

BLENDING SHOPPING

Interactivity and Individualization

Britta Fuchs, Thomas Ritz

Faculty of Electrical Engineering and Information Technology, FH Aachen, Eupener Str. 70, 52070, Aachen, Germany

Bastian Halbach, Florian Hartl

Faculty of Electrical Engineering and Information Technology, FH Aachen, Eupener Str. 70, 52070, Aachen, Germany

Keywords: eCommerce, Blended shopping, Mass customization, Web 2.0, Social networks.

Abstract: In this paper we describe in short the main characteristics of the separate sales channels traditional retail and eCommerce with regards to the sales process of consumer goods. Afterwards we explain the integration of both channels to blended shopping. The behaviour of consumers is influenced by technology driven trends from which we identified the development of web 2.0 and social networks as relevant for blended shopping. Additionally mass customization offers new possibilities to meet the increasing demand for individualized goods close to mass product prizes. The combination of the discussed trends and developments is the basis for a method to structure the development of blended shopping concepts for retailer. As examples two prototypes developed according to results of this method are presented in this paper. The paper closes with a future outlook.

1 INTRODUCTION

Consumer, trader and manufacturer had to adapt to dramatic changes during the last years. eCommerce is accepted next to traditional sales channels and result – besides other technology-driven trends – in a complex environment.

Web 2.0 with its architecture of participation and social networks are used to produce and share user-generated content. These trends influence the shopping behaviour of consumers. New technologies and approaches allow individualized mass production (mass customization) with the integration of customers into the configuration process as one precondition. Configurators are already widespread in the internet, but “the digital world” is not integrated part of traditional commerce yet.

In this paper we seize these new trends and present a method that enables retailers to blend traditional commerce with web based content and services in order to create fitting shopping experiences or provide appropriate processes (blended shopping). We give a look-out on further possible developments integrating manufacturers into the sales process for individualized goods.

2 STATE OF THE ART IN RETAIL, ECOMMERCE AND BLENDED SHOPPING

ECommerce is an established distribution channel besides traditional retail. Often trade chains and merchants run both channels in parallel with separated processes (Fuchs and Ritz, 2009b), (Fuchs and Ritz, 2009a). Following both sales channels with their differences are described. The chapter closes with explaining blended shopping as the combination of both channels.

2.1 Traditional Retail

Some years ago traditional retail was the main sales channel for consumer goods (Krafft and Mantrala, 2006). The core of traditional retail is the physical presentation of goods in combination with advice and instant availability of goods. Digital information regarding customer and buying behaviour are often not available, especially when the customers pay cash. These characteristics result in specific advantages and disadvantages which are presented in detail in (Fuchs and Ritz, 2009a).

Nowadays traditional retailers face challenges arising from increasing competition. Due to this more and more trade chains and merchants offer their goods as well via webshop (Krafft and Mantrala, 2006). Configuration of individual products in retail is done for custom-tailored products like tailor-made suits. Then the customer decides about the criteria (measures, texture, design, etc.) with the help of a sales assistant. This service requires no specific knowledge and ability of the consumer and reduces the risk of receiving other results than expected.

2.2 eCommerce

ECommerce applies the distance selling concept which is already used by catalogue sellers, now making use of the internet and latest technology to present products and support the sales process. In general this contains no physical contact between product/merchant and customer (until fulfilment phase). Because of price transparency easily comparable products like books, DVD / CD / Video and electrical equipment (Kroeber-Riel and Weinberg, 2008) have the biggest share in eCommerce. The buying decision is made on a more rational way and is less emotionally influenced (Mobile Fachgruppe im BVDE, 2008). A structured presentation of advantages and disadvantages of eCommerce is shown in (Fuchs and Ritz, 2009a).

Distribution of web-enabled mobile devices contributes to the establishment of mCommerce (Dholakia et al., 2006). This offers new possibilities for blended shopping concepts. Until now obstacles regarding usability (e.g. difficult navigation with mobile devices in web shops designed for a screen size of a stationary monitor) often cause a lack in acceptance.

The trend of individualized mass products (mass customization) (Piller and Tseng, 2010) leads to a wide variety of configurators available in the internet. Those configurators are used to define specifications for individualized goods without assistance of a sales person. Complex interdependencies between components or characteristics as well as specific data formats often make the handling difficult for consumers, especially when they are not computer-savvy. In general online configuration is to be done without having a product at hand and without personal support which requires the ability to think abstractly.

2.3 Blended Shopping

When comparing advantages and disadvantages of

traditional retail and eCommerce it becomes obvious that – depended from the situation and requirements – the disadvantages of one sales channel may be compensated by the other one. Selecting processes of both channels for one purchase could be an advantage for the customer (e.g. selecting a pair of ski in the branch and let it be delivered at home by eCommerce, because the customer don't like to carry them when continuing shopping that day). But this is not supported by the merchants yet (Fuchs and Ritz, 2009a).

Blended shopping is defined as “execution of the transaction phases (information, mediation, negotiation, contracting, fulfillment and after-sales) involving both, real sales and presentation mechanisms as well as network based sales functionality” (Fuchs and Ritz, 2009a). Precondition of blended shopping is that merchants run both channels: eCommerce as well as a branch network. This combination is already quite established (Krafft and Mantrala, 2006). Usually eCommerce is organized as separated unit with separated processes. Each unit fears that the other may jeopardize the own turnover.

The idea of blended shopping seizes the so called multi-channel behaviour of customers which is already object of investigation. Multi-channel behaviour describes how consumers make use of different distribution channels for one purchase. In a study the authors (van Baal and Hudetz, 2008) found out that customers make use of advantages of both sales channels depending on their needs and attitudes, e.g. ¼ of purchases in 2008 were prepared by using the respectively other channel. It has become a common practice to touch and test the product in a branch and order it by eCommerce, because lower prices are expected. Often this applies but eCommerce is associated with other disadvantages. Blended shopping enables merchants to offer services and information best fitting to the consumer's situation. This could lead to higher customer satisfaction. In the end the merchant who offered information and advice aims to clinch the deal instead of losing it to eCommerce competition.

When taking the individualization trend into account, blending eCommerce and traditional retail processes involves production and logistic processes as well. For the consumer it would create added value if the interface for all processes connected with individualized products is one contact person: the merchant. In two field studies (Fuchs and Ritz, 2009a);(Fuchs and Ritz, 2009b) it was proved that blended shopping concepts are scarcely applied in Germany yet.

3 WEB 2.0

The situation in retail is affected by trends emerging from the widespread availability of internet (ARD-/ZDF-Medienkommission, 2009). Web 2.0 and based on this the development of social networks influence the shopping behaviour of consumers.

The term web 2.0 was coined in 2004 (O'Reilly, 2005) as further development of the internet after analyzing the results of the dot com bubble burst. According to O'Reilly web 2.0 can be described by a set of principles and attributes. One of the core principles of web 2.0 is the architecture of participation instead of passive consumption of content. The penetration of broadband connection at decreasing cost was an important precondition for user participation (Horrigan, 2006) and participation is the basis for social networks. The idea of social networks is not new but the actually widespread distribution was enabled by web 2.0.

Bigger parts of services allocated to web 2.0 can be described as social software. They all have centralizing human social behaviour in common (Coates, 2005). Social networks as subarea of social software provide mainly organization and maintenance of contact networks. As one success factor of social networks object-centred sociality (Engström, 2005) emphasizes the necessity to share common objects. Additionally different functionalities may be important for the user, e.g. identity or conversation (Webb, 2004). Testimonials and user-generated content result from the activity in social networks and influence the purchase decisions of consumer. Those newer trends of influencing consumption decisions need to be integrated into blended commerce concepts

4 INTERACTIVE CONCEPTS

The trends described in the chapter before make clear that merchants and consumers operate in a complex context. Because of available information and communication technologies as well as social networks consumers are very well informed about products and offers. But they have to structure the information themselves. And information from the internet is still separated from the retailer's branch.

Our research focuses on exploring how information of third parties (social networks as well as manufacturer) can be integrated within traditional retail stores in a structured way. Consumers make use of web 2.0 and social networks at home, we

search for ways to embed these sources into the sales process at the POS. Usage of web-based platforms and contents presume access to the internet. This can be realized either by stationary terminals within the shop or by consumers' mobile web-enabled devices. Both possibilities differ in strategic impacts like e.g. investments in infrastructure and require different frameworks e.g. for appropriate presentation of content related to environmental, situational and device-dependent circumstances.

In the upcoming chapter we present an approach to select information services. Prototypes developed based on results of this evaluation method will be presented afterwards.

5 EVALUATION METHOD

Nowadays merchants have a lot of possibilities to strengthen their position in competition with product information systems. A product information system provides public accessible information related to one or more products. For merchants it is often difficult to decide if an investment is reasonable, how the solution should look like and what information from what source should be embedded. To support the decision process, we developed a method to evaluate the given situation, to derive requirements regarding the product information system and to support the development of possible approaches.

This method allows structured guidance but demands individual assessment of each situation. The result of one session cannot be deemed as standard solution. We identified three core factors which we apply with differentiated characteristics:

- Customer
- Product
- Shopping experience

The factors customer and product are closely connected, e.g. the product type has influence on the information demand of the customer. Nieschlag (Nieschlag et al., 2002) applies involvement to distinguish products on the basis of the consumer's motivation to select and handle product-related information. Obviously products with high involvement like cars and vacation trips need another kind of product information system at the POS than low involvement products like cleaner or flour (Kuß and Tomczak, 2007).

Besides the product and the involvement of the customer, the character of the shopping experience which should be created by the product information system is emphasized in this method. Shopping experience (Weinberg, 1992) is understood as a

subjectively sensed contribution to the consumer’s quality of life generated by a product, service, sales conversation or anything related to the product presentation. Based upon the mentioned factors we developed a method that enables merchants to evaluate product information system requirements in a given framework (product, situation) and supports the development of realization approaches (e.g. mobile or terminal solution, shape, necessary features,...). Two prototypes created based upon results of the applied method are presented in the upcoming chapter.

6 PROTOTYPES OF PRODUCT INFORMATION SYSTEMS

As mentioned, web-based content can be integrated in branches either by terminals or by consumers’ mobile devices. Following in subsection 6.1 and 6.2 prototypes for both scenarios are presented which have been developed upon results of the method presented in chapter 5. While the ski-example mentioned in chapter 2.3 visualizes a process link-up at a late point of the shopping process (fulfilment) we aim to address with both prototypes blended shopping at a very early stage (information, mediation). In subsection 6.3 both concepts are compared regarding advantages and disadvantages for merchants and consumers.

6.1 Sensor-based Sales Terminal

Information terminals in shops are no new idea. One well known example is the barcode scanner in super markets where the customer can check the price of a product. Since a few years merchants try to develop new concepts of offering digital information on demand, e.g. drug stores connecting product and information systems with health guidance (DM Drogeriemarkt).

At the moment service terminals often present available product information from manufacturer but do not respond to the specific needs and do not interact with the customer like an “advisor”. Furthermore they do not take advantage from the fact that the customer has a product at hand to test and touch and to explore configuration possibilities.

A possible solution for that was designed in an interaction sensor-supported information prototype shown in figure 1. A range of physical products (like cameras) are arranged on a rack that is linked to an interaction terminal by RFID. When a consumer

picks up a product, the system starts to interact. It identifies the product removed from the rack and gives advice what should be tested (e.g. “give the sports modus of this camera a try by focussing a moving person. Check the result on the screen.”). Additionally web based information like testimonials from social networks is embedded. The concept aims to generate shopping experience in order to establish an emotional commitment of the consumer.

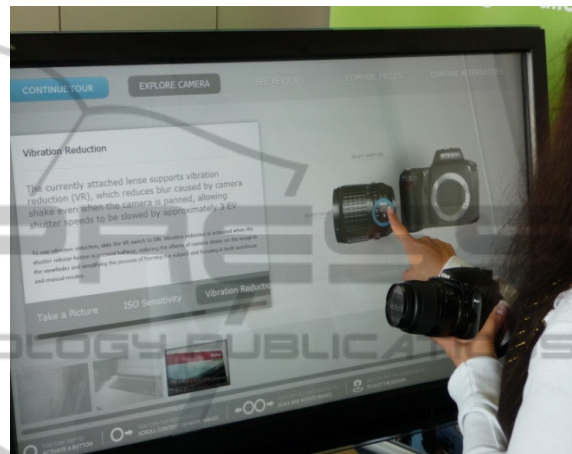


Figure 1: Interaction sensor-supported information prototype.

An illustration of the concept is given in figure 2.

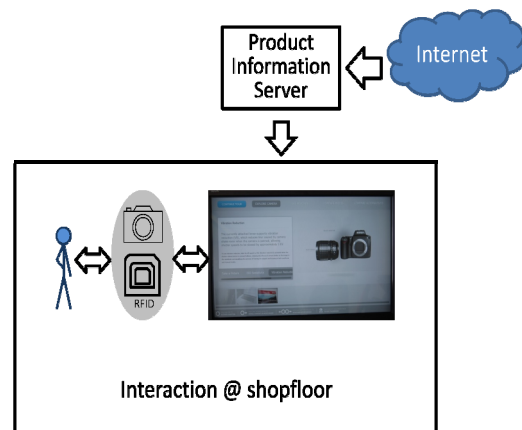


Figure 2: Interaction sensor-based sales Terminal.

First tests with possible users proved acceptance and appeal of the prototype.

But merchants are still not prepared to support price transparency. In future possibilities to offer individualized accessories or components (e.g. camera bags with an individualized surface) can be embedded. The configuration process would take

into account that the consumer has the camera at hand. Organizing production, distribution and settlement can be integrated into the system.

6.2 Mobile Solution

Widespread availability of web-enabled devices like e.g. smartphones is a precondition for using mobile applications such as presented in this subsection. It can be assumed that already a relevant rate of consumers make use of mobile internet and in future the rate will increase (Tudor and Pettey, 2010). When developing solutions for mobile devices special basic conditions have to be respected as changing light, disconnection time, limited screen size, different kinds of devices and so on. This illustrates the necessity of analyzing the given or targeted situation as described in section 5.

In the example shown in figure 3 an iPhone application was developed which enables the consumer to receive web based information like testimonials and prices in the shop during testing the product. This app could be offered by a merchant to structure information. Reference to linked products or accessories are possible.

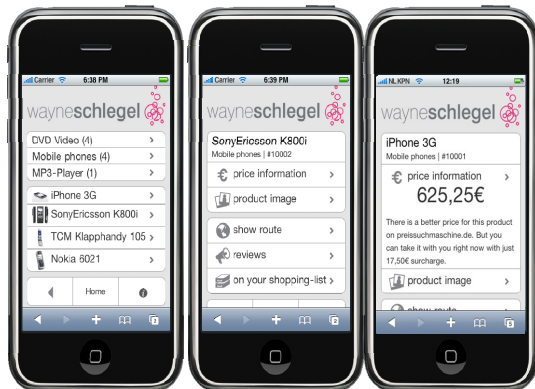


Figure 3: iPhone application for web 2.0 in the shop (Fuchs and Ritz, 2009a).

An illustration of the concept is given in figure 4. This application was tested with possible users and proved acceptance. Nevertheless merchants have strong concerns regarding price transparency supported by this prototype.

Following advantages and disadvantages of the described prototypes are compared.

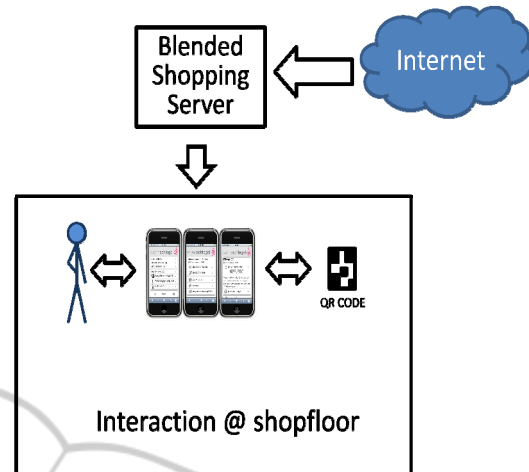


Figure 4: Concept web 2.0 in the shop.

6.3 Comparison of Concepts

In this chapter the presented examples for stationary and mobile web-based sales support are compared regarding their advantages and disadvantages for merchants and consumers. Following table 1 shows advantages and disadvantages connected with the use of mobile or stationary solutions.

Table 1: Advantages and Disadvantages of concepts.

		Advantage	Disadvantage
Terminal	Merchant	Standardized screen definition and presentation possible	Costly infrastructure
	Customer	No own device needed; emotional shopping experience possible	Unknown system and structure; system may be occupied
Mobile	Merchant	No costly infrastructure needed	No influence on content delivered; content structure needed for mobile devices
	Customer	Independent from foreign device; no private data exchange if not desired	Limited screen size reduces shopping experience

The stationary prototype supports the sales process with advice and additional information to explain more complex products and puts the customer into the position to retrieve all information

he or she needs to take a buying decision. It offers a special shopping experience by taking advantage from having the product at hand. Furthermore this prototype could be extended by supporting mass customization approaches (individualized accessories). The disadvantages of this stationary system are the costly infrastructure and the development of advisory structure and content.

The presented mobile solution provides information needed within a shopping situation. The approach is more rational and it does not support an emotional shopping experience. The customer receives information mainly independent from the merchant. This allows only little space for cross selling impulses or any other form of advice. The merchant's efforts are reduced to provide needed information in an appropriate format for mobile devices. In conclusion both prototypes address different shopping situations and depend highly on the product and the target group. We emphasize that both prototypes were developed on the outcomes of the evaluation method in two different scenarios. When merchants are interested in blended shopping concepts the first step is to evaluate the given or aimed situation.

7 FUTURE PROSPECTS

In this paper we presented the necessary theoretic background to describe the idea of blended shopping. Our evaluation method for blended shopping solutions was described. With the help of prototypes we proved the useful utilization of concepts. We emphasize that this method do not include a cost-benefit analysis. Since developing a product information system requires investment, new concepts need to be developed to analyze the cost benefit relation with regards to customer satisfaction and loyalty.

Within this paper we focus on blended shopping concepts for consumer mass products. In future we address the development of mass customization approaches within blended shopping concepts.

REFERENCES

- ARD-/ZDF-Medienkommission (2009). *ARD-/ZDF-Onlinestudie 2009*. Retrieved from <http://www.ard-zdf-onlinestudie.de/>.
- Coates, T. (2005). *An addendum to a definition of Social Software*. Retrieved from http://www.plasticbag.org/archives/2005/01/an_addendum_to_a_definition_of_social_software/.
- Dholakia, N., Rask, M., & Dholakia, R. R. (2006). *M-commerce: Global experiences and perspectives*. Hershey, Pa.: Idea Group Publ. Retrieved from <http://www.gbv.de/dms/zbw/507455649.pdf>.
- DM Drogeriemarkt. <http://www.dm-drogeriemarkt.de/>.
- Engström, J. (2005). *Why some social network services work and others don't: - Or: the case for object-centered sociality*. Retrieved from <http://www.zengstrom.com/blog/2005/04/why-some-social-network-services-work-and-others-dont-or-the-case-for-object-centered-sociality.html>.
- Fuchs, B., & Ritz, T. (2009a). Blended Shopping. In M. Bick, M. Breunig, & H. Höpfner (Eds.), *Mobile und Ubiquitäre Informationssysteme. Proceedings zur 4. Konferenz MMS*.
- Fuchs, B., & Ritz, T. (2009b). Media Interactivity with Blended Shopping. In *International Workshop Media Interactivity. Economic and Managerial Issues*.
- Horrigan, J. B. (2006). *Broadband Trends 2006*. Retrieved from http://www.pewinternet.org/~media/Files/Reports/2006/PIP_Broadband_trends2006.pdf.
- Krafft, M., & Mantrala, M. K. (2006). *Retailing in the 21st Century: Current and Future Trends*. Berlin, Heidelberg: Springer Berlin Heidelberg.
- Kroeber-Riel, W., & Weinberg, P. (2008). *Konsumentenverhalten*. München: Vahlen.
- Kuß, A., & Tomczak, T. (2007). *Käuferverhalten: Eine marketingorientierte Einführung*. Stuttgart: Lucius & Lucius.
- Mobile Fachgruppe im BVDE (2008). *Mobile Kompass 2008*. Retrieved from http://mobile.bvdw.org/fileadmin/downloads/fachgruppen/Mobile/bvdw_mobile-kompass_2008.pdf.
- Nieschlag, R., Dichtl, E., Hörschgen, H. (2002). *Marketing*. Berlin: Duncker & Humblot.
- O'Reilly, T. (2005). *What Is Web 2.0: Design Patterns and Business Models for the Next Generation of Software*. Retrieved from <http://www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html>.
- Piller, F. T., & Tseng, M. M. (2010). *Handbook of research in mass customization and personalization*. Singapore: World Scientific.
- Tudor, B. & Pettey, C. (2010). *Gartner Says Worldwide Mobile Phone Sales Grew 17 Per Cent in First Quarter 2010*. Retrieved from <http://www.gartner.com/it/page.jsp?id=1372013>.
- van Baal, S., & Hudetz, K. (2008). *Das Multi-Channel-Verhalten der Konsumenten: Ergebnisse einer empirischen Untersuchung zum Informations- und Kaufverhalten in Mehrkanalsystemen des Handels*. Köln: IfH.
- Webb, M. (2004). *On social software consultancy*. Retrieved from http://interconnected.org/home/2004/04/28/on_social_software.
- Weinberg, P. (1992). *Erlebnismarketing*. München: Vahlen.