



Redesigning Business Model Strategy: The Digital Future of Retailing in Europe

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	ABSTRACT
<p>2019 Research Leap/Inovatus Services Ltd. All rights reserved.</p> <p>DOI: 10.18775/jibrm.1849-8558.2015.43.3001 URL: http://dx.doi.org/10.18775/jibrm.1849-8558.2015.43.3001</p>	<p>In times of progressive digital transformation and constant change, a continuous reorientation of stationary retail is indispensable in order to be successful in the future. The practical recommendations for action provide a guideline for the transformation of stationary retailing based on digital change processes. Various factors are taken into account, which is identified as critical success factors for stationary retail. These include a reorientation of the business model, the introduction of new digital technologies and data protection. In general, the stationary retail must rethink the business model holistically and be open to radical innovations in order to be successful in the long term. More than ever, the influence of digital technologies and the influence of online retailing can be felt. Adapting successful digital and technological megatrends is, therefore, a critical success factor. If the necessary change is lacking in stationary retail, successful digital companies - such as Amazon or Alibaba - will replace entire industries. Subtotaling, the following questions are answered:</p> <ul style="list-style-type: none"> • What problems does stationary retail face - caused by the digital transformation? • What digital solutions already exist? • How can stationary retail remain successful in the digital age?
<p>Keywords: Digital transformation, Stationery retail, Business model transformation, Digital strategy, Business model innovation, Market research, Data security, Digital technologies</p>	

1. Introduction and Problem Statement

"Uber, the world's largest taxi company, owns no vehicles. Facebook, the world's most popular media owner, creates no content. Alibaba, the most valuable retailer, has no inventory. Also, Airbnb, the world's largest accommodation provider, owns no real estate. Something interesting is happening." (Tom Goodwin)

While sales in online retailing are rising steadily, stationery retail is coming under increasing pressure. The substitution effect from offline to online trading will continue to increase in the future (Heinemann, 2017). Stationary retailers will, therefore, have to initiate and implement measures to enhance their range of value proposition and services. A fundamental basis for these measures is customer data, based on which customer needs can be shaped. The data-based knowledge about these customer needs can only be achieved through targeted market research activities (Jäger, 2016).

In the increasing digital transition from offline to online, market research in stationary retail is facing a radical transformation (Gaspar et al., 2016). New market research methods in online trading and stationary trading are emerging and form the data basis for future business success. With the use of modern

market research tools, customers are increasingly being screened. The transparent customer is no longer a fiction, but reality (Berberich, 2016). Despite the resulting optimization of the value proposition and the resulting better satisfaction of customer needs, there are also negative effects around the generated data. The debate on data protection will, therefore, become an integral part of European market research (Jörg et al., 2016). This area of tension raises the question: How can today's feasible market research solutions be applied in a targeted and data protection-compliant manner in stationary retail? On the basis of the identified current market research solutions and data protection principles for market research in stationary retail, concrete recommendations for practical action are derived below.

2. Market Research and Data Protection

2.1 Market Research in Stationary Retailing.

The use of customer data in stationary retail seems evident. On the basis of the improved satisfaction of customer needs, there is an opportunity to stop the negative trend of stationary retailing. While the relevance of market research is undisputed, a closer look quickly reveals that traditional market research methods are not agile enough for complex and rapidly changing market situations (Gaspar et al., 2016).

This complexity is reinforced by digital transformation. This changes communication between people and interaction with products and brands. Competition is also changing. This is due to a considerable reduction in transaction costs (Gassmann and Sutter, 2016). One consequence is that SMEs and start-ups for the first time have equivalent coordination and communication tools that were previously reserved for the big companies. Thus, it is not the structure of a communication channel that is decisive, but the use of the generated data and the information obtained from it. Many innovative companies have developed new solutions to collect the required data and derive information from it (Rust, 2017). In this context, the collection and evaluation of customer contact data have proved to be an essential component of the systematic optimization of stationary retail stores, for example through Targeted Location Based Marketing and Supply Chain Optimization (Sanders, 2016; Bollweg et al., 2016). Figure 1, therefore, shows some modern market research technologies for recording customer contact data and their characteristics.

Simple Sensor Technology	Optical Sensor Technology	Proxy Technologies	Tracking systems
Simple Technology	Individualized Capturing	Indirect Capturing	Most complex Technology
Low Cost	Inaccuracy	Unique Identification	High Data Density
High Inaccuracy		Inaccuracies possible	High Quality
Possible Trend Capturing			Problematic Data Protection

Figure 1: Technologies for recording customer contact data (Source: Own figure)

Simple Sensor Technology

The most basic form of sensor technology is the use of printing plates and light barriers to detecting customer contacts. This technology makes it easy to record and evaluate visitor numbers. The main advantage is the low cost. Due to the simple technology, however, this technology is prone to errors (e.g., counting non-relevant persons) and is, therefore, subject to a high degree of inaccuracy, as employees, service providers or children playing in the shop entrance are counted unfiltered. Another disadvantage is that people cannot be tracked individually (Bollweg et al., 2016). This makes this technology suitable for trend recording, but not for the exact recording of customer numbers (Senior et al., 2007).

Optical Sensor Technology

Optical sensors represent a particular form of sensor technology (Katanyukul and Ponsawat, 2017). The technological scope ranges from simple motion sensors to thermal imaging cameras. In contrast to simple sensors, optical sensors can track individual shop visitors and record their movements. As a rule, data protection regulations are not violated because shop visitors can be tracked individually but cannot be unambiguously identified (Presthus and Anderson, 2017). Just as with simple sensor technology, the registration of groups is hardly possible. Accordingly, the measurement of optical sensors is also subject to a specific inaccuracy (Bollweg et al., 2016).

Proxy Technologies

In addition to sensor technologies, proxy technologies are another way of recording customer contacts. These include the collection of customer contact data via RFID chips, WLAN networks, the use of smart glasses, in-store robots or bots and smartphones with indoor GPS functions. In contrast to sensor technology, it is possible to identify the customer. Various networking possibilities (e.g., with the customer's transaction data) are created. The networking options offer the opportunity to personalize the shopping experience and implement digital services that can react immediately to recorded visitor behavior (Bollweg et al., 2016). It must be taken into account that visitor behavior is not recorded directly, but indirectly via technologies (in-store robots, bots, etc.). This can lead to inaccuracies in the measurement when a customer leaves the detection radius of the proxy technology (Yaeli et al., 2014; Sorensen, 2003).

Tracking Systems

The most complex technology for capturing customer contact data in stationary retail are tracking systems (Bollweg et al., 2016). Video systems record the customer during his visit to the store. Video technologies can count store visitors, evaluate their movement patterns and record interactions and actions (Xu, 2007). Advantages are the possibilities of group analysis and the differentiation of the relevant and the irrelevant. In addition, new facial recognition software, as well as facial expression and gesture interpretations, lead to an extremely high density of such data, which is increasingly adapting to the quality of direct observation by employees (Liciotti et al., 2015). A negative aspect of this technology is that the customer cannot evade the technology - and it must, therefore, be critically examined from the point of view of data protection law (Bollweg et al., 2016; Farshidi, 2016; Kenny et al., 2012; Connell et al., 2013).

2.2 Customer Needs in Retail Market Research

Retailers have always collected, analyzed and used large amounts of customer data: Who buys? What is bought when? Also, which products or services are preferred? The conversion of customer data to improve the customer experience or to satisfy customer needs, however, still offers great potential for improvement. Because only consistent data use can reveal customer needs and create a sustainable shopping experience (Saarijärvi et al., 2016).

When shopping in the retail trade, shopping behavior is increasingly characterized by an accompanying interweaving of social networking, localization and mobile Internet use (SoLoMo). This development is due to the increasing use of smartphones, which are already being used by the majority of customers during branch visits. Customers increasingly expect to be able to retrieve digital information from the local retailer and thus prepare for stationary shopping. Mobile solutions, therefore, represent a great opportunity for stationary retailers to meet the changing customer needs and expectations (Heinemann, 2017).

The process of transforming customer data into meaningful information for the customer is attracting more attention from

market research. The retailer is able to use the data to support the customer's well-being by focusing on customer needs (Saarijärvi et al., 2016). With the increasing use of customer data, however, there is also a high level of responsibility. Data protection is becoming a central topic, which for many still represents an opaque obstacle to the use of customer data (Campbell et al., 2015).

2.3 Data Protection in the Market Research of Stationary Retail Trade

Retail market research uses state-of-the-art technologies to collect a large amount of personal data from identifiable individuals (Mühlbauer, 2018). Accordingly, data protection law imposes strict requirements on the conduct of market research in order to protect the personal rights of customers and protect their data from the misuse (Hermann and Fischer-Hübner, 2018). According to Petrlc and Sorge (2017), there are a total of three pillars of data protection: 1. regulations, such as laws and guidelines, 2. self-regulation, such as voluntary commitments by companies and 3. self-protection measures by customers, such as the waiver of card payments.

The currently most important data protection regulation (see first pillar: Regulation) is the European Data Protection Basic Regulation (EU-DSGVO), which entered into force on 25 May 2018. The EU-DSGVO contains a total of 99 articles and 173 recitals (EU-DSGVO, Regulation (EU) 2016/679). Figure 2 shows the three main pillars of the regulation, which should be observed for sustainable data protection in stationary retail trade. The guidelines contained in the pillars do not represent a complete illustration of the EU-DSGVO but are the result of a selection carried out with data protection experts. The aim is to prepare the essential core pillars of the EU-DSGVO for the operative business of the stationary retail trade.

1. Basic Principles	2. Rights of Data Subjects	3. Information Duties
Legality Secure Data Processing Appropriation Data Minimization Documentation	Right to a. Information b. Deletion c. Correction Data Transferability	Transparency through a. Privacy Policy b. Information Signs

Figure 2: 3 Core Pillars of the EU-DSGVO (Source: Own figure based on EU-DSGVO, Regulation (EU) 2016/679)

All companies that use personal data must apply this basic regulation and it takes precedence over national data protection laws (Pluta, 2018). However, not only regulations, such as the EU-DSGVO mentioned above, restrict market research, but also self-protection measures by customers, such as the renunciation of card payments or the avoidance of shops in which no proper data protection is lived. Market research companies should strategically reorient themselves in view of the scope of new regulations. If data protection regulations are disregarded, the authorities may impose heavy fines, but customers may also avoid the shop (Wichtermann, 2016; Müller, 2017).

3. Research Design

How can such market research solutions be used in a targeted manner and above all in compliance with data protection regulations in your retail shop? To answer this question, an empirical study will be conducted. Since there are no comparable studies available for the object of this study, an explorative qualitative approach is chosen for the study that allows a high degree of openness and supports the discovery of something new (Lamnek, 2005). The research logic is characterized by an inductive approach, according to which there are no prefabricated hypotheses at the beginning, but open research questions, which should lead to hypotheses through the empirical question. In order to answer the research questions, two different research designs are required, which are described below. The first study focuses on the needs of retail customers in terms of market research, since it can be assumed that the increasing digitalization will increase the customer's need for data usage. This is due on the one hand to the increasing use of customer data by the retail trade and on the other hand to the increasing transparency of this use for the customer (Heinemann, 2017). The customer wants to receive added value by disclosing his data. Accordingly, new market research solutions must be established to meet the customer's desire for reverse data use (Saarijärvi et al., 2014). The basis for this, however, is knowledge of the customer's needs in this area. These needs are therefore researched using 38 guideline-based individual interviews.

The second study aims to assess the role of data protection in current market research methods in the retail sector and the possibilities for increasing data protection. To this end, four expert interviews with data protection experts will be conducted. The expert interview is a special type of guideline interview in which the focus is not on the interviewee as an individual, but on his or her knowledge, in this case, his or her specialist knowledge of data protection (Flick, 1999). Ideally, the data protection expert is directly involved both in the analysis of data protection implementations in market research and in the development of solution levers for increasing data protection. According to Kaiser (2014), the collection of expert knowledge can hardly be implemented by any other methodological approach. A qualitative interview makes high demands on the interviewer due to the multitude of individual situational decisions (Flick, 2008). The study must, therefore, be preceded by four pre-tests, which assesses the comprehensibility and validity of the research instrument and the interview procedure (Kaiser, 2014). The data evaluation for both studies is based on the qualitative content analysis according to Mayring (2015), as this systematizes the content analysis in the form of a general process model and breaks it down into comprehensible analysis steps. A comprehensive inductive summary is selected as the analysis technique.

Investigation 1: Customer survey

- Within the framework of an explorative qualitative study, the needs of customers for market research in stationary retail are determined.
- Database: 38 guideline-based interviews in front of various retail shops

Investigation 2: Expert interviews

- In a second, explorative qualitative study, data protection experts are asked about the role of data protection in market research in stationary retail.
- Database: Four guideline-based expert interviews via telephone

Figure 3: Research Design at a Glance (Source: Own figure)

4. Recommendation for Action

4.1 Three Practical Solutions to Modern Market Research

Three categories of customer needs determine retail market research: 1. the need for different information, 2. the need for different sources of information and 3. the need for certain forms of information provision. In general, customers want a stronger link between offline and online trade. In contrast, the data protection debate shows that market research also operates in an increasingly conflicting field. On the one hand, the possibilities of collecting personal data are increasing; on the other hand, new data protection regulations are significantly restricting modern market research methods. It has become apparent that data protection must be at the center of modern market research methods.

Communication, transparency, and control are identified as essential principles for a data protection compliant implementation of market research in the stationary retail trade, which can contribute to an increase in data protection. The following three practical recommendations for market research companies are helpful to:

- initiate a data-driven change process;
- reach new areas of value creation;
- successfully use digital tools and
- see data protection as a competitive advantage.

Recommendation 1: Change the strategic direction of modern market research

The previous concept of market research to collect data only for companies and their corporate decision-making policy is outdated given the problematic situation in the stationary retail sector. Instead, alternative and innovative ways of collecting and providing information must be found in order to generate new value-added areas. A key to this is the “reverse use of data” of customer data - i.e., the use of data to enhance customer benefit.

Collaboration platforms can be identified as potential solution levers for a realignment of the value creation structure. These enable the customers of the stationary retail trade to obtain direct added value for the disclosure of information. Customers are provided with a collaboration platform in which they independently collect information (prices, products, trends or local conditions, etc.), for example in the form of cash receipts. This information from different consumers could thus be collected centrally, evaluated and made available to the user community in a useful form.

Through cooperation between market research and customers, the problem of asymmetrically distributed information in stationary retail can be overcome. The search costs for information of the users of this platform will be minimized, and a strategic benefit will result from the joint creation and sharing of knowledge.

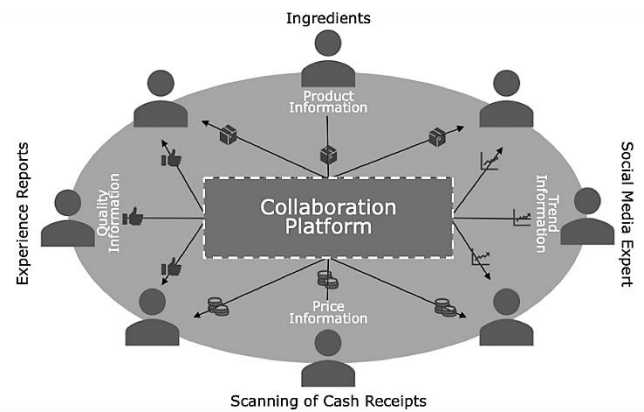


Figure 4: Collaboration Platform for Information Sharing (Source: Own figure)

New, open collaboration platforms are emerging in the most diverse sectors of society and are promoting new forms of collaboration. The potential of such digital platform concepts has already been proven by successful companies such as Airbnb, Uber and Co. However, such a collaboration platform for information sharing is still missing in market research in the stationary retail sector. The primary objective of the collaboration platform shown in Figure 4 is data sharing. Customers can share selected data with other customers, which is a modern and efficient form of market research. High use of the platform could even lead to almost complete price transparency in offline trading. Besides, such a platform would expand the added value of market research companies by providing a digital offering and could bring consumers one step closer to their desire to link online and offline trading.

Recommendation 2: Robots and tracking systems in stationary retail

The high flexibility and availability in ordering as well as the possibility of individualized products and services, which online trading offers today, also increase the consumer's expectations in stationary trading. The stationary trade must, therefore, reinvent itself in terms of service and experience quality in order to fight against the loss of customers. This can be done using existing technologies, which merge offline retailing into an omnichannel solution. Personalized shopping experiences and digital services round off the immersive perception. Experiences, entertainment, service for individual wishes as well as convenience along with the entire purchasing process form an additive value proposition. Real-time controls enable an immediate reaction to the wishes and needs of the customer. Modern technologies can take on this task by collecting and evaluating customer data in real time. In the

following, two available technologies will be presented which, on the one hand, significantly improve the purchasing process in stationary retail and, on the other hand, collect and analyze valuable customer data.

In-Store Robot

In-store robots and related developments in the field of Artificial Intelligence have become reality today. The rapid technical development makes it possible (and affordable) to use such technical solutions in the broad market on sales floors. First of all, the customer's attention can be aroused by exciting stimuli (e.g., by a reception robot). This arouses the curiosity of the potential customer. Besides, this receiving robot can also record the initial needs of the customer by asking specific questions. In the next step, the retailer, who have already analyzed the customer's wishes using the receiving robot, can precisely influence the initiation of the purchase. Product information can be provided via displays on the robots and supported by product reviews from other buyers (Gieselmann and Gremmer, 2018).

In-store robots can thus enable new shopping experiences and make the respective stationary retailer appear innovative. The application makes it possible to accompany customers individually throughout the entire purchasing process. Also, in-store robots can lead to significant cost savings and process optimization. If the stationary retailer succeeds in finding a suitable integration approach for this technology, he can exploit the competitive advantage of personal contact over online retailing.

Tracking Systems

Another innovation for capturing customer data and supporting decision-making in the retail sector are tracking systems. These video technologies enable store visitors to be counted, their movement patterns evaluated and their interactions and actions recorded. Just like robots, they contribute to the optimization of the stationary shopping process and can provide valuable insights for future retail success. The exact measurement of the tracking systems allows the data to be used for a variety of purposes. This makes it possible to determine both the gender and the approximate age of the customer. This data can be used to make targeted marketing decisions in real time. Moreover, modern tracking systems can achieve an accuracy of up to 99% in customer frequency measurement. The accurate recording of customer numbers in the store can, for example, provide a forecast of the number of cash registers required in the near future in a stationary retail store. Additionally, modern tracking systems - which have facial recognition software for facial expression and gesture interpretation - can be used to measure customer attitudes to various products within the store or customer satisfaction with the purchasing process (Hierl, 2017).

The introduction of such tracking systems can lead to optimization of the purchasing process both for retailers and

customers. However, if such tracking systems are used to measure customer frequency or interpret facial expressions and gestures, it must be checked whether they comply with the applicable data protection regulations. The admissibility of video surveillance measures in the EU, for example, is governed by Art. 5 and 6 of the EU-DSGVO. Accordingly, various conditions must be fulfilled for the processing of personal data, such as, for example, that the data is collected for specified, clear and legitimate purposes (Art. 5 para. 1b EU-DSGVO) or that the data subject has given his/her consent to the processing (Art. 6 para. 1a EU-DSGVO).

The extent to which the use of tracking systems makes sense and is possible must be clarified individually for each stationary retailer. If the use of tracking systems is practical, they can be combined with other technologies (e.g., In-Store Robots). The following illustration shows the vision of a new retail store equipped with the available technologies for recording customer data.

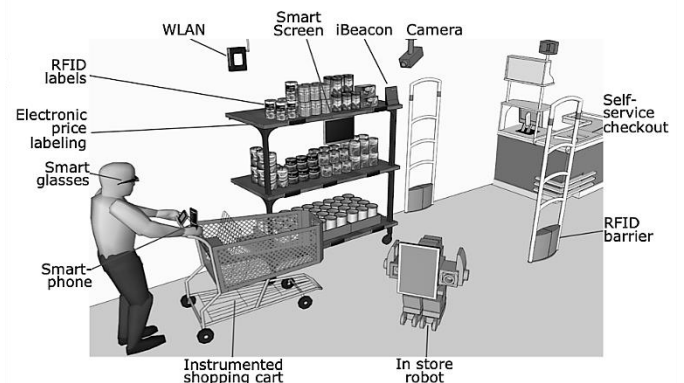


Figure 5: Future Retail Store (Source: Own figure)

Recommendation 3: Data protection as a competitive advantage

As companies continue to expand their efforts to collect and use customer information, customers are becoming increasingly concerned about their privacy and potential harm. This means that market research companies need to be vigilant about privacy and follow clear strategic principles. The following three principles can be used to conduct modern market research in compliance with data protection regulations:

1. **Communication** Clear communication of values and goals to the customer leads to a higher identification with the company and thus to more trust. It is therefore advisable to place information material in the stationary shop in order to inform the customer about any use of data.
2. **Transparency** Customers are prepared - within a transparent framework - to disclose data for a noticeable added value. A high level of transparency in data usage provides customers with information on what information they make available to the

company, how this information is used and which third parties may access this data.

3. Control

Customers should have control over their data. This allows them to decide for themselves whether they want to participate in certain forms of data exchange, reducing uncertainty about misuse.

Integrating the principles into the market research process creates a sense of empowerment in the customer, although the customer's vulnerability remains. Therefore, the first two recommendations "Changing the strategic direction of modern market research" and "Robots and tracking systems in stationary retail" should always be implemented in accordance with the three principles. A lived data protection can become a decisive competitive advantage with which the market research operating companies in the stationary retail trade can distinguish themselves from large digital corporations such as Amazon, Alibaba & Co.

4.2 Market Research of the Future

The optimal market research in the digital change is adaptable, agile and links the digital world with the offline trade. It not only provides up-to-date insights daily but also creates an entirely new basis for value creation. This can be achieved by 1. changing the strategic direction of market research to increase added value, 2. using sensors and actuators to capture customer contact data and enhance the shopping experience, and 3. focusing on the implementation of data protection regulations to create a competitive advantage over large digital companies.

The implementation of these three potential courses of action should not be seen as a stand-alone solution lever, but rather as a strategic framework for action by defining the direction of operational decisions. In this fast-moving society, in which new products or services emerge every day, it is no longer sufficient to initiate change processes based on current customer needs and view them as a project that is completed after successful implementation. Because from the time of conception to the application of a new concept, customer behavior and their needs have long since changed again. In this new digital world, the only way to satisfy customer needs in the long term is the continuous initiation of change processes.

One way to quickly identify potential change opportunities in this digital world is to analyze new digital technologies. In addition to customer data capture technologies, many other technologies can optimize the purchasing process in stationary retail. Virtual and Augmented Reality are particularly noteworthy. This technology is increasingly being used in the retail sector, for example at IKEA. Here, customers can have the furniture from the catalog displayed in a 3D model of their own home.

There are therefore many ways open for stationary retailers to implement digital innovations. The integration of immersive elements is to be implemented in the short to medium term in the stationary retail trade. Those who act too cautiously in this disruptive change will have no chance against the giants of online trade in the long run. There is much more at stake for the stationary retail today. It is vital to use the new principles of the online world to your advantage - to be prepared to break new ground, to learn quickly and above all to act radically.

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