Introduction to the Special Issue Information Technology in Retail: Toward Omnichannel Retailing

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Introduction to the Special Issue 
Information Technology in Retail: 
Toward Omnichannel Retailing 

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ABSTRACT: The increased deployment of new technologies such as smart mobile devices and social networks and the growing importance of in-store technological solutions create new opportunities and challenges for retailers. As the line between online and physical channels is blurred, a new approach to channel integration is emerging—the omnichannel, which aims to deliver a seamless customer experience regardless of the channel. This introduction presents the results of focus group discussions on the role of information technology in retail, new business models, and the future role of traditional stores as e-commerce advances. Key issues that emerged from the discussion include the need for channel integration, the impact of mobile technologies, the growing role of social media, the changing role of physical brick-and-mortar stores, the need to respond to diverse customer requirements, the balance between personalization and privacy, and, finally, supply chain redesign. The four papers in this Special Issue explore these themes further.

KEY WORDS AND PHRASES: Cross-channel, e-tail, in-store retail, mobile sales, multichannel, online selling, social networks, supply chain.

Papers included in this Special Issue were selected and revised extensively from the work presented at the academic Oxford Retail Futures Conference: New Technologies, Business Models and Customer Experience, which took place at the Said Business School, University of Oxford, in December 2012. The conference was followed by a practitioner-oriented workshop in June 2013. Both events were part of a wider research project at the Oxford Institute of Retail Management (OXIRM), funded by Intel Corporation. The main goal of the project was to answer the question of how information technology (IT), especially in-store solutions, impacts retailers, product suppliers, and their customers. This includes the impact on the business models and the future role of retail stores in the new environment, the coordination of online and brick-and-mortar activities, and the changes caused by the mobile revolution and social networks.

This introductory paper presents the main issues related to the technology role and its implementation in the retail sector. The main trends and themes were identified during the focus group discussion, which took place during both events. The findings suggest that the following areas are considered to be important by both academics and practitioners:

• channel integration
• impact of mobile technologies

The guest editors thank the participants of Oxford Retail Futures for their contributions and the reviewers who helped to improve the papers in this Special Issue, as well as the authors who submitted their original papers.
• influential role of social media
• changing role of the physical brick-and-mortar store
• diversity in customer requirements
• balance between personalization and privacy
• need for supply chain redesign

This paper is structured as follows: first, the growth of the omnichannel, driven by technology development and changes in customer requirements, is overviewed; then, the focus groups and their composition are presented; this is followed by the main issues identified during both events; then, the papers included in the Special Issue are mapped against the framework developed; and finally the papers are introduced.

Omnichannel Retailing

The detailed literature reviews relating to IT in retail are presented in the papers in this Special Issue [2, 6, 9, 11]. Here, we focus on the emerging theme—omnichannel retailing. The omnichannel concept is perceived as an evolution of the multichannel. While the multichannel implies a division between the physical and online store, in the omnichannel customers move freely between the online (PC), mobile devices, and physical store, all within a single transaction process [13]. Mobile and social media channels, and even gaming, are added to “traditional” online and physical channels. At the same time, the journey should be smooth and should provide a seamless, unified customer experience, regardless of the channels used [3, 8, 12, 15]. Because the channels are managed together, the perceived interaction is not with the channel, but with the brand.

The changes are driven by new technologies, such as smart mobile devices (smartphones and tablets) and related software (apps, mobile payments, e-valets, e-coupons, digital flyers, location-based services). There are changes in the IT provision, reduced cost, and access to technology (big data and cloud computing), which allow for personalization and price optimization. There are also new in-store technologies available (virtual screens and aisles, virtual mirrors–fitting rooms, digital signage, intelligent self-service kiosks, vending machines and dynamic menus), as well as QR codes, in addition to mobile devices brought to the shop by customers. Emerging technologies such as Google Glass and 3D printing will likely push these changes further. On the customer side, there is growing use of social media. The connected mobile customer can access information and buy anything, anywhere, anytime. This has resulted in responses from retailers, who need to remove barriers within the channels and provide cross-channel services such as “click and collect,” “order in-store, deliver home,” “order online, return to store,” “showrooms,” and other combinations of online and traditional retail activities.

Despite the changes and emerging trends, channel integration is perceived as a big challenge for retailers [13]. The issues include lack of consensus regarding the future of digital channels, lack of a unified view of a customer across channels, and problems with inventory management and mobile access [13].
Focus Groups

The issues described earlier in this paper were explored at an academic conference and a workshop with leading retailers. During both events, participants were treated as focus groups, and the panel discussions were moderated. In the case of academics, they could present four slides only, and the practitioners could only briefly introduce themselves and their company. The majority of time (approximately 90 minutes per panel) was focused on discussion. Six panel discussions were completed in addition to conversations in informal settings. Each panel consisted of four to six participants, and the audience joined in the discussion.

The discussion panels for both events were focused on the impact of technology in three areas:

1. multichannel and in-store retailing and development of new business models
2. mobile technologies
3. customer experience and supplier relationships

The focus group approach is commonly used in marketing and health care; however, it is underutilized in other areas [4], despite being suitable for information systems research [10]. However, a recent review [1] suggests a growing acceptance of this approach. The aim of the focus groups was to explore the topic, gain insights about an emerging phenomenon [1, 5, 7, 14], and capture attitudes and beliefs related to the topic [4].

The focus group approach allowed us to collect much data in a short time [10]. The focus groups fulfilled several criteria listed in the literature. Participants were selected based on their knowledge of the field [1]. In the case of academics, selection was based on a review of submitted papers, to ensure international coverage as well as involvement in empirical research. Practitioners were senior members from leading large retail organizations, mainly from the United Kingdom, which is among the most advanced multichannel and e-commerce retail markets. An experienced moderator [1] ensured that everyone in the group would have an equal voice and that the group would not be dominated by any individual. Field notes from the discussion were written and analyzed. There was a deliberate decision not to record the event, but to base the work on the field notes, to stimulate an open discussion in an informal setting [14]. The focus group methodology allows such flexibility, to ensure that goals set by researchers are met [10].

Impact of Information Technology on Retail

This section summarizes the way in which participants perceived the role of IT in retail. Among those interviewed, there was agreement that technology should solve problems, not generate new ones; it should not be implemented just “to be there,” but for a defined reason. It was also understood that technology can appeal to some but not to all customers. In-store technology should be “invisible” to customers and well tested before implementation to ensure
that glitches and problems are eliminated, as these can quickly alienate customers. A successful strategy in technology implementation should be aligned with the customer, retailer, and product manufacturer. The issue arises as to who should be responsible for customer experience integration: the retailer, producer, or technology provider.

In its current state, technology should complement but not replace the store team. Store employees should be involved as technology users, and solutions such as tablets can support them. At the same time, store employees are perceived as a potential barrier to technology implementation; thus, training and technology promotion among staff are required. This is especially important in organizations in which a large proportion of staff are part-time, temporary, and not technology minded.

The main themes and issues that emerged from the focus groups were integrated and are presented in Figure 1. The following section explores them further.

**Channel Integration**

Customers expect consistent, uniform, integrated service and experience, regardless of the channel they use; they are willing to move seamlessly between channels—traditional store, online, and mobile—depending on their preferences, their current situation, the time of day, or the product category. However, retailers are often unable to deliver such an experience. Even if a retailer is offering multichannel access, there is often a “silo” mentality—online and traditional channels are treated separately, and are often managed by different
people and departments that do not fully cooperate. This is especially visible in the online channel, as the back-office IT staff do not have direct interaction with customers. There is lack of integration in pricing, promotion, marketing, brand building, supply chain management, and experience provided across all channels. In the most extreme cases, two channels may compete directly with each other. Customers are wary about pricing policies; thus, they might check the price online first before buying in-store. In the integrated option, the online and mobile solutions should drive customers to the stores and encourage them toward face-to-face contact, as well as provide transparent pricing.

**Mobile Solutions**

The need for cross-channel integration is even more apparent when mobile technologies are used in-store. Because the importance of the mobile is growing, these should be included in the omnichannel strategy. The “traditional” barrier between “brick and mortar” and online is blurred, because devices such as smartphones and tablets may be used in-store. However, retail online shops and pages are often not designed nor optimized for mobile devices. A customer can use their own device to perform searches, compare products, ask for advice, look for cheaper alternatives; the growing popularity of QR codes and bar code scanning, together with mobile online access, has given customers the ability to look for cheaper alternatives while shopping in-store. This has created a more even balance in access to information between retailer and customer, and the new challenge is how to respond to it. A wide range of strategies has been attempted, from trying to ban bar code scanning to price matching (or even promising to beat the competitor’s price).

**Role of Social Media**

The mobile revolution, together with the growth of social media, has created the situation where the customers “bring” into the store their whole social network. Customers can check a product rating, promote a product or service, or contact someone (or a group) to ask a question, but also share in real time thoughts, opinions, and videos and pictures, as well their satisfaction or dissatisfaction with the store offering of both products or services. Moreover, customers expect direct links from the store to their social network, so that they can comment straightaway and in real time. This creates new challenges because the retailer has no direct influence on any individual social network that is outside the retailer’s or product manufacturer’s brand control. In this new situation, the importance of a one-to-one relationship between retailer and customer is greater, because the customer serves as a medium between herself or himself and the wider social network, which is maintained even in the in-store environment via mobile devices. However, along with the challenges, there are also opportunities in this area, such as employing customers as brand advocates, involving them at various stages of product design (co-creation), and utilizing their ability to access
focus groups to test new products and services; or even use social media as an additional sales channel (social commerce).

**Changing Role of the Physical Store**

Despite needing the ability to move across channels, customers still want to see, feel, touch, and try the product, as well as to feel the shop atmosphere. However, the future role of the physical store is not clear, and it may end up being determined by the product category and customer segment. The traditional store could change its role to a “hub,” the focal point which would integrate all sales channels. There is an opportunity to use the store as a place to provide a personal experience that will attract customers, regardless of the channel used. The role of the store in attracting customers, however, depends on the product characteristic and level of customer experience provided, which should match customer needs. These needs depend on the level of engagement with the product and previous personal experience. The motivation to use online or traditional channels could also be influenced by the type of shopping (utilitarian or hedonic), and thus that should be considered by retailers. The integration of online and “brick and mortar” channels includes “click and collect,” the ability to order and return or exchange goods in-store, ordering while in-store, using own mobile device or self-service technology provided by the retailer.

An additional dimension is created by the increasing role of in-store technologies. This includes technologies for customers such as interactive screens, augmented reality, and “magic mirrors,” as well as technologies for the staff, such as tablets. All such technologies should interact fully with the customer experience (not just be “an isolated screen in a dark corner,” or in the location determined by availability of an electric plug on the wall). However, there is another challenge—the physical store layout is optimized to such a level that the addition of new in-store technologies often requires store redesign. Moreover, layout is often focused on the product, product visibility, and flow, not on the customer experience. Technology inclusion in the store environment is not so complicated in the case of simple solutions, which are mainly focused on operational improvement, such as self-service checkouts. The location of new, more complex devices such as digital signage or interactive walls in the store setting needs further investigation to ensure that they will be fully integrated in the shop layout. The provision of “virtual” goods, via kiosks and virtual aisles, will also increase the store offering, especially the number of non-food product lines in grocery stores, as customers demand wider product choice in the traditional store similar to the choice available online.

**Diverse Customer Requirements**

It is trivial to state that different customers have different requirements; however, this could easily be forgotten. Not all customers want the same level of interaction with technology. This is especially visible when differences between
generations are considered. "Digital natives," people who grow up with constant online access, can be contrasted with older shoppers, who might still prefer traditional face-to-face interactions with staff members. Thus, the choice of interaction is important; customers should be able to select the channel and the method of interacting with the retailer, as well as the time. Any technology in-store should extend the customer experience and not be a new barrier for people less familiar with it. The answer to such problems of diversity might be a combination of the options available in-store: digital seamless touchpoint, sales assistant, and availability of the physical product for inspection and trying out. However, it was also acknowledged in the discussions that even though the demand for better customer experiences might be growing, it is dependent on the store strategy, product, and brand positioning (such as low-cost versus luxury goods); thus, there is always scope for differentiation among retailers. At the same time, there is the issue of whether customers are willing to pay more for a premium service. Some of them do not want to pay more and may be satisfied with a lower level of customer service at a lower cost. Thus, there is a trade-off between low cost and premium service. It was also noted that the requirements of a single customer might change depending on the context: time of day, financial situation, plans, feelings, which will all influence the interaction with the retailer and the channel selected.

Among interviewed retailers there was a perception that technology should be “invisible” and that the main focus should be on people, product, and feel (store atmosphere). However, there was also an issue of technology costs; how can an improved customer experience justify up-front investments, and how it will influence sales? Some technologies, such as Wi-Fi access, are demanded by customers—they expect to be able to access the Internet for free while in-store as a standard service.

**Personalization Versus Privacy**

An emerging issue is the balance between personalization and privacy. Retailers can collect customer-related data using loyalty cards, and then target customers with product offerings. Large organizations such as Apple, Google, Facebook, eBay, and Amazon, as well as individual retailers, are tracking customer behavior. On the one hand, this allows for adjusting the content and offering to individual preferences and creates the opportunity for customer targeting; on the other hand, it can be perceived as a breach of privacy, especially if too much marketing “push” is applied. Increasingly, customers want to know who knows what about them. An additional problem is related to knowledge ownership—who owns, stores, controls, and shares the information about a customer. Will such data be under the control of the retailer, a third party, or large organizations that act as intermediaries between online channels and customers (online trading platform or search engine)? It was agreed that although customers can accept an open and helpful customization, at the same time they reject a pushy and misleading one. The perception of this issue may change over time because the current young generation is accustomed to the Internet and perceives technology as an extension of their
own life, sharing their personal details with the online environment. Another
danger is rejection of information in a situation in which there is information
overload—customers might just ignore it.

A further problem identified during the discussion was that of digital
exclusion: Customers who do not use online or mobile technologies might
be potentially excluded from the best deals and offerings. Moreover, such
“disconnected” customers in fact might subsidize “connected” customers,
who will get the best offers. Here again the issue of demographics appears,
with the current “smartphone kids” perhaps getting the best deals.

Supply Chain Redesign

Supply chain investments are perceived as a key issue in channel integration.
When the store is considered a hub for retail activities, the supply chain de-
sign should reflect this. Issues such as product availability, returns, delivery
options, reverse flows, and inventory management across channels should
be addressed. Because online and traditional channels are often managed
separately, integration of both physical and information flows is required.
However, different options may also be considered, such as “showrooming,”
in which products are just viewed and “experienced” in-store and then deliv-
ered directly to the customer. The mix of traditional and online options will
be the most likely solution: for smaller items the “click and collect” option
(buy online, collect in-store), and the “showroom,” supported by interactive
screens, for items that need space for storage and exhibition. Such products
could be ordered in-store (via assistant, supported by technology or self-
service technology—mobile or in-store), then delivered directly to the home
in a requested slot. All such options should be supported by redesigned end-
to-end distribution and delivery systems; there should also be integration of
marketing and supply chain management to ensure product availability across
channels and a pull-order system from the product manufacturers.

Papers in the Special Issue

After our discussion of the general areas of interest, the following section
introduces papers in this Special Issue. Four papers [2, 6, 9, 11] in this issue
were selected from an initial set of 16 papers that were accepted for confer-
ence presentation, and they have undergone several cycles or revisions and
reviews before publication here. The panel discussions allowed authors to
improve and revise their work, incorporating comments into a new version
of their paper. Table 1 shows how the papers are mapped against the themes
identified during the focus groups presented earlier in this paper.

The first paper in this issue, by Pousttchi and Hufenbach [11], explores
the strategic threat related to the control of customer-related data by large
organizations such as Apple and Google. The authors investigate how the
loss of control over data ownership might influence retailers and analyze the
responses available; this includes 12 building blocks that could be applied in
the future, a mobile-based customer interface and marketing. Lewis, Whysall, and Foster [9], in the second paper, investigate four UK-based multichannel retailers. The research presents drivers and barriers associated with multichannel implementations. The findings indicate that meeting customer needs and aiming to increase sales are the main motivations for moving to a multichannel model. Limited resources, problems of channel integration, staff engagement, and cultural barriers are identified as the main issues in implementing a multichannel strategy. In the third paper, Cao [6] presents results of research focused on the Chinese retailer from the consumer electronic appliances sector. The work covers the implementation of cross-channel strategy and the evolution of cross-channel business models. The findings suggest that the store could serve as a hub that brings together online and traditional channels. The final paper in this issue, by Blázquez [2], investigates issues related to the translation of the in-store shopping experience into the online environment. The research is focused on the interrelation of customer experience, perceptions, and motivations when buying across multiple channels, through a study of the UK fashion industry. Research findings indicate the need for a holistic approach that will integrate the channels, including mobile and social networks.

**Conclusion**

The papers in this issue provide a valuable contribution to understanding the role of information technology in retailing. The increasing use of mobile devices and social networks makes the traditional online–physical channel dichotomy obsolete, as the lines between channels are blurred. From these changes a new business model is emerging—the omnichannel, which will be less focused on the channel used and more on the interaction between the customer and the brand. However, before such a level of cross-channel integration can be achieved, retailers aiming to implement an omnichannel strategy may need
to focus on including mobile and social networks as new channels, balancing privacy and customization, and redesigning their supply chain network, while at the same time keeping in mind different customer requirements.

Even though the findings from the focus groups have inherent limitations, such as lack of generalizability, because they are based on purposeful samples, possible social conformity, and potentially biased responses [4], we believe that they formulate important questions that should be explored further. The themes included in the framework (Figure 1) and analyzed in the papers in this Special Issue contribute to studies of the impact of information technology on retail strategy and operations. We believe they will stimulate further research in this area.

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