

ECONOMIC IMPLICATIONS OF MOBILE COMMERCE - AN EXPLORATORY ASSESSMENT OF INFORMATION SEEKING BEHAVIOR -

Ingo Pippow, Dietmar Eifert, Jens Strüker

*Albert-Ludwigs-University Freiburg
Institute of Computer Science and Social Studies, Telematics Dept.
Tel. +49-761-403-4963 – Fax +49-761-203-4929
Friedrichstrasse 50 – 79098 Freiburg im Breisgau – Germany
{pippow | eifert | strueker} @ iig.uni-freiburg.de*

ABSTRACT

For the development of mobile commerce, new services and applications are currently under design. These include primarily digital products. In this article, we argue that mobile distribution of digital products is only one possible scenario of mobile commerce. Moreover, we argue that mobile communication of product information as a complementary service to selling non-digital products is a promising field for businesses in mobile commerce as well, so far being underexposed. In our model, we argue on the basis of the economics of information that information seeking customers demand highly specified information that sellers should provide. We suggest that individualization of services and product information will be the best way to do so.

KEY WORDS

Mobile commerce, economics of information, information seeking behavior

1. INTRODUCTION

For the current development of mobile commerce, new services and applications, based on mobile user devices, are being planned or discussed. These include for example mobile banking, ticketing, or traffic routing. However, to date neither business models, nor scientific perception of mobility permit a well-defined structuring of such services yielding to comprehension of success factors for the „mobile economy“. As a contribution to the field, we provide a structuring of the expected offering of goods and services in mobile commerce, based on implications of the economics of information. From the demands of information seeking customers, we draw conclusions for potential success factors for companies operating in mobile environments. In the first part, we provide a product matrix, in the latter we discuss economic implications of the fields within this matrix.

For a structuring of goods and services suitable for mobile commerce, we deploy a combination of transaction cost economics with implications of the economics of information. According to transaction cost economics, transactions may be separated into several different phases (cp. figure 1)

[27]. As we focus on information seeking behavior of customers, we mainly consider the transmission of information and thus we draw conclusions from the information phase.

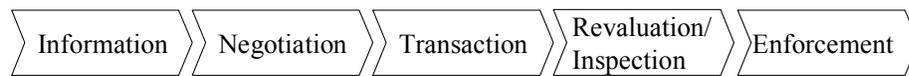


Figure 1: Transaction phases

2. INFORMATION SEEKING BEHAVIOR IN MOBILE COMMERCE

2.1. The information phase in electronic and mobile commerce

When a buyer and seller are going to undertake a transaction, they first must initiate it, i.e. they have to find each other as well as the relevant product information [27]. The information phase is of particular importance for electronic and mobile commerce because Internet technology enables easier finding of this information at lower costs. This eventually leads to a reduction of information asymmetries, when customers make more deliberate purchases by being better informed about products – called “Information Seekers” [23] – and are able to rely on various sources of information and base their purchasing decision rather on price and quality than on brand image for example. This development has been observable in *electronic* commerce. For instance, with search engines or portal sites, buyers may easily obtain information about products or quality of service, and even entire transactions may be partly conducted digitally without difficulty [24]. In general, buyer search costs are reduced by Internet technology [1], and Web surfing patterns certainly follow utility maximizing behavior [9]. As behavioral research in fact provides evidence for the emergence of information seeking customers [2], and their use of sophisticated search techniques described by e.g. [3], a shift in customer behavior within the information phase in electronic commerce may be noted. We conclude that the further improved availability of information in *mobile* commerce even further enhances information seeking behavior by customers in general. In particular, we propose a new form of information seeking behavior in mobile commerce when customers combine traditional, physical shopping with sophisticated searching for alternatives with mobile devices.

Publishing information, on the other hand, has become cheaper as has searching for information. Increased information quantities have led to the phenomenon of information overflow. Finding specific information may be a challenging task for customers on the Internet, processing *all* available information about a product may be impossible. Thus, although cheaper to obtain, information is far from being costless [19]. Also, the quality of the information obtained is not guaranteed which is actually one of the most recognized hurdles of electronic commerce, e.g. [17]. Thus, an information filtering mechanism providing useful and reliable information as a signal of product quality [12], or the physical inspection of the goods intended for purchase by the customer may yet be necessary.

2.2. Product characteristics relevant for the information phase

When a customer tries to improve his purchasing decision, he aims for a reduction of information asymmetries between the seller and himself. In order to reduce the risk of a mispurchase, he demands price and product information. However, during the purchase process, uncertainty remains about the true value and quality of the product. In fact, the kind of uncertainty depends on certain product characteristics, which may be divided into three categories [12] [4]:

Search and inspection characteristics: These are goods’ properties that a customer may evaluate completely prior to purchase, e.g. price, color, size, etc. Information about search attributes may be communicated easily on the Internet. As information seeking customers engage in searching for price and features of a product, they do not have to solely rely on information provided by a single merchant but rather obtain a general market survey [18]. In conclusion, information asymmetries between seller

and buyer may be leveled by information seeking customers in e- and m-commerce, and they will rather rely on information collected by themselves.

Experience characteristics: These are properties a customer may evaluate after purchase when consuming the product, e.g. the taste of food products. Information about experience characteristics is rather difficult to obtain, hence consumers either rely on their own experiences from previous purchases (internal information) or on external knowledge, e.g. reviews by other users like at dooyoo.com. Thus, only partial leveling of information asymmetries is possible on the Internet, and customers still need to either have confidence in the product information available or physically inspect the goods during the purchase process (e.g. by examining experience characteristics of a car during a test drive).

Trust characteristics: Trust characteristics can never be judged entirely by a customer, because asserting their truthfulness yields prohibitive costs [25], e.g. proving car safety in a crash will be too expensive for a customer. As gathering information is too expensive, in order to reduce remaining uncertainties about product quality, customers must trust other sources of information, e.g. rely on brands or third parties providing this kind of product information [13] [16]. In respect of trust characteristics, credibility remains an important way of reducing information asymmetries on the Internet.

While search and inspection characteristics can be entirely digitalized and hence be observed by the customer, this is only partly true for experience and trust characteristics. A customer may not even trust a third party providing this information, i.e. experience characteristics are called to be non-substitutable (see e.g. [14] for the general untrustworthiness of information intermediaries), and thus he only relies on his own physical inspection of the goods during the purchasing process. Therefore, *some product information the customer demands is only available at the point of sale*. This holds a special chance for mobile commerce, because customers may inspect goods at the point of sale and simultaneously inquire search and product characteristics of alternative purchases with their mobile device. For instance, when purchasing a car over the Internet, price comparison is possible as well as sourcing substitutable product information. A test drive, for transmitting at least some non-substitutable product information, is impossible. However, in a mobile commerce scenario, a customer may investigate other car dealer's prices during a test drive with his mobile device. Note that in this case, product heterogeneity is somewhat commoditized as the latter dealers only compete on search and inspection characteristics. An interesting application related to the subject is the "car configurator" developed by Eyeled in Germany that has already been tested with the Smart automobile. With this tool, a customer may configure (and purchase) his own individual car with a PDA during a test drive for example. At the same time, the seller is supported with information about alternative modules, etc. This way, a customer may for example "feel" sitting in a car (experience characteristic) but choose an alternative car seat, as information about the seat now changed to be of search and inspection characteristic and thus is communicable.

2.3. Information seeking in mobile commerce

So far, we considered common aspects of electronic and mobile commerce. However, when considering the information phase of a transaction, some specific aspects of mobile commerce may be pointed out. In this manner, we define mobile commerce as, on the one hand, mobile *distribution of digital products* and, on the other, the mobile *communication of product information*. We do not treat utilization of mobile business technology for internal cost reductions. Mobile *distribution of digital products* particularly include the following services [11]:

- location-based services: traffic services (navigation, routing, car pool management), resource control, etc.
- situation-based services: e.g. warning and memory services, etc.

- person-based services: communication services, transaction services, security services (based on easier user authentication with personal devices), infotainment, etc.

Mobile *communication of product information* is a promising extension of the prevailing perception of mobile commerce being limited to distribution of digital products [11]. As we will show, with the proliferation of information seeking activities by customers in the mobile economy, mobile commerce technology may also be utilized to transmit information about products primarily not designed for this. For instance, mobile chips may replace barcodes, e.g. in the retail sector. Thus, the packaging of goods could contain important product information such as price, minimum durability, etc. With mobile user devices, customers could automatically receive this information as a complementary mobile service of a stationary merchant.

Thus, for the information phase in *electronic* commerce, the major implication of digitizing product information is a lower search costs for customers. Additionally, in *mobile* commerce even product information (about experience characteristics) which is not digitizable may be experienced. From the perspective of the economics of information, this combination of lower search costs and the opportunity to experience non-communicative product information is the major implication of mobile commerce for the information phase.

When searching for product information, there are some new cause variables for the searching process in mobile commerce. In the style of [26], search costs a customer faces may be defined as the sum of the cost of the information itself (C_{Info}), the costs of using an infrastructure for accessing the information (C_{Infra}), and the opportunity costs of time and distance for receiving the information (C_{Opp}):

$$C_{\text{Search}} = C_{\text{Info}} + C_{\text{Infra}} + C_{\text{Opp}}$$

For mobile commerce, it may be assumed that C_{Infra} is higher than in electronic commerce. Mobile connection costs will be higher than stationary connection costs, bandwidth may be limited, and technical limitations of mobile devices (e.g. a very small display) may impede searching. For simplicity, we set C_{Infra} for electronic commerce to zero, so this parameter solely reflects the additional costs of using mobile devices (cf. table 1 for reflection of all parameters).

In the following, it must be differentiated which kind of product information is searched for. For *search and inspection characteristics*, as well as *substitutable experience and trust characteristics*, it holds that they may be digitized and thus communicated easily in electronic or mobile commerce. Thus, the costs of the product information C_{Info} should be independent of the distribution channel. As argued, infrastructure costs C_{Infra} are highest for mobile commerce. The opportunity costs of time and distance are highest for stationary (physical) commerce because for any product information, the specific merchant must be visited. Thus, an information seeker will not use this channel as it is inferior to electronic commerce. With mobile commerce, $C_{\text{Opp}} = 0$ because the information retrieval is possible anywhere. For electronic commerce, C_{Opp} depends on the location of the next Internet access point. For location based services, C_{Opp} of electronic commerce will be high for example. Thus, for using mobile or electronic commerce to retrieve this kind of product information, customers face a trade-off between C_{Opp} and C_{Infra} . The utilization of mobile commerce thus depends on the urgency of immediate information retrieval and the length of time and the speed of the information retrieval as crucial parameters.

Non-substitutable experience and trust characteristics cannot be communicated digitally. Unless the product itself is transferred if it is digital (e.g. a trial version of a software), there is no way but visiting the specific merchant in order to physically inspect the good (e.g. with a test drive) and receive this kind of product information. Retrieving non-substitutable product information for non-digital goods is not possible in electronic commerce, therefore C_{Info} will be prohibitive high. An information seeking customer demanding this information will thus visit a merchant (facing a certain C_{Opp}). With mobile commerce, the customer may now simultaneously to experiencing a product receive alternative product information as seen with the “car configurator”. Thus, he either increases product quality

when configuring it according to his needs, because he is now better informed. Or he reduces the risk of paying a price above market level when comparing prices with his mobile device. In both cases, the customer may lower C_{Info} .

Table 1: comparison of search cost parameters according to distribution channel

search cost parameter	distribution channel		
	mobile commerce	electronic commerce	stationary commerce
C_{Info} : costs of product information (search and inspection characteristics)	costs independent of distribution channel		
C_{Info} : costs of product information (experience characteristics)	high (lower than stationary)	--- (unachievable)	high
C_{Infra} : infrastructure costs	high	zero	high
C_{Opp} : opportunity costs of time and distance	zero	medium	high

3. GOODS AND SERVICES SUITABLE FOR MOBILE COMMERCE

Taking into account the different search cost parameters as above, we will derive the product matrix from the information phase of a transaction in this section. The main focus is on the mobile *communication of product information*. Customers searching for product information will use mobile commerce depending on the search costs they encounter and the utility they derive from a better search. This is subject to the product type being digital or not (see above) and the value of the product.

3.1. Digital products with low value

In this segment, customers have lower search costs in mobile commerce as well as electronic commerce and, additionally in mobile commerce, reduced opportunity costs of time and travel distance when receiving product information mobile instead of at an Internet access point in e-commerce. On the other hand, customers face significantly higher infrastructure costs with respect to the low product value. Thus, customers decide to use mobile commerce if

$$C_{\text{Infra}} < C_{\text{Opp}}$$

When searching for product information, search and inspection characteristics, as well as the price, are important decision parameters for the customer. Experience and trust characteristics are of minor importance, because the mispurchase risk is low for low value products. Moreover, with digital goods, the customer will get to know these characteristics by trying it out (e.g. downloading a trial version, watching a movie trailer prior to watching the movie, etc.). With a digital distribution channel there is no necessity to visit a merchant. In summary, in this segment both electronic and mobile commerce are reasonable channels, and mobile commerce will be used when the utility derived from mobility outweighs additional infrastructure costs as may be the case for many location-based traffic services.

3.2. Digital products with high value

For digital products with high value, e.g. a software product, search and inspection characteristics of the product are important, and information thereof about product quality will be more important than price information. While this supports both electronic and mobile commerce, experience and trust characteristics are yet more important as the mispurchase risk is high and information seeking therefore rather pays off. However, for digital products visiting a merchant does not make sense, and thus there is no utility derived from mobility for the latter product characteristics.

Mobile commerce will not even be used for retrieving search and inspection characteristics in this segment, though, because the trade-off between infrastructure costs and utility derived from mobility is in favor of electronic commerce. Mobile commerce infrastructure costs are low compared to product value, but they are higher than in e-commerce. Also, they *rise* due to extensive search activities for high price products. On the other hand, opportunity costs of time and distance are relatively low compared to mispurchase risk. These costs *fall* because with extensive search activity, time savings and convenience derived from mobility lose weight. Thus, electronic commerce will be the best distribution channel in this segment.

Note that also the distribution of digital products, not just information about them, is not a scenario for mobile commerce. As infrastructure costs are higher than in electronic commerce, the mobile channel will only be used when the urgency of receiving the product immediately and in situ sets off these costs. Again, for high value products the urgency tends to *decline* as the selection process is rather careful and slow, and the infrastructure costs tend to *soar* as these products will be rather large in size in comparison to low value products resulting in longer transmission times. Both effects speak for a comparative advantage of an E-Commerce distribution channel over a mobile channel.

3.3. Non-digital products with low value

In this segment, just as for digital products with low value, search and inspection characteristics, especially the price, are more important than experience and trust characteristics. However, as the product is non-digital, only product information is available digitally. As any intensive information seeking behavior induces rather high opportunity costs, customers will rather remain uninformed in this segment. Typically, they will either buy products at a physical merchant's store or via mail order selling over the Internet. Thus, mobile commerce is not a promising scenario in this segment.

3.4. Non-digital products with high value

For non-digital products with high value, e.g. an automobile, again for search and inspection characteristics, quality will be more important than price information which supports both electronic and mobile commerce. As the mispurchase risk is high, a physical merchant visit will yet occur in order to receive information about experience and trust characteristics. Search costs are low in comparison to the high risk, so the customer should gain from information seeking activities.

This segment is of particular interest for mobile commerce, in contrast to electronic commerce. Non-digital products of high value did not sell well in electronic commerce. From the perspective of the economics of information, this is due to the fact that certain experience characteristics (e.g. a test drive) cannot be digitized. This is still true for mobile commerce, but now a customer can visit a merchant, "experience" the desired product characteristic and simultaneously search for further price and quality information with a mobile device. Thus, he is able to further reduce his risk of mispurchase as well as the probability to buy the product at a price above market level. This is, to our knowledge, an important implication of mobile commerce on the distribution of high value products that has not received any attention so far.

		Product type	
		Digital product	Non-digital product
Product value	Low value	Suitable for mobile commerce, if $C_{\text{infra}} < C_{\text{Opp}}$	Not suitable for mobile commerce, customers remain uninformed
	High value	Suitable for electronic rather than mobile commerce	Suitable for mobile commerce, if C_{Info} drop

Figure 2: Product matrix

4. SUCCESS FACTORS FOR COMPANIES OFFERING PRODUCTS IN MOBILE COMMERCE

Taking into account the product types suitable for mobile commerce, we outline some firm strategies in order to gain competitive advantages in mobile commerce. The main idea is the extrapolation of electronic commerce strategies to mobile commerce environments, taking into account the product matrix. As already shown, high value non-digital products as well as low value digital products are prominent candidates for mobile commerce applications because customers' utility may exceed additional infrastructure costs in these segments.

		Product type	
		Digital product	Non-digital product
Product value	Low value	Strategy: increasing opportunity costs of time and distance	
	High value		Strategy: increasing utility of search for experience characteristics in purchase process

Figure 3: Success factors in the mobile economy

4.1. Strategies for sellers offering low value, digital products

In the segment of low value, digital products, sellers face increased market transparency and thus higher competition due to information seeking behavior of mobile customers. It may be assumed that individualization, i.e. satisfying customer demands on an individual basis, possibly is an effective counter-strategy against rising market transparency for mobile commerce, just as for electronic commerce [6]. Individualization includes producing and offering individual products (mass customization) [15] and establishing individual relationships with customers (customer relationship management) [7]. With a successful establishment of individualization in the distribution channel, customer loyalty can be enlarged, eventually yielding greater sale volumes [8], [20]. This effect may even magnify in mobile commerce as customers are already equipped with individual mobile devices, resulting in even higher customer loyalty. For example, individualizing location based services by relating them to specific situations may further increase opportunity costs of time and distance of such services compared to electronic commerce services.

As a case study on the potential of individualization in mobile distribution, we consider Add2Phone, who offer mobile marketing applications. Based on open standards and a modular, integral architecture, they offer innovative marketing services such as ring tones and mobile coupons. Their

solution also incorporates permission marketing support, mobile user profiling and personalization, precise targeting mechanism, advanced reporting, and billing. Nearly any content can be concatenated with an http link to their platform and then be sent to end-users. Thus, customers may easily develop, launch and monitor revenue-generating mobile applications. For instance, the popular SMS portal iobox.com is based on this technology.

With the low costs of generating individualized content, based on the presented enabling technology, product information may also be less costly communicated. For digital products, even an individualization of the product is achieved. Thus, transmitting findings for electronic commerce [6], we assume that for mobile distribution of low value digital goods, individualization will be a success factor.

It is interesting to note, however, that mobile distribution of digital goods may cannibalize other distribution channels when firms practice a multi-channel strategy. This effect may superpose the previous customer loyalty advantages. While electronic commerce is a complementary channel to physical distribution, this may not be true for mobile commerce anymore. With electronic commerce, customers forsook information about experience and trust characteristics for the sake of transaction cost savings. Thus, the “click and brick” multi-channel distribution strategies proved not to be mutually exclusive but rather cover different customer preferences [10]. As this trade-off will be revoked with mobile commerce, we assume that for mobile distribution of low value digital goods, cannibalization of alternative distribution channels will occur.

4.2. Strategies for sellers offering high value, non-digital goods

Primary, in the segment of high value, non-digital products mispurchase risks are high for customers. Thus, it is essential for them to gain knowledge about experience characteristics of a product. While the resulting search costs were prohibitive high in electronic commerce, in stationary commerce costs were high for both customers and sellers as well. For customers, search included visiting several merchants, while sellers could accept these costs partly by offering consultancy services for customer guidance. With mobile commerce, experience characteristics of a product may turn to be search characteristics as shown. Thus, a seller can offer additional, specific, and individualized information for customers. This way, he is able to reduce costs for consultancy services. At the same time, the customer is better informed about the product which he is going to purchase, increasing efficiency of matching.

Consider again the example of barcode replacing mobile chips as, for example, recently developed by a consortium of Intel, SAP, and Metro. Not only can these chips store (digitizable) product information, but furthermore, they are supposed to support automated product identification from production, transportation, storage, up to distribution. Thus, this technology promises enormous cost savings in the logistics sector. Additionally, the increased availability of product information may add value to production.

If this technology is implemented in order to provide local and individualized product information, customers are hindered from accessing external information sources. Thus, while C_{Info} drops as well as search costs, customer loyalty increases at the same time. For example, when purchasing a car and objects within the car communicate with the customers mobile device, the sellers (human) consultancy may partly be replaced without loss of purchasing experience.

5. OUTLINE FOR FURTHER EMPIRICAL RESEARCH

Within an array of surveys, electronic commerce success factors have been tested and verified over the last years [17], [5], [21]. For the article on hand, as a research in progress, a new survey is planned. This will cover multi-channel distribution strategies for companies active in mobile commerce. Within this survey, the expectations proposed in this framework will be evaluated.

6. REFERENCES

1. Bakos, Y.: "Reducing Buyer Search Costs: Implications for Electronic Marketplaces." *Management Science*, 43, 12 (1997), pp. 1676-1692.
2. Catledge, L.D. and Pitkow, J.E.: "Characterizing Browsing Strategies in the World Wide Web". Georgia Institute of Technology (1995).
3. Choo, C.W., Detlor, B., and Turnbull, D.: "Information Seeking on the Web: An Integrated Model of Browsing and Searching." *First Monday*, 5, 2 (2000).
4. Darby, M. and Karni, E.: "Free Competition and the Optimal Amount of Fraud." *Journal of Law and Economics*, 16 (1973), pp. 67-88.
5. Eggs, H. and Englert, J.: "Electronic Commerce Enquête II - 1999/2000." Stuttgart: Konradin (1999).
6. Eifert, D. and Pippow, I.: "Erfolgswirkungen von One-to-One Marketing - Eine empirische Analyse." In: Buhl, H.U., Huther, A., and Reitwiesner, B. (eds.). *Information Age Economy*. Heidelberg: Physica (2001), pp. 265-278.
7. Hildebrand, V.D.: "Individualisierung als strategische Option der Marktbearbeitung: Determinanten und Erfolgswirkungen kundenindividueller Marketingkonzepte." Wiesbaden: Gabler (1997).
8. Homburg, C., Giering, A., and Hentschel, F.: "Der Zusammenhang zwischen Kundenzufriedenheit und Kundenbindung." *Die Betriebswirtschaft*, 59, 2 (1999), pp. 174-195.
9. Huberman, B.A., Pirolli, P.L., Pitkow, J.E., and Lukose, R.M.: "Strong Regularities in World Wide Web Surfing." *Science*, 280, 5360 (1998), pp. 94-97.
10. Lal, R. and Sarvary, M.: "When and How is the Internet Likely to Decrease Price Competition?" *Marketing Science*, 18, 4 (1999), pp. 485-503.
11. Meier, R.: "Die Mobile Ökonomie und ihre Wirtschaftsgüter." 2001.
12. Nelson, P.: "Advertising as Information." *The Journal of Political Economy*, 82, 4 (1974), pp. 729-734.
13. Pashigian, B. and Bowen, B.: "The Rising Cost of Time of Females, the Growth of National Brands, and the Supply of Retail Services." *Economic Inquiry*, 32, (1994), pp. 33-65.
14. Patterson, M.R.: "On the Impossibility of Information Intermediaries." Fordham University School of Law, 2001.
15. Piller, F.T. and Schoder, D.: "Mass Customization and Electronic Commerce." *ZfB Zeitschrift für Betriebswirtschaft*, 69, 10 (1999), pp. 1111-1136.
16. Png, I.P.L. and Reitman, D.: "Why Are Some Products Branded and Others Not?" *Journal of Law and Economics*, 38, (1995), pp. 207-224.
17. Schoder, D., Strauß, R., and Welchering, P.: "Electronic Commerce Enquête - Survey on the business uses of electronic commerce in the German speaking area." Stuttgart: Konradin, 1998.

18. Sinha, I. Cost Transparency: "The Net's REAL Threat to Prices and Brands." Harvard Business Review, March/April 2000, available at <http://www.sbm.temple.edu/~jsinha/cost.html>.
19. Smith, M.D., Bailey, J.P., and Brynjolfsson, E.: "Understanding Digital Markets: Review and Assessments." In: Brynjolfsson, E. and Kahin, B. (eds.). Understanding the Digital Economy. MIT Press, 1999.
20. Strauss, B.: "Kundenzufriedenheit." Marketing ZFP, 1 (1999), pp. 5-24.
21. Strauß, R. and Schoder, D.: "e-Reality 2000 - Electronic Commerce: Von der Vision zur Realität." Frankfurt: Consulting Partner Group, 2000.
22. Tapscott, D., Ticoll, D., and Lowy, A.: "Digital Capital." Frankfurt/ New York: Campus, 2000.
23. Thorelli, H.B., Becker, H., and Englewood, J.: "The Information Seekers: An International Study of Consumer Information and Advertising Image." Cambridge, Mass.: Ballinger, 1975.
24. Ward, M.R. and Lee, M.J.: "Internet Shopping, Consumer Search, and Product Branding." Journal of Product and Brand Management, 9, 1 (2000), pp. 6-18.
25. Weiber, R. and Adler, J.: "Der Einsatz von Unsicherheitsreduktionsstrategien im Kaufprozeß: Eine informationsökonomische Analyse." In: Schmalenbachs Zeitschrift für betriebswirtschaftliche Forschung. Sonderheft 35(1990) pp. 61-77.
26. Wilke, K.: "Die Eignung des Internets für die Reduktion von Qualitätsrisiken im Kaufentscheidungsprozeß des Konsumenten." In: Mitteilungen des Instituts für Handelsforschung 52 (2000), 5, pp. 117-133.
27. Williamson, O.E.: "Comparative Economic Organization: The Analysis of Discrete Structural Alternatives." Administrative Science Quarterly, 36, 2 (1991), pp. 269-296.