher customer satisfaction. Walmart, for instance, successfully placed RFID tags on individual garments that can be read by a hand-held scanner (Bustillo, 2010). This ensures that shelves are optimally stocked and inventory tightly watched. Several other U.S. retailers, including American Apparel Inc., J.C. Penney and Bloomingdale's, have begun experimenting with RFID tags on clothing to better ensure shelves remain stocked with sizes and colors customers want. European retailers, notably Germany's Metro Group and UK's Marks & Spencer, have already embraced the technology. Marks & Spencer already used RFID tags in 2001 when it spotted the opportunity for improved deliveries of fresh food between its suppliers and distribution centers to maintain freshness and food safety (Violino, 2013). As the RFID technology develops and moves forward, it becomes more accurate and cost-effective to implement. Therefore, Marks & Spencer's plans are to tag all of its apparel, home, and hard goods worldwide by spring 2014.

Secondly, RFID is the kind of technology that customers will appreciate for its time-saving potential at the cash register. Products with attached RFID tags need not be scanned separately but can remain placed in the shopping basket as the customer passes through a doorway equipped by appropriate readers. Hence, the whole content of the shopping basket is visible to the cashier in a matter of a few seconds. This speedier checkout process, in comparison to the traditional scanning of UPCs, saves labor costs and adds to the customer satisfaction by, arguably, shorter checkout lines and less time spent waiting in the lines.

Thirdly, retailers can use the RFID technology to differentiate themselves from their competitors by augmenting the value hidden in the products. RFID captures and stores information over time which means that product origins, for example, can be traced and made accessible to customers who are willing to spend extra money for products that come from organic farms that grow their harvest and raise their livestock in a sustainable way. If retailers are able to track food products all the way from the farmer to the end-consumer, all parties will realize benefits by having more control over what they source, deliver, stock, sell and finally consume. The meat industry, based on the latest developments

surrounding the horsemeat scandal[23] and past outbreaks of the mad cow disease[24], could benefit greatly by being able to track the complete supply of meat from various purveyors. In all probability, meat-related diseases and scandals that inflict the whole distribution channel could be eliminated by implementing product-tracking technology, such as RFID. On a related note, customer satisfaction will surely be elevated by the possibility of remotely checking the expiry dates of all food and perishable items without human error or additional labor costs, and in a speedy manner.

Irrespective of the aforementioned pluses, the RFID technology also has its minuses. Privacy advocates contend that retailers could misuse this technology to track customers' location not only within the store, but also outside of the store. The RFID tags are trackable even after they have been removed from the products bought by the customers; an issue that marketers could potentially take advantage of. As RFID tags are being attached to more and more products, and even become embedded in personal ID cards (Bustillo, 2010), customers' movements could be tracked every time they find themselves within the reach of the RFID reader. A Canadian company Moxie began looking into a solution to track consumers' locations within stores, in order to create a record of behavior specific to particular sections of a sales floor, and the products on display in each section. Although the initial idea is to explore which displays attract the most customer interest and which items are subsequently purchased by equipping shopping carts with RFID tags, the tags could just as well be embedded in customers' loyalty cards that leave the store whereas the shopping carts stay in the store. Subsequently, customers could be tracked even after the shopping journey is over.

Potential for Business Model Innovation	Evaluation
Key Points	RFID technology has various applications in the retail store but also in the whole supply chain; RFID tags can contain all kinds of product-related information that customers could

[23] For more information about the horsemeat scandal, go to: www.bbc.co.uk/news/world-europe-21457188
[24] For more information about the mad cow disease outbreak, go to: http://edition.cnn.com/2003/US/12/23/mad.cow/

	access using their mobile devices; Privacy issues surround this technology;
Conclusion	RFID technology has the potential to affect business model innovation now and even more so in the future.

Table 16: Evaluation: RFID. Source: Own Table.

CHAPTER 6 – CONCLUSION AND A LOOK AHEAD

6.1. Can innovations in retail business model lead to a sustained competitive advantage?

Technology is a driving force of change and the cases discussed in preceding sections offer a number of lessons in terms of business model innovation as a springboard to a sustained competitive advantage.

Primarily, they highlight the crucial role technology plays for retailers who want to stay relevant to their current customers and cater to the needs and wishes of new ones. The case of Burberry, among others, is an evident example of a legacy fashion retailer that has built its success on quality luxurious fashion products and brand heritage since its foundation in 1856. Nevertheless, as time passes by, Burberry has kept pace with innovations in the areas of store technology, as well as consumer technology. Consequently, what seemed unthinkable in the first half of 2000s became reality in the second half and gains momentum today. At first, it was a far-fetched idea to sell luxury fashion products on-line as it ran contrary to the proposition of memorable shopping experience. Nonetheless, in the second half of 2000s major luxury brands embraced the Internet as a new sales channel. Burberry was at the forefront of this shift in the luxury market and successfully transformed a decades old approach to selling luxury fashion items through the use and application of modern technology – tablets and smartphones - while, at the same time, staying true to its core value proposition and products. Burberry continues to benefit from the first-mover advantage thanks to initiating business model innovation early on. Burberry has seamlessly stretched its business and the brand across several channels while strengthening its position in the luxury fashion market.

Cases of Walmart, Tesco, and Safeway have been discussed to further support the assumption that innovating in retail business models leads to a sustained competitive advantage. These retailers have been present in the market for decades and are still going strong even in the face of local or international competition.

6.2. Do new technologies have the potential to influence the introduction of completely new retail formats?

The cases of Mix My Granola, chocri, and My M&Ms highlight the ongoing trend towards the customers playing a crucial role in co-creating the products and brand experiences; experiences that transcend the physical store and take place in the digital world. The connection, however, between the store experience and the on-line experience is still crucial. Customers can visit one of many M&Ms branded stores all around the world to purchase the colorful chocolate candies and enjoy the brand. Nevertheless, the Internet in combination with mobile digital technologies has introduced a completely new perspective to thinking about retail formats. In consequence, the product is not "chained" anymore to a built up network of physical retail stores. The product can be bought and even more importantly adjusted to the wishes of each individual customer on-line. This, undoubtedly, changes the retail format of each retailer. Even legacy retailers, such as Walmart, Tesco or Safeway, have embraced the potential opportunities offered by technology to change their retail formats. Walmart, for instance, is not anymore a big box retailer with several hundred stores across the USA. It is a multi-channel retailer offering various products and services in several hundred physical stores of various formats and sizes with extensive on-line presence. Tesco, apart from its on-line presence, is not anymore a discount retailer counting solely on competitive product prices. It is a retailer analyzing collected data about thousands of loyal customers to create customer profiles and to release targeted promotional messages that speak positively to customers. Going back to the case of My M&Ms, the retail format has changed from operating branded stores only to creating an on-line presence where customers are encouraged and free to experiment with the brand and the product. The cases of Mix My Granola and chocri further substantiate the notion that new retail formats come into existence by putting modern technology into good use.

In consequence and with reference to the previous question, ongoing business model innovation leads to a sustained competitive advantage while technology serves as an enabler to a change in the way the retailers are structured (change of retail formats, adoption of new sales channels, taking on a different position in the value chain, etc.), and in the way they carry out their business.

6.3. What are some of the key technologies and trends that have the potential to change the way we shop in retail stores in the future?

The introduction of new in-store technology can have an immense impact on the overall retail store shopping experience. A wise application of modern technology inside retail stores can lead to enhanced customer convenience, service, and time savings that time-sensitive customers are likely to appreciate and welcome. In this respect, RFID technology and personal shopping assistants combine all of these elements. Firstly, the customer is not subject to long lines at the checkout and does not waste time. Secondly, the customer is well-informed of current store sales and product offerings. Thirdly, the customer discovers new products and product information which piques interest and translates into higher spending and profit per customer.

Self-service checkouts and RFID technology are likely to benefit both the customers and retailers. On one hand, customers, who are not keen on personal service, are expected to embrace the self-service checkouts which will save them time and contribute to their satisfaction with the shopping process. On the other hand, retailers, by installing these checkouts in their stores, will reap the benefits of decreased labor costs and increased efficiency. RFID technology also renders labor-cost savings and increased efficiency achievable as it streamlines processes in the retailer's supply chain and inventory management. The timesaving potential of this technology for customers is then realized at the cash register as products do not have to be scanned again. Hence, both technologies can be reasonably expected to be adopted by more and more retailers which also means that more and more customers will be in a position to benefit from the use of these technologies in the retail stores.

Nevertheless, as technology adoption by retailers will surely rise across different retail formats and across multiple sales channels in the foreseeable future, it is unlikely to secure a lasting competitive advantage in the long run. The reason for this proposition is quite simple. If some technology helps lower the costs of operating stores of one retailer, other retailers, especially those whose primary value proposition centers on price, will follow and adopt the technology to remain cost competitive. Those retailers, whose primary concern is an enhanced customer experience, will implement technology to reinforce their position and to further differentiate themselves from price discounters. Cost savings, increased efficiency, and improved customer satisfaction will, however, lead to a growth in profitability for those retailers who quickly introduce modern technology in their stores, at least in the short run.

As a result, technology grants several opportunities in terms of costs, efficiency, and customer satisfaction but also in terms of product and process innovations. Moreover, technology presents opportunities, and arguably challenges, to retailers' business models. Therefore, keeping abreast of new technological developments, as well as monitoring those technologies actively used by both the retailer's customers and competitors is a vital, live-or-go-bankrupt mission.

Customers bring technology, their mobile devices, to the store and expect to be able to use them while going about their shopping. Anticipating how customers' are going to use technology in relation to shopping and modifying the business model accordingly have helped such global retailers as Metro Group, Target, Tesco, and Walmart build competitive advantage.

Hence, technology itself is one side of the coin whereas how customers use the technology and what benefits they expect to realize is the other side. Technology, in the hands of customers, facilitates access to product information and product reviews that customers can tap in a matter of a few seconds to make informed purchase decisions and share their experience with thousands of other customers. Accordingly, traditional bricks-and-mortar retailers are faced with circumstances that reach beyond the walls of their stores to the on-line sphere. Challenges for retailers to cope with these shifts are rising as a result. The additional amounts of data to be processed and analyzed from various sources - point of sale, social media and corporate sites or product review sites – add to the challenges since the volume of data rises faster than retailers' ability to transform them into workable solutions and actions, such as targeted and customized mobile advertising and digital couponing or loyalty programs connected to mobile digital wallets.

In conclusion, the following technology trends must be complemented by delivering on what customers truly want and value by not only listening to what customers say, but also by analyzing their purchase behavior. Consequently, each retailer's business model is only as good as the suppositions each retailer makes about what customers expect. In some instances, the situation may require radical business model innovation whereas a process or product change may be sufficient in other. Striking a balance and maintaining organizational flexibility, together with the monitoring of technology and customer trends, are important aspects of keeping the retailer's business model current and the whole concept of bricks-and-mortar stores valuable in the future.

The following list presents the trends retailers should keep their eyes on:

- On-line shopping will continue to grow and, more importantly, the on-line competition will intensify as it is becoming easier to take the bricks-and-mortar retail business on-line. Enter Tictail, for instance, is a Swedish company that simplifies the process of starting an on-line shop for other businesses by combining its e-commerce platform with PayPal (The Economist, 2013). This means it will get more complicated to distinguish Internet-only retailers from bricks-and-mortar stores with online portals. It also means that showrooming may gain even more attention as more stores will sell their products through the Internet (Heller, 2011). Lastly, mobile platforms for shopping online and flexible product delivery options of on-line retailers will have bricks-and-mortar retailers see their store sales decrease unless they create a clear and differentiating value proposition that exploits the physical store advantages in a more fundamental way (IBM, 2012);
- Omnipresence across channels will drive more sales if bricks-and-mortar retailers can constantly and promptly deliver on their customers' needs and wishes (Rigby, 2011). Customers will continue to demand broad selection, rich product information, customer reviews and tips and flash sales that are characteristic of on-line stores. Nevertheless, customers will also want personal service, the ability to touch, smell and otherwise interact with products inside physical stores while enjoying the social experience of shopping with friends. Integrating the bricks-and-mortar shopping experience with mobile technologies, the Internet, catalogues, TV shopping, and other sales channels spells the opportunity for bricks-and-mortar retailers to negate the price and costs advantages of on-line behemoths, such as Amazon.com and Ebay. An indivisible part to the omni-channel approach is also various product delivery options (Heller, 2011). If bricks-and-mortar retailers are to beat Amazon.com's free product delivery subscription-based option, they will have to experiment with in-store pickups or pick-up depots for orders submitted on-line and devise functional return policies for products bought across channels;
- The growth in smartphone and tablet shipments will only intensify as populations in developing countries increase their incomes and cheaper versions of both devices are introduced (IDC, 2012). The sales of these mobile devices will further eclipse the sales of personal PCs which means that retailers will need to optimize their on-line presence and promotional efforts to the smaller sizes of screens of mobile devices;

- Sales of luxury products, traditionally confined to bricks-and-mortar stores, will be increasingly happening over the Internet (eMarketer, 2013). On-line pure plays, department stores' retail sites, and brands with their own online stores will be offering more luxury products on-line to cater to the demands of luxury-seeking but time-strapped customers. As has been mentioned in the previous example, the format of the websites will have to be adjusted to mobile devices to ensure true luxury shopping experience even on mobile devices;
- With more mobile devices in the hands of customers, retailers can expect the role of the customer, and the information he/she can access, to be strengthened even further. Customers will demand more transparency into, for example, the origins of the products, how they have been sourced, what ingredients and substances have been used in the production process, etc. In this respect, increased transparency may lead some customers to shift demand more rapidly and more frequently to retailers that do not obstruct the access to information. Customer loyalty programs will have to reflect this scenario because maintaining loyalty will become harder (IBM, 2012);
- Mobile-based solutions, applications, store sensors and connectivity to social media will be a must-have for bricks-and-mortar retailers. These solutions will not, however, improve store sales if a store assistant is not trained on using them. Therefore, the assistant's role will be redefined from a person who takes customer orders and provides general assistance to a person who is a specialist in using mobile devices and solutions. A person who can quickly recommend relevant products and offer additional services based on customers' purchase history, loyalty data and the store's inventory levels. A person who knows what the customer might be looking for the moment he/she enters the store and checks in with a mobile application. Professional and personal customer approach is what will continue to be the feature that distinguishes bricks-and-mortar retailers from on-line pureplays. If executed to the highest standard, it can also be a competitive advantage. Therefore, retailers should strive for attracting and retaining congenial and tech-savvy assistants which means that talent recruitment will experience increased rivalry;
- The influx of product, customer, and sales data from various channels will continue to be a challenge for retailers who find it hard to cope with data volume, variety, velocity and complexity (Gartner, 2012 b). To overcome the big data challenge, retailers will have to invest and come to grips with data analytics software that helps them make sense of the data and draw workable

insights that will benefit the retailers in many areas, such as product assortment selection, accurate customer profiles and analyses of customer behavior, product sales forecasting, store inventory management, etc.;

- Retailers will resort to more complicated customer research inside the store to realize an aggregated view of what shoppers are doing in the store and at the store shelves before finishing their shopping and leaving the store. The U.S.-based company PrimeSense, for instance, develops 3D sensing technology and installs it inside the retail store to map how customers physically interact with products on the shelves (PrimeSense, 2013). Hence, this technology provides deeper insights into specific customer behavior with certain products in various part of the retail store;

All the aforementioned trends will contribute to a short-lived competitive advantage. In consequence, retailers will have to become more skillful at developing new competitive strategies and, potentially, rethinking their business models. New forms of retail formats are likely to emerge as a result.

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APPENDIX

Cover Letter (Grocery Shopping Example)

Dear XXX (personal salutation):

Are you sometimes amazed by the possibilities modern technology opens and where it could take us? Do you get excited about new technology? Do you ever wonder how technology innovations could make our daily lives easier? Do you sometimes feel there must be a better and more enjoyable way to such mundane tasks as grocery shopping?

If your answer is yes, then this survey is for you to help us improve the shopping experience in one of our many stores by making technology work in your favor!

We believe this survey is of great importance to you as you now have the chance to make your voice heard. By completing this survey, you can influence the way you will shop the next time you visit our stores.

Does this sound interesting? Then click on the link below and answer the questions that follow. It will take you approximately 15 minutes to reach the end of the questionnaire where a reward is waiting for you. Because we appreciate your time and opinion, we will award you DKK 50 in a redeemable voucher for completing the questionnaire!

Should you have any questions about this survey or further comments, please do contact us via our e-mail address: XXX, and we will try to respond within X working days.

Thank you for helping us and being our loyal customer.

Your XXX (name of the grocery store)

PLEASE NOTE: We guarantee you that the results of this survey will solely be used to improve the shopping experience in our stores. No third party will have access to either the answers or personal details you decide to share with us.

Self-Completion Questionnaire

SECTION 1	**Please indicate the degree to which you agree with the following statements about weekly product offers**

	Always	Often but not always	Only rarely	Never	I don't because:
1. I read the paper version of the weekly offers	☐	☐	☐	☐	I don't receive it in my postbox
2. I read the electronic version of the weekly offers on my computer	☐	☐	☐	☐	I don't have a computer
3. I read the electronic version of the weekly offers on my smartphone	☐	☐	☐	☐	I don't have a smartphone
4. I read the electronic version of the weekly offers on my tablet	☐	☐	☐	☐	I don't have a tablet

SECTION 2	**Please indicate the degree to which you agree with the following statements about the use of your smartphone**

NOTE: If the customer answered "I don't have a smartphone" in Section 1, he/she would skip this section	Always	Often but not always	Only rarely	Never
5. I use my smartphone to read more about the products sold in the store	☐	☐	☐	☐
6. I use my smartphone to check prices of similar products at different stores	☐	☐	☐	☐
7. I use some of my smartphone applications, such as a shopping list, that help me when shopping in the store	☐	☐	☐	☐
8. I use the store's application to help me when shopping in the store (NOTE: assuming the retailer offers a smartphone application)	☐	☐	☐	☐

SECTION 3	**Please indicate the degree to which you agree with the following statements about what you might receive from us on your smartphone in the future**

NOTE: If the customer answered " I don't have a smartphone" in Section 1, he/she would skip this section	I agree	I don't know	I disagree
9. I would welcome the store's promotions sent to my smartphone	☐	☐	☐
10. I would welcome digital coupons sent to my smartphone	☐	☐	☐
11. I would welcome the possibility to use my smartphone to pay for the shopping instead of my credit card	☐	☐	☐
12. I would welcome the possibility to use my smartphone to pay for the shopping instead of paying in cash	☐	☐	☐
13. I would welcome the possibility to receive electronic receipts to my e-mail address with instantaneous notification on my smartphone instead of regular paper receipts in the store	☐	☐	☐
14. I would welcome the possibility to use my smartphone to collect reward points instead of my membership/loyalty card (NOTE: the customer has a card because he receives this survey based on his/her membership)	☐	☐	☐

SECTION 4	**Please indicate the degree to which you agree with the following statements about the kind of technologies you might see in our stores in the future**

	I agree	I don't know	I disagree
15. I would use personal shopping assistants that help me navigate the store and find the products I am looking for faster	☐	☐	☐
16. I would use personal shopping assistants that inform me about current product sales	☐	☐	☐
17. I would use personal shopping assistants that keep track of the products I have bought so far	☐	☐	☐
18. I would use personal shopping assistants that tell me how much money I have spent so far	☐	☐	☐
19. I would use self-service checkouts to save time	☐	☐	☐
20. I would use self-service checkouts because I don't require personal assistance	☐	☐	☐
21. I would appreciate to see electronic price tags instead of paper tags if they more clearly show the exact product prices	☐	☐	☐
22. I would welcome digital advertising displays in the store that inform me about the products	☐	☐	☐

23. I would welcome intelligent weighing scales in the store that automatically recognize the product, weight it, and print a price tag	☐	☐	☐

SECTION 5	**Please help us to get to know you better by sharing a few personal details with us**

NOTE: This section would be updated based on the kind of personal information the grocery retailer already has about its customers		
1. Are you:	Male ☐	Female ☐
2. How old are you:	Under 21 ☐ Between 21-30 ☐ Between 31-40 ☐ Between 41-50 ☐ Between 51-60 ☐ Over 60 ☐	
3. What is the highest level of education you have achieved:	High School Certificate ☐ Bachelor's Degree ☐ Master's Degree ☐ Other University Degree ☐ Other (please specify): ☐	

4. What is your monthly household income from all sources before taxes:	Less than DKK14,999 ☐ Between DKK15,000- DKK24,999 ☐ Between DKK25,000- DKK44,999 ☐ Between DKK45,000- DKK64,999 ☐ More than DKK65,000 ☐
5. How much money would you say you spend buying groceries in your household each month:	Less than DKK2,999 ☐ Between DKK3,000- DKK5,999 ☐ Between DKK6,000- DKK9,999 ☐ More than DKK10,000 ☐
6. How many members does your household have, including you:	I live alone ☐ No more than 3 ☐ No more than 5 ☐ More than 5 ☐

Topics to be discussed with and questions to be asked of the grocery retail store's managers during face-to-face interviews

SECTION 1	Discussion to focus on multi-channel retailing
Tell me about the different channels you currently use to approach, inform, sell to or otherwise interact with your customers.	
How do you approach the integration of the channels that you use to constantly deliver on your customer value proposition?	
Do you recognize that the multi-channel retail approach as a strategic tool has the potential to improve store sales?	
What would you say are the key pros and cons of creating a multi-channel experience seen from your perspective and from the perspective of the customers?	
How do you see the future of multi-channel retailing, and potentially omni-channel retailing, developing in the future?	

SECTION 2	Discussion to focus on technologies
Tell me about the technology customers can use in your stores at this moment.	
Taking into account that more and more people own smartphones, do you think customers would be interested in receiving promotional messages from you? If no, why not? If yes, how would you approach this?	
Would you be prepared to test digital wallets in your stores if customers showed interest in them? If no, why not? If yes, how would you approach it?	
How do you see the future of digital wallets in smartphones replacing credit cards and cash as a payment instrument?	
What do you think about digital wallets in smartphones replacing loyalty or membership cards in the future?	
If you were to offer your customers a smartphone-based shopping application, what key features should that application have to be adopted by customers?	
What would you say are the key pros and cons of introducing personal shopping assistants in your stores seen from your perspective and from the perspective of your customers?	
What benefits and disadvantages can you list to letting customers use self-service checkouts in your stores?	
What are the key advantages and disadvantages of replacing paper price tags with electronic price tags from your perspective and from the perspective of your customers?	
What potential use do you see for digital displays in your stores and how could they benefit the customers?	
Would you be prepared to install intelligent weighing scales in your stores if customers showed interest in them? If no, why not? If yes, how would that benefit you and the customers?	