

Bottleneck or booster of innovations?

A study on the innovation activities of retailers in a consumer-goods setting

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Abstract: Empirical research has shown that product users frequently develop ideas, concepts and even prototype versions for new products. Market-oriented manufacturers could therefore benefit from innovative ideas that are developed by the end customers. In a consumer goods setting, products are mostly distributed via retailers and the end users primarily communicate with dealer salespeople rather than with manufacturer representatives. Thus, the retailing companies and their employees play a key role when it comes to generate stimuli for innovations. This study explores the function of retailers as innovators and innovation gatekeepers. We surveyed 106 sport shop representatives with respect to their efforts to generate own innovations and their activities to mediate new product ideas from the end users.

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1. Introduction

Empirical research in industrial markets has shown that users frequently play an important role in the development of new products (von Hippel 1988). In some industrial markets, such as the semi-conductor and medical equipment field, even the majority of innovations is directly initiated and fully developed by product users (von Hippel 1977; Shaw 1985; Biemans 1991). In the last five years researchers have investigated to a greater extent the inventive activities of users on consumer markets. Shah (2000) explored the sources of innovation for equipment which is used in specific areas of sports, like snowboarding, skateboarding and windsurfing. Her findings reveal that it were always the end users who invented the first versions of the basic equipment in each of these fields. Other empirical studies have investigated the percentage of innovating users among a given user population. The findings show that between 10% and nearly 40% of the user samples do modify or develop new items of products for their personal use (Lüthje 2003a; Franke / Shah 2002). User innovation activities seem to be widely distributed among the user population within a market. In the light of this evidence, manufacturers can expect a rich pool of innovative ideas among their end customers.

When focussing on consumers as a source of innovation, the question arises how manufacturers can identify promising ideas, concepts and prototypes developed by the end customers. How can manufacturers benefit from the creative potential of the product users? In industrial markets, manufacturers have to manage the dyadic communication relationships with their customers. Mostly, sales representatives of the manufacturer directly communicate with the customers in the context of their routine selling activities. Although it is difficult enough, it seems reasonable that the sales force can, in principle, be used as a research capacity to identify attractive user ideas for innovations (Klopemaker 1981; Evans / Schlacter 1985; Lambert et al. 1990).

However, continuous and direct interaction with customers is more difficult in consumer markets. Here, the products are mostly distributed indirectly via dealers. It is therefore a triad of the manufacturer, the retailer and the end customer that has to be managed. Instead of the manufacturers' sales associates, in most consumer markets primarily the retailers' salespeople have the opportunity to directly communicate with product users. In fact, few empirical studies show, that consumers often choose to talk rather with the product dealers than with the product suppliers, even if the retailers are not the primary addressee of their product ideas (Raabe 1993; Lüthje 2000). Thus, the retailing companies and their employees play a key role when it comes to generating stimuli for new products. Although the relationship between retail salespeople and customers has received empirical attention in the academic literature (Beatty et al. 1996; Gwinner et al. 1998; Reynolds / Beatty 1999), studies focussing on the function of retailers for the generation of user innovations and their transfer to the manufacturers are lacking.

We therefore conducted a study in a consumer market setting to explore the function of dealers in the context of user innovations. We surveyed 106 sport shop representatives with respect to two roles that dealers and their employees may play. Firstly, we investigated whether retailing employees frequently act as user innovators by conceiving new solutions for the products they sell. Salespeople build up profound product-related technical and market knowledge. Often enough, this knowledge is accompanied by an extensive experience in product use, either gathered through communication with the customers or built up by own product use. Retail employees

may therefore be well-prepared to conceive highly innovative solutions. Secondly, we explored to what extent retailers act as information hub, i.e. identifying innovative input of their customers and forwarding this information to the manufacturers. Taking into account that most customers have more intensive contact to the dealers than to representatives of the manufacturer, this gatekeeping function seems to be critical.

The paper is organized as follows: In the next section we review relevant research on the communication relationships between manufacturers, dealers and end customers and find that empirical results with regard to the exchange of innovation-related information are scarce. We then develop an initial model of potential facilitators that may explain why some retailers act as innovators or innovation gatekeepers and others show no effort in this context. In this first exploration, we focus on characteristics of the dealers that are observable for the manufacturer and therefore could serve as indicators to select attractive retailers as partners in new product development. In chapter 4 we outline our research methods. The findings are presented in chapter 5. In the final section we discuss the implications of the findings for manufacturers that aim to capitalise, both the creative potential of the retail employees and the end customers.

2. Communication relationships in the manufacturer-retailer-consumer triad

Research in marketing acknowledges that interaction and coordination between buyers and sellers plays a vital role to enhance market orientation. Also practitioners have been inspired to focus on managing stable exchange relationships with stakeholders of the company. Marketers usually expect to gain a number of positive benefits, including superior product profitability and long-run business performance.

Relationship marketing at first has been addressed in the industrial marketing literature. In industrial market settings, direct distribution and dyadic relationships between manufacturers and customers prevail. The communication between both parties does not have to be conveyed by an intermediate party. Relationship management is therefore exclusively customer relationship management.

In most consumer markets the situation is different. Products are usually sold through a channel of distribution wholesalers, dealers, and retail shops to the consumer. From the perspective of a producer of consumer goods, besides the end users, also retailers as immediate customer is an important stakeholder. When compared with b-to-b marketing, in b-to-c settings, more complex communication patterns emerge when managing the relationship in the market channel. As represented in figure 1, three different communication relationships exist.

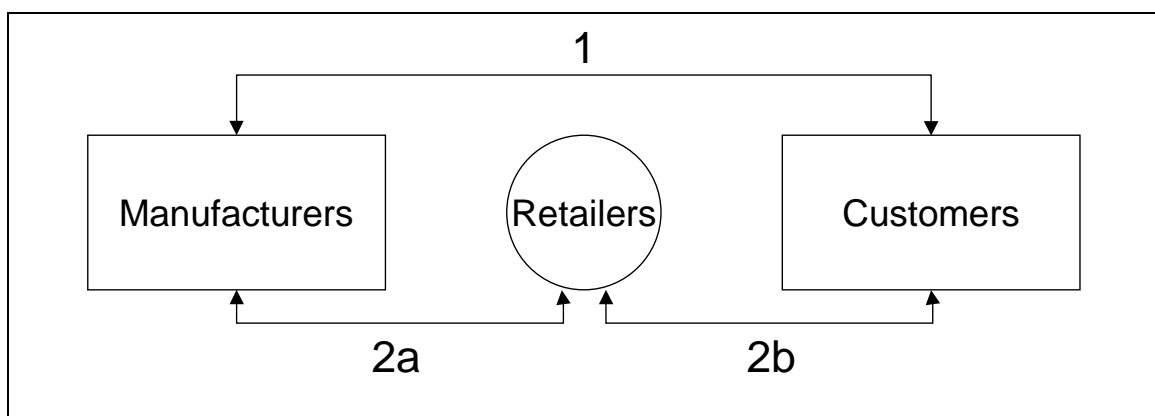


Figure 1: Communication structure in the manufacturer-retailer-consumer triad

2.1. Direct communication between manufacturers and end customers

Firstly, manufacturers can directly obtain information from current and potential customers (see relationship 1 in figure 1). Since salespeople have little immediate contact with consumers, producing companies have to undertake specific and offensive marketing research efforts. For gathering innovation-related user input, manufactures have the opportunity to make use of a variety of proven market research methods throughout the various stages of the product development process. For example, some well-documented methods for the assessment of current and future customer needs (“need assessment”) can be used to generate promising ideas for innovations, such as (virtual) focus groups, newly developed conjoint analysis techniques, perceptual mapping and Quality Function Deployment (Bristol / Fern 1996; Dahan / Hauser 2002; Hauser / Clausing 1988).

In addition, leading companies are increasingly working with so-called Lead Users in the early phases of innovation projects (von Hippel et al. 1999; Lilien et al. 2001). Lead Users are especially well-qualified, leading-edge users who are both, well motivated and sufficiently qualified to make significant contributions to the development of new products or services (von Hippel 1988). Their identification and involvement is supported by the Lead User method – a multi stage approach aiming to identify users that are on the leading edge and to integrate these users into creativity workshops.

In addition to specific and isolated marketing research initiatives, manufacturing firms can also try to induce consumer-initiated contacts to ensure a continuous, unsolicited communication flow between the consumers and the firms (Bowman / Narayandas 2001). Most of the theoretical and empirical research, to date, discusses customer-initiated contacts as the basis of an effective complaint management. In this sense, opening channels for direct communication with consumers are mainly seen as a part of a defensive marketing strategy to reduce the exit of dissatisfied customers and to maximize customer retention (Fornell / Wernerfelt 1987; Plymire 1991; Conlon / Murray 1996). However, customer-initiated contacts can also be used as an important source of information about customer concerns with existing products and suggestions for modified or totally new products. After all, it has been proposed in several studies that problems with existing products and unsatisfied needs are an important trigger for the generation of user innovations (Lüthje 2003a; Lüthje 2003b).

To conclude, direct communication between manufacturers and consumers has been addressed by academics and practitioners. A wide range of powerful tools have been developed to obtain innovative input from the consumers. As discussed in the next section, much less work has been done to explore the indirect exchange of innovation-related information.

2.2. Indirect communication between manufactures and end customers: The role of retailers

The indirect information flow between manufacturers and consumers is usually mediated by the retailers (relationship 2 in figure 1). Most studies involved in investigating this indirect communication present a disjointed framework. The manufacturer-retailer-consumer triad is subdivided into two dyads (manufacturer-retailer, retailer-consumer) which are discussed separately.

2.2.1. The manufacturer-retailer dyad

The cooperation between manufacturers and dealers has been described in the literature on relationship and channel management (see relationship 2a in figure 1). Different studies present comprehensive models of channel working relationships,

either from the manufacturer's or from the distributor's perspective . Most of the models aim to explain the qualitative (conflicts, satisfaction) and quantitative outcomes (e.g. effectiveness, productivity) of a given manufacturer-retailer relation (Anderson / Narus 1984; Anderson / Narus 1990; Mohr et al. 1999). For this purpose, researchers have made great efforts to operationalize and measure different aspects of cooperation (e.g. intensity, formalization, communication content) and to explore their specific relationship with cooperation success (Mohr / Nevin 1990). Also, the antecedents of cooperation in the distribution channel, like channel climate and power distribution, have been explored to explain the realized levels of cooperation (Brown et al. 1983; Anderson et al. 1987; Skinner et al. 1992; Hunt 1995). In light of this vast body of literature one could argue that the relationship of manufacturers and retailers is well understood. However, the specific issue of transferring innovation-related information from retailers to suppliers is not at all covered by existing research. Instead, the focus is on the day-to-day exchange of "routine" marketing information with respect to physical inventory, sales figures, promotional activities, pricing structures and market conditions ((Mohr / Nevin 1990; Ahlert / Hesse 2002).

Altogether, to what extent retailers can serve as a mediator for the users' new product ideas is a black-box. There is also a need for more empirical insights on whether retail representatives may conceive solutions for new products themselves and by this take over the role of an innovator or "co-designer".

2.2.2. The retailer-customer dyad

The second dyad refers to the retailer-consumer relation (see relationship 2b in figure 1) Although the majority of relationship marketing studies focus on business-to-business or service firms, a growing attention is paid to relationships in consumer retail settings (Too et al. 2000. Particularly, the specific benefits that retailers and consumers may perceive from the relationship have been subject of many studies (Gwinner et al. 1998; Reynolds / Beatty 1999). For the retailing company, on the one hand, many benefits are possible. The most discussed ones, however, are associated with increasing customer loyalty and superior knowledge of the customer (Beatty et al. 1996; Too et al. 2000). The focus in the literature is definitely on managing for loyal consumers to achieve higher sales or profits in retailing. This predominant discussion does not cover the possibility for retailers to obtain innovative ideas and concepts from the end users. This might be due to the tendency to restrict the role of customers to that of "buyers". Logically enough, research in relationship management focuses on the shopping process and aims to understand why and how a sense of purchase loyalty develops in customers. The design of ideas for innovations is apparently defined as an effort laying outside the range of normal consumer activities. In doing so, the active contribution of users to the development of new products is not conceived as part of the exchange relation in product retailing.

However, in the last years, another research stream, i.e. studies on service production in the service encounter, starts to consider a more active and participatory role of the customers. In the service context, customers are often part of the production and delivery process. The customers are required to provide information, knowledge and effort to the service organization in order to support its ability to deliver a high service quality (Kelley et al. 1990; Harris et al. 1995; Schneider / Bowen 1995). An increasing research on this topic starts to extend the view of possible customer contributions and often conceives the customers as a productive resource or even as "partial employees" of the service provider (Mills et al. 1983; Keh / Chi 2001). The customer's voluntary and extra-role performance can include behaviors such as suggestions for service improvement and innovation (Bettencourt 1997). It is often noted, that customers are in a unique position to offer guidance to the service firms, because they have considerable experience with the service and have the possibility to benefit from an improvement of the service quality (Wolstenholme 1988). There is anecdotal and

preliminary empirical evidence that customer ideas often have a value to the service firms by solving current service problems, expanding services or even creating totally new services (Plymire 1991; Bettencourt 1997). Thus, customers are seen as important resource contributing innovative input to develop new elements of service delivery. Admittedly, the participation of customers in terms of innovation partners is more self-evident in the service encounter than in the product retail context. After all, service firms themselves are the main addressee of the customer input and they have the possibility to directly implement the innovative suggestions for service improvement. This is not the case, if a consumer develops ideas for product improvements. The product retailer, at the end, is not the main addressee of this information and is not in the position to realize the ideas. Nevertheless, employees, in the stores, interact with and observe consumers more frequently and directly than the manufacturers. This direct contact can prompt the users to communicate their ideas to the retailers even if the salesperson can not directly react. Thus, it seems reasonable that also product users may contribute innovation-related feedback to the retailers instead of forwarding it to the manufacturers.

We therefore believe that the exchange of ideas for new products as an objective of communication between dealers and consumers has not been adequately investigated. More precisely, there is a need for theoretical and empirical work in order to explore, if product retailers, at all, engage in gathering innovative input from their customers and how sales associates assess the potential of the users' product ideas. In addition, we propose that the exploration of facilitating conditions and barriers for retailers to conduct market research on user innovations is not well-understood and should therefore be tackled.

3. The model

As a reaction to the limited knowledge, the current study is conducted to shed more light on the function of retailers as a source of innovation. There are two potential roles our research is designed to investigate: Firstly, we address the question whether retailing employees frequently are innovators themselves by conceiving new solutions for the products they sell. Secondly, we explore to what extent retailers act as information hub for creative consumer input. Specifically, we offer insights whether retailers actually gather innovation-related information from their customers and whether they attribute a high innovative potential with this type of consumer input.

In addition to this descriptive analysis, we develop and test an initial model on potential facilitators that may explain why some retailers act as innovators or innovation gatekeepers and others show no effort in this context. In this first exploration, we focus on characteristics of the dealers that are observable for the sales associates of the manufacturer and therefore could serve as indicators to select attractive retailers for cooperation in new product development. The model is shown in figure 2.

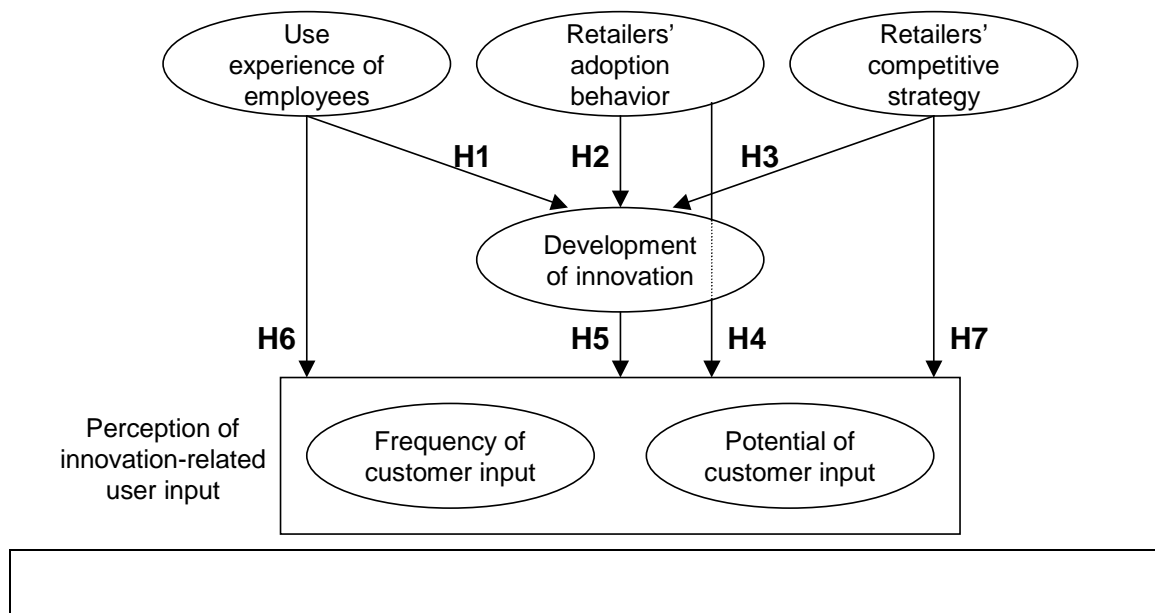


Figure 2: Model on the role of retailers as innovator and mediator of innovation-related user input

3.1. Retailers as innovators

Even if retailers frequently developed ideas for new products, we would expect that only some dealers engage in development efforts whilst other dealers remain passive. But why? Improving existing market offers or conceiving new problem solutions is located outside the range of ordinary retailer activities. The initiation of innovation projects requires a positive outcome of a deliberate decision process by retail representatives. Thus, here, we discuss antecedents that may facilitate innovation efforts and that therefore might differentiate between active and passive retailers.

Use experience

In many markets for shopping goods, the employees working in the retail stores are at the same time sellers and users of the products. Consider the example of sport shops where salespeople are very often active in sports themselves. Use experience may enhance the benefit for dealer representatives to innovate. If they use the products themselves they can expect to promote personal interests and to improve their own consumption situation via the "in-house" use of their invention (Steenkamp et al. 1999). The link between personal benefit expectation and the innovation propensity is well-explored by research on user innovations. For many product fields (e.g. software, sports equipment, medical equipment) it has been shown that product users primarily seek to personally profit from the use of a new solution when they decide to innovate (Franke / von Hippel 2002; Lüthje 2003b; Lüthje 2003a). At the same time, use experience may reduce the costs of innovation. Like in most creative problem solving processes, this type of experience is needed to systematically analyse existing problems, to conceive solutions, and to test these solutions in practice (Weisberg 1999). Sales associates with use experience may be able to obtain a vivid and germane knowledge about use problems and promising solutions to those problems (Hoch / Deighton 1989). Less experienced retail employees probably lack this cheap access to usage information and would be forced to acquire external information at comparatively high costs (Lüthje et al. 2002). Hence:

Hypothesis 1: The more a given dealer employs salespeople with experience in product use, the higher the likelihood that this dealer generates reliable prototypes for innovations.

Inclination towards adoption of new products

Similar to the line of reasoning in the previous section, also the retailers' speed of adoption may be associated with innovation benefits and costs. The degree to which a given dealer is relatively quick in adopting new products that are offered by the industry (innovativeness) may serve as a proxy measure for a high expected benefit of innovations. The adoption of innovations is known to be the result of a deliberate decision process. Consequently, we assume that those retailers that in general associate an additional benefit with new market offers, and therefore usually adopt innovations earlier in the diffusion process, are more likely to initiate innovation efforts (Robertson 1971; Sheth 1994; Rogers 1995). Also the costs for innovation may be lower for retailers that are open to new products from industry and that are the first to put new products in their shelf. They have a good understanding about new product technologies and emerging product trends and by this are likely to be in a better position to conceive their own new product solutions. Again, studies in the field of user innovations support the notion that speed of adoption is a valid indicator for users with a higher innovation propensity (Urban / von Hippel 1988; Morrison et al. 2000). As a result:

Hypothesis 2: The greater the inclination of a dealer to adopt new products from industry, the higher the likelihood that the dealer generates reliable prototypes for innovations.

Generic competitive strategy

In most shopping-goods markets, different clusters of retailers exist that are characterized by specific competitive advantage. A simple categorisation of competitive strategies distinguishes two alternatives (Conant et al. 1993). Retail organizations can decide to base their strategy primarily on cost and price leadership. Carrying lower-priced products and striving to achieve cost levels below competition is often combined with a less-specialized product program suitable to address large consumer segments (mass-merchandisers). On the other side of the continuum, the second generic strategy puts emphasis on quality leadership often in combination with a narrow product focus to be able to attract customers on the basis of unique and specialized offerings (Darrow et al. 2001). To remain competitive, quality leading retailers have to develop distinctive marketing competencies that their price leading, broad-line competitors do not possess (Darrow et al. 2001). For instance, it seems reasonable, that quality leaders often strive to hire trade experienced salespeople with in-depth product knowledge in order to be able to offer a superior service to their customers (McGee / Peterson 2000). Similarly, Smart and Conant (1994) could show that independent quality leading stores seem to profit from a strong entrepreneurial orientation. A firm's entrepreneurial orientation includes such dimensions as propensity to take risks, level of innovation and ability to identify new opportunities – consequently characteristics that should foster the propensity of a retailer to develop new product solutions (Smart / Conant 1994). More recently, a study of drug stores revealed that small independent quality leaders often achieve higher performance due to their superior ability to put plans into action which, in turn, might also positively correlate with autonomous innovation activities (McGee / Peterson 2000). It is therefore proposed, that high-quality, specialized dealers, due to their distinctive competencies, will be more likely to develop new ideas for improvements of the products they sell. Thus:

Hypothesis 3: The more a dealer bases its competitive strategy on quality leadership in combination with a specialised product offering, the higher the likelihood that the dealer generates reliable prototypes for innovations.

3.2. Retailers as gatekeepers of customer innovations

A key finding of existing empirical studies on consumer innovations suggests, that users often design new product solutions and that these solutions do form the basis of many products later commercialized and sold to many users (Shah 2000; Franke / Shah 2002; Lüthje et al. 2002; Lüthje 2003a). The question arises, if retailers actually recognize this innovation potential of their customers. After all, this is a precondition to be able to take over the role of innovation mediator or innovation gatekeeper. Specifically, we strive to explore the antecedents that possibly influence appreciation of the consumer input in terms of frequency and quality. We propose again the retailers' competitive strategy, their speed of adoption, the level of their use experience and, in addition, own innovation efforts as antecedents of the perception of the user input frequency and potential.

Whether retailers perceive innovative user input to be a very common and valuable or a rather seldom and useless phenomenon may depend on two factors. Firstly, the alertness and openness towards innovation opportunities could influence the ability and willingness to recognize the suggestions of the users. It is a commonly held assumption in behavioral theories that the perception of what is going on and how it should be handled is largely the outcome of a set of givens that individuals bring in when perceiving and interpreting their environment (Cyert / March 1963; Hambrick / Mason 1984). These givens reflect the individuals' values and cognitive base. They restrict the areas to which attention is directed and determine the interpretation of the perceived phenomenon. For instance, we know from research on entrepreneurship that only people with a basic entrepreneurial intent are able to make out and to appreciate business opportunities, because they develop a specific alertness for those phenomena (Long / McMullan 1984; Singh et al. 1999). In the context of the present study, particularly the adoption behavior of the retailers and their inclination towards own innovation efforts may foster the alertness to recognize and to acknowledge the suggestions coming from their customers. This, in turn, should lead to the assessment of a higher frequency and higher potential of innovative consumer input. As already noted, the speed of adoption and own innovation efforts indicate high benefit expectations of the dealers with respect to new products (Urban / von Hippel 1988; von Hippel 1988). If in a given retail store, new market offers from industry are generally accepted rather early in the diffusion process, the employees might, in principle, be open to product improvements. According to the behavioral theory, this prompts them to direct their attention towards suggestions of their users and increase the readiness to acknowledge the potential of good ideas. Similarly, also salespeople who have developed own new product solutions should be better prepared to absorb the creative potential of their customers and to assign a high potential to these user initiatives.

Besides adoption behavior and own innovation activities, also a high amount of use experience is proposed to increase the ability and inclination of retail representatives to recognize the potential of innovation ideas of the end users. One could expect that experienced employees are open towards user input because they find it less difficult to grasp the key advantage behind the suggestions of their customers. The users' ideas are often rooted on tacit knowledge that only becomes apparent in a continuous and skillful use of the products (Polanyi 1983; von Hippel 1998). As organizational theorists state, individuals that have an overlap in their mental models, schemata, perspectives, and paradigms have the "absorptive capacity" to understand each other and to exchange tacit knowledge (Cohen / Levinthal 1990; Nonaka 1994). It can therefore be posited that it is easier to get a glimpse about the value of user

innovations if the innovating consumer and the salesperson have a common ground of experiences in product use. It is thus expected:

Hypothesis 4: The greater the inclination of a dealer to adopt new products from industry, the higher the dealer will assess the frequency and potential of innovative user input.

Hypothesis 5: The dealers that have developed own ideas for new products will assess a higher frequency and potential of innovative user input than the passive retailers.

Hypothesis 6: The more a given dealer employs salespeople with experience in product use, the higher the dealer will assess the frequency and potential of innovative user input.

The second factor impacting the retailers assessment of the frequency and potential of user ideas is the actual possibility of users to communicate their ideas to a given dealer. In this context, the generic strategy of the retailers is likely to play an important role. In quality-leading, specialized stores the service image is a key success factor. Members of this retailing type have to provide high-quality customer service and they have to handle customer requests and suggestions carefully (McGee / Peterson 2000). In sum, they are forced to be more pro-active in relationship marketing implementation than do mass-merchandisers, simply because this is an important element of their distinctive competitive competencies (Too et al. 2000). It is thus expected that the salespeople of this dealer type will provide possibilities for direct communication and therefore enable their customers to tell about their ideas and concepts regarding new products. In this situation, also the willingness of the consumers should be higher to transfer their promising ideas, other things being equal. A stronger emphasis on customer relations and service quality is positively related to trust in and commitment to the store and its employees (Beatty et al. 1996; Too et al. 2000). As a result of the discussion, the following hypothesis is advanced:

Hypothesis 7: The more a dealer bases it's competitive strategy on quality leadership in combination with a specialised product offering, the higher the dealer will assess the frequency and potential of innovative user input.

4. Research methodology

4.1. Sample and data collection

This study investigates the role of retail stores both, as generators of own innovations and as gatekeepers for user-developed inventions. The sports industry provided the setting for this study. Our reason for this choice was that, according to previous studies, users often improve the sports equipment they use (Shah 2000; Franke / Shah 2002). A minimum level of user innovations is a prerequisite for an active role of retailers as mediators of innovative user input.

The data for the main survey was collected from the target population of sports retailers in Vienna (Austria) encompassing stores in four different sport fields: outdoor (e.g. trekking, climbing, hunting), biking (street cycling, mountain biking), water-sport (e.g. sailing, surfing, scuba diving), and winter-sport (e.g. skiing, snowboarding). All the sport stores that were listed in Vienna were selected from the "Gelbe Seiten Buch Wien - Ausgabe 2001/01" (Yellow Pages). Also retailer directories published on the web-sides of sports equipment manufacturers were screened to make the sample more complete. In total, 151 sport shops were identified and contacted via telephone or personal visit. 106 store owners and managers agreed to participate in the study.

Research via personal interviews was used to collect the data from the respondents. The interviews were based on an interview guideline and a written questionnaire. The research instrument was pre-tested with three managers of sport shops.

4.2. Measurement

The questionnaire was developed based on existing literature and studies. To conceive the part of the questionnaire investigating the role of the retailers as innovators we used previous studies of consumer innovations that have been already cited above (Franke / Shah 2002; Lüthje et al. 2002; Lüthje 2003a). The survey questions addressed to investigate the retailers' role as innovation gatekeepers were based on the results of a preliminary study with 32 sport dealers in Germany. However, to our knowledge no standard scales exist to operationalize most of the factors included in the present model. Thus, we had to develop new items (see for the scales Appendix). It has therefore to be noted that in this sense the present study is rather exploratory in nature.

Internal consistency of the scales used to measure the model constructs was ascertained by both calculating Cronbach's coefficient α and conducting exploratory factor analysis. Items were deleted based on low item-to-whole correlation and low factor coefficients, if this proved to increase α or the percentage of explained variance by the factor. As table 1 shows, all constructs proved to be satisfactorily reliable.

As an exception, only the retailers' own innovation activities were measured by a single variable. The respondents had to indicate if they or their employees have ever developed a reliable prototype or marketable solution for a new piece of sports equipment.

Factor	Initial no. of items	Refined no. of items	Item-to-total correlation	Cronbach α	Explained variance by first factor
Use experience of employees	3	2	a b	0.620 0.620	0.754 81.0%
Retailer's adoption behavior	4	4	a b c d	0.462 0.496 0.470 0.422	0.678 51.2%
Retailer's generic competitive strategy	3	2	a b	0.738 0.738	0.834 86.9%
Generation of own innovation prototype	1	1	a	na	na
Frequency of user input	2	2	a b	0.554 0.554	0.712 77.7%
Potential of user input	3	3	a b v	0.724 0.652 0.680	0.819 74.8%

Table 1: Scale summary

5. Data analysis and results

This study investigates the role of retail stores both, as generators of own innovations and as gatekeepers for user-developed inventions. First, we present descriptive findings about the retailers' activities and perceptions. Then, the hypotheses presented above are tested.

5.1. Descriptive findings

5.1.1. Retailers as innovators

Retailers seem to play an important role as innovators of the sports products they sell. Over thirty seven percent of the 106 respondents state having developed one or more ideas for innovations. Of these, 6.6% report building a reliable prototype embodying their idea, and 20.8% of the inventing respondents indicate that their innovative idea has been transferred into a marketable product.

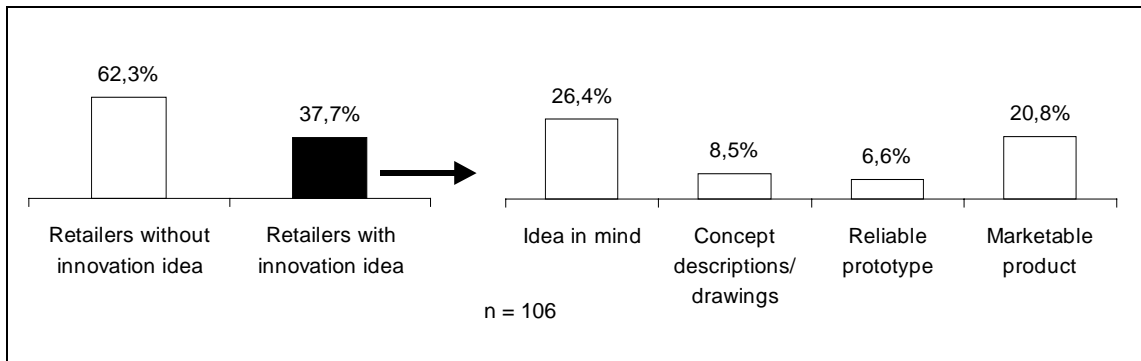


Figure 3: Innovation activities of the retailers

The frequency of user innovations in various industries is one issue, their technical and economic potential another (see table 2). Most ideas developed by dealers' representatives are rather minor improvements of existing products and often incorporate a low-tech solution. This is in alignment with existing results of empirical studies on end user innovations. Also consumers mainly develop inventions of low to moderate newness and technical complexity (Franke / Shah 2002; Lüthje et al. 2002; Lüthje 2003a). However, quite a few store managers assign a high market potential to their inventions, with 28.8% being expected to be adopted by many customers if introduced into the market. Similarly, a notable fraction of the innovations (48.6%) are currently or will be marketed in the foreseeable future, either by the retailer himself and/or by a manufacturer of sports equipment. Thus, one out of two ideas reaches the stage of commercialization.

n = 67	
How do you rate the <u>newness</u> of your invention? ^{a)}	mean: 2.2 20.9% high / very high newness (scale point 4 / 5)
How do you rate the <u>technical sophistication</u> of your invention? ^{b)}	mean: 2.3 19.4% high / very high sophistication (scale point 4 / 5)
How do you rate the <u>market potential</u> of your invention? ^{c)}	mean 2.7 28.8% high / very high market potential (scale point 4 / 5)
Do you or any manufacturer, currently or in the foreseeable future, <u>market</u> your invention?	40.8% yes 50.2% no

^{a)} 5-point-rating scale; 1=small modification of existing product; 5=totally new product

^{b)} 5-point-rating scale; 1=very low tech; 5=very high tech

^{c)} 5-point-rating scale; 1=very low market potential; 5=very high market potential

Table 2: Indicators for potential of retailers' innovations

Altogether, the findings clearly suggest that innovation efforts are disseminated through an important portion of the sample. Many of the ideas seem to be of potential value for end users if produced commercially.

More than half of the innovation projects are based on small teams of two or three persons (54.8%). Customers seem to be very seldom part of these teams. Only 15.6% of the responding shop managers fully or rather agree with the statement that the idea was developed in the context of an intensive cooperation with customers. In a similar vein, only few of the retailers' ideas are directly related to suggestions of their customers. One out of five respondents indicates that this was fully or rather the case. This already foreshadows the findings concerning the retailers' activities as mediator of user innovations which are presented in the next section.

5.1.2. Retailers as mediators of user innovations

The respondents strongly believe that the end users, if they want to communicate product-related complaints or suggestions for improvements, rather approach the retailers than the manufacturers – 81.1% of the store managers are of this opinion. In an open question the retail managers were asked to substantiate their posture. Most often, the respondents state that consumers see the store where they usually buy their equipment as their logical contact. The customers often have repeated interaction experience or have even built up a relationship with particular sales people, which, logically enough, ease the access for the end users. In contrast, the consumers find it difficult to contact the manufacturers, either because communication channels are lacking or due to spatial and cultural distance to the headquarters of a manufacturer. In sum, this finding underlines the important function that retailers, in principle, could play as mediators or gatekeepers of innovation-related customer input.

However, the respondents do not perceive their customers to be an important source for innovative ideas (see table 3). One out of ten respondents indicates that the salespeople in his/her store often or very often receive suggestions for minor product improvements. With respect to substantial ideas for new products, only 5.7% of the shop managers believe their customers to often or very often provide input of this type.

Frequency with which retailers perceive their customers to provide innovative input						Sum (n=105)
	Never	Seldom	Occasionally	Often	Very Often	
Suggestions for minor product improvements	29.5%	42.9%	16.2%	11.4%	0%	100%
Substantial ideas for new products	62.9%	26.7%	4.8%	3.8%	1.9%	100%

Table 3: Frequency of innovation-related input of the customers (from the retailers' perspective)

As for the frequency of user input, also the potential that the respondents attribute to the ideas communicated by the customers is rather low. Three out of four respondents (74.5%) state that they never or seldom get ideas from the customers with a high potential for commercialization. This impression of low frequency and quality of the innovation-related suggestions made by the customers, may signify that consumers, in fact, are not a valuable source for innovation ideas. In light of the increasing and consistent empirical evidence for a high level of innovation activities among users in different sports fields, however, this assumption seems to be unfounded (Franke / Shah 2002; Lüthje et al. 2002; Lüthje 2003a). Alternatively it can be argued, that the findings might be partly due to the fact that retailers tend to underestimate the creative potential of their customers. The low level of systematic marketing research as performed by the retailers provides at least preliminary support for this explanation (see

figure 5). More than two thirds of the shops in our sample do not at all or very seldom undertake specific and formal activities, like meetings with customers, customer surveys and idea competitions, to acquire information about their customers.

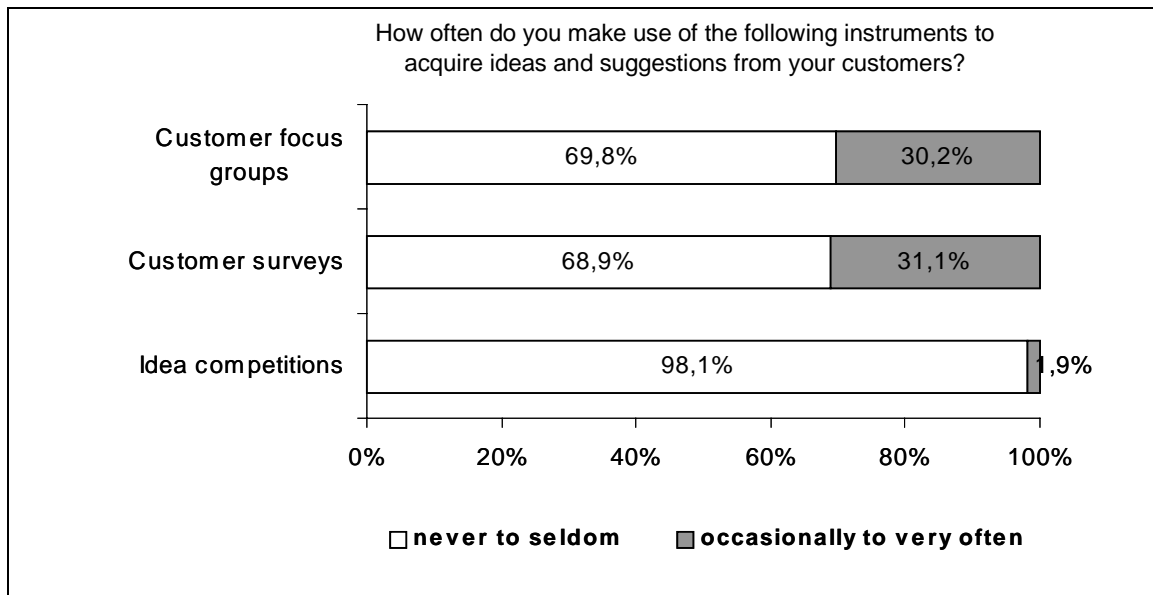


Figure 5: Use of marketing research tools to acquire innovation-related user input

5.2. Model testing

In this chapter it is explored if the proposed factors (see section 3.1.) can actually explain how active a given retailer is, both in designing own innovations and in recognizing the innovation ideas of consumers.

In order to test the hypotheses 1,2 and 3 a logit analysis was employed (Aldrich / Nelson 1984; Agresti / Finlay 1997). In the following analysis, the dichotomous prototype developing activity (developing vs. not developing a reliable prototype for improved or new equipment) serves as the dependent variable in the logit model. The value of this variable is to be predicted by the employees' use experience, the store managers adoption behavior and the retailers' generic competitive strategy (quality leadership / specialized offer versus price leadership / broad-line offer). Thus, these factors were integrated as independent variables. The findings are presented in table 4. All global fit measures indicate a good fit of the estimation model. The rate of correct classified respondents in both groups (active and passive retailers) is 77.2%. Also in the smaller group of innovating retailers this percentage is satisfactory (66.7%).

Independent variables	logit-coefficient	Standard error	Wald statistic
Use experience of employees ^a	0.716	0.280	6.53 **
Retailer's speed of adoption ^{b)}	0.994	0.286	12.09 ***
Retailer's generic competitive strategy ^{b)}	1.352	0.331	16.63 ***
Constant	1.024	0.306	11.12***

$n = 101$; * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$; Correct classified respondents = 77.2% (PCC=54.1%)

LR = 47.70; df=3; $p < 0.001$ McFaddens $R^2 = 0.36$

Note: In this survey a positive logit coefficient indicates that it is more likely that a retailer generates a prototype or marketable solutions for innovations if the corresponding factor takes high values (high level of use experience, strong inclination towards early new product adoption, quality leader with specialized product offer).

Table 4: logit model to determine the influence of antecedents on prototype developing by the retailers

As highlighted in table 4, the hypothesis 1 was supported ($\beta = .716, p < .05$). A high level of use experience among the employees of a given sports shop is related positively with the likelihood that this retailer starts to develop prototypes for improved or new products. This suggests that sales associates which are also users of the products may show a higher motivation to innovate because they expect to personally benefit, i.e. to practice their sporting activities faster, safer, more easily, with more fun etc. In addition, experienced product users might be able to innovate at comparatively low costs, since they can base their development upon local knowledge – use information already in their possession or generated by themselves. The high and significant logit coefficient for the factor “adoption behavior” supports hypothesis 2 ($\beta = .994, p < .01$). The findings suggest that retailers with a high innovativeness in terms of early acceptance of new industry products also tend to be innovators themselves, other things being equal. The results as shown in table 4 further demonstrate that retailers with a strategic focus on carrying fewer high-quality product-lines for small market segments are more likely to innovate, thus providing support for hypotheses 3 ($\beta = 1.352, p < .01$). This result confirms the assertion that the distinctive competencies that quality leaders develop to stay competitive, at the same time, foster the ability and motivation for initiating own innovation activities.

Straightforward linear regression analysis was used to test the hypotheses 4, 5, 6 and 7. Two regression equations were estimated, one with the perceived frequency and one with the perceived potential of the user ideas as the dependent variable. An assessment of potential violations of regression assumptions was also undertaken and no serious issues were uncovered. The results of this computation appear in table 5. Both models are significant and explain 23% / 25% of the overall variance of the dependent variables.

Model 1 tests the hypotheses that the four antecedents are related positively to the perceived frequency of innovation-related input of the consumers. Contrary to our expectation, the retailers’ competitive strategy is the only highly significant variable. In comparison, the effect of the adoption behavior is rather weak and only significant at the 10%-level. Own development efforts and the level of user experience among the store’s employees were not found to be linked with the perception of the frequency with which consumers communicate ideas for new sports equipment.

Antecedents of retailer innovations (independent variables)	Model 1 user input <u>frequency</u> as dependent variable	Model 2 user input <u>potential</u> as dependent variable
Use experience of employee	0.11	0.18 **
Retailer’s speed of adoption	0.02	0.24 **
Retailer’s generic competitive strategy	0.32 ***	0.09
Generation of own innovation prototype	0.21 *	0.26 **
n	99	94
Adjusted R ²	0.23	0.25
F-value	8.17 ***	8.63 ***

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Table 5: Results of regression analysis on perceived frequency and potential of innovations-related user input

In model 2 the same antecedents are regressed using the perceived potential of the customer ideas as the dependent variable. When compared to model 1, a different pattern emerges. If, in a given sports shop, the employees are also users of the products, if new products are usually integrated quickly into the sales program and if the employees have already developed own prototypes for innovations, the store managers are more likely to appreciate the value of customer suggestions and ideas. However, the generic competitive strategy seems not to be associated with the perception of user input quality.

Altogether, the hypotheses 4, 5, 6, and 7 were partly unsupported by the analysis. The competitive strategy (specialized, quality leader versus broad-line price leader) is the only factor that shows a highly significant relationship with the frequency of innovative consumer input as perceived by the respondents. The other three antecedents are not significant in model 1, but are significantly related to the perceived potential of the ideas for new products that are communicated by the customers (model 2). Although hypothesized differently, this tentative finding may be plausible by reviewing the discussion in section 3.2. There, we stated that two mechanisms are likely to be relevant to explaining the perception of the customer input from the retailers' perspective.

Firstly, it was assumed that the three factors "use experience", "speed of adoption" and "own innovation efforts" all indicate high expected benefit from innovations and by this increase the openness for innovation-related user input. If high benefit expectations prompted retail employees to actively search for creative stimuli from their customers this would imply that these retail representatives would recognize more consumer ideas. But this seems not to be the case. The descriptive findings indicated that most retail shops do not undertake specific marketing research efforts to obtain innovation ideas from their customers. This may signify that the transfer of ideas almost always requires the customers to take the initiative: The retail people get to know about innovation ideas because they are told about by their customers. In this situation, the mere mental registration of such a customer-initiated entry obviously is independent from benefit expectations. A salesperson should get aware about this input, even if he/she, in general, does not expect a high benefit from innovations. However, once sales associates have heard about the idea, the evaluation of the customer input is apparently positively associated with the benefit expectation, other things being equal. According to this discussion, it is not implausible that use experience, speed of adoption and own innovation efforts particularly influence the perceived potential but not the frequency of innovation-related customer input.

Secondly, the inverse argumentation holds true regarding the factor "generic competitive strategy". It was assumed that the retailers' perception of the customer input is also depending on whether the customers have the chance to directly communicate with salespeople about their ideas. In specialized, quality leading stores, there will be a stronger emphasis on customer relation and service quality. As stated above, this is a typical distinctive competency to compete against the "big box" competitors. In this retail type, consumers will find it more feasible to contact representatives of the store and to transfer their suggestions. This, in turn, is likely to imply, that these retailers perceive a higher frequency of user input, simply because, in fact, they get more information from their customers than do mass-merchandisers. It seems, though, that once they have registered the suggestions of their customers, the retail type has no impact on the evaluation of the ideas' potential.

6. Discussion and implications

This preliminary study has examined the role of retailers as innovators and innovation gatekeepers. The findings provide first insights with respect to the activities that sales associates undertake to design own solutions for new products. They have also shed light on the efforts of retail stores to systematically obtain innovative ideas from their customers.

With respect to the first role, the study reveals a high level of innovation in the sample of sports stores in Austria. The results clearly suggest that the development of own ideas, concepts and prototypes for new products is disseminated through an important portion of the retailers within the sport market. In addition, a notable fraction of the innovations are commercially exploited and are associated with a high market potential.

As managerial implication, we can argue that the involvement of retail representatives in the early stages of the product development process is a promising strategy for manufacturers with a current need for innovations. The existing focus of the research on the relationship between manufacturers and retailers is, however, too narrow. Relationship marketing should include efforts directed at capitalizing the creative potential of the retail employees. As such we suggest that future research should consider this important objective of the supplier-dealer dyad and should try to tackle questions like: Do retailers actually transfer their own and their customers' ideas to manufactures? Do manufactures value this type of innovation-related information? Which factors may facilitate or hamper an intensive exchange of innovation-related information between both parties? Based on these findings, researchers and practitioners could conceive measures in order to establish trust, commitment and, particularly, stable relationships that are centred on the generation of innovations.

Regarding the second role, i.e. the activities of retailers as mediators of user-initiated ideas, we find a rather low appreciation of consumers as a source of innovation. The respondents perceive that users do not often communicate substantial suggestions for new product development. As a consequence, retailers refrain from engaging in specific marketing research activities to obtain innovation-related input from their customers. It was already mentioned, that this result questions existing empirical studies on user innovations in the sports field which report high levels of innovation activities among the surveyed user samples. It is a limitation of this study, that we can not assess whether the retailers' perception is a valid reflection of the "true" consumers' creative potential. Similarly, it is not clear whether the decision to refrain from systematic marketing research is rather the cause or the consequence of the low recognition of the customers' creative potential. Future research should seek to simultaneously collect data from retail associates and their customers to better control for information bias and, by this, to enhance validity of the measurement.

Manufacturers willing to capitalize the innovative ideas of the end users, may react in two ways to the low activity level of retailers. The first way is fostering the marketing research activities to directly communicate and cooperate with consumers without using the retailer as mediator. In this context, an application of the Lead User method has proven to be a promising approach to generate ideas for breakthrough innovations (Lilien et al. 2001). More recently, it has been suggested to integrate customers as co-designers by offering them user-friendly design toolkits. Toolkits enable users to develop innovations for themselves via an iterative trial-and-error process. (von Hippel / Katz 2002). The toolkits translate specifications into the language of the customer into technical designs that can be realized and produced by the manufacturer.

The second strategy is to prompt retailers to intensify their activities as innovation gatekeepers and to act as innovation agents of the suppliers. After all, the findings of this study indicate that consumers often choose to share their ideas rather with the

product dealers, than with the product manufacturers. When conceiving measures, manufacturers have to take into account that the gathering of product ideas is not of primary interest for the retailers. When dealers engage in activities of relationship marketing, they mainly expect to establish stable relationships with their customers to maximize their own sales and profits. Even if they use consumers as “part-time employees” they mainly hope solving their own service problems instead of acquiring ideas for product innovations. Reward systems may be used as a tool to motivate retail managers to act in the manufacturers’ best interest. Measures taken by the manufacturers could also include active signalling that they are open for innovation-centred cooperation with retailers and that this cooperation is likely to pay for the participating dealers.

If manufacturers strive to involve retailers in new product development projects, they are well-advised to carefully select promising retail associates as cooperation partners. The model test presented in this study strongly suggests that this selection can be based on characteristics suitable to distinguish between innovation-active and innovation-passive retail stores. Considering the findings, information on the use experience of the employees, the speed of adoption with respect to new products from industry, the competitive strategy of the retailer and own innovation activities should enable manufacturers to efficiently search for retail representatives with high innovation potential. This procedure differs from the often observed tendency of suppliers to primarily interact with their biggest, large-scale dealers.

References

- Agresti, Alan / Finlay, Barbara (1997): *Statistical methods for the social sciences*, Upper Saddle River: Prentice Hall.
- Ahlert, Dieter / Hesse, Josef (2002): Relationship Management im Beziehungsnetz zwischen Hersteller, Handel und Verbraucher, in: Dieter Ahlert / Jörg Becker / Ralf Knackstedt / Maren Wunderlich (eds.): *Customer Relationship Management im Handel*, Berlin et al.: Springer, pp. 3-30.
- Aldrich, John H. / Nelson, Forrest D. (1984): *Linear probability, logit and probit models*, Beverly Hills: Sage.
- Anderson, Erin / Lodish, Leonard / Weitz, Barton (1987): Resource allocation behavior in conventional channels, *Journal of Marketing Research*, Vol. 24, February, pp. 85-97.
- Anderson, J. C. / Narus, J. A. (1984): A model of the distributor's perspective of distributor-manufacturer working relationships, *Journal of Marketing*, Vol. 48, No. 4, pp. 62-74.
- Anderson, James C. / Narus, James A. (1990): A model of distributor firm and manufacturing firm working partnerships, *Journal of Marketing*, Vol. 54, January, pp. 42-58.
- Beatty, Sharone E. / Mayer, Morris / Coleman, James E. / Reynolds, Kristy E. / Lee, Jungki (1996): Customer-sales associate retail relationships, *Journal of Retailing*, Vol. 72, No. 3, pp. 223-247.
- Bettencourt, L.A. (1997): Customer voluntary performance: Customers as partners in service delivery, *Journal of Retailing*, Vol. 73, No. 3, pp. 383-406.
- Biemans, Wim G. (1991): User and third-party involvement in developing medical equipment innovations, *Technovation*, Vol. 11, No. 3, pp. 163-182.
- Bowman, D. / Narayandas, D. (2001): Managing customer-initiated contacts with manufacturers: The impact on share of category requirements and word-of-mouth behavior, *Journal of Marketing Research*, Vol. 28, August, pp. 281-297.
- Bristol, Terry / Fern, Edward F. (1996): Exploring the atmosphere created by focus groups: Comparing consumers' feelings across qualitative techniques, *Journal of the Market Research Society*, Vol. 38, No. 2, pp. 185-195.
- Brown, J.R. / Lusch, R.F. / Muehling, D.D. (1983): Conflict and power dependence relations in retailer-supplier channels, *Journal of Retailing*, Vol. 59, Winter, pp. 53-81.
- Cohen, W. M. / Levinthal, D. A. (1990): Absorptive capacity: A new perspective on learning and innovation, *Administrative Science Quarterly*, Vol. 35, pp. 128-152.
- Conant, Jeffrey S. / Smart, Denise T. / Solano-Mendez, Roberto (1993): Generic retail types, distinctive marketing competencies, and competitive advantage, *Journal of Retailing*, Vol. 69, No. 3, pp. 254-277.
- Conlon, Donald E. / Murray, Noel M. (1996): Customer perceptions of corporate responses to product complaints: The role of explanations, *Academy of Management Journal*, Vol. 39, No. 4, pp. 1040-1056.
- Cyert, R. M. / March, J. G. (1963): *A behavioral theory of the firm*, Englewood Cliffs, NJ: Prentice-Hall.
- Dahan, Ely / Hauser, John R. (2002): The virtual customer, *Journal of Product Innovation Management*, Vol. 19, No. 5, pp. 332-353.

- Darrow, William P. / King, Algin B. / Helleloid, Duane (2001): David vs. Goliath in the hardware industry: Generic strategies and critical success factors as revealed by business practice, *The Mid-Atlantic Journal of Business*, Vol. 37, No. 2, pp. 97-109.
- Evans, Kenneth R. / Schlacter, John L. (1985): The role of sales managers and salespeople in a marketing information system, *Journal of Personal Selling & Sales Management*, Vol. 5, No. 2, pp. 49-58.
- Fornell, C. / Wernerfelt, B. (1987): Defensive marketing strategy by customer complaint management: A theoretical analysis, *Journal of Marketing Research*, Vol. 24, November, pp. 337-346.
- Franke, Nikolaus / Shah, Sonali (2002): How communities support innovative activities: An exploration of assistance and sharing among end-users, Sloan Working Paper 4164, Massachusetts Institute of Technology, Cambridge, MA.
- Franke, Nikolaus / von Hippel, Eric (2002): Satisfying Heterogeneous User Needs via Innovation Toolkits: The Case of Apache Security Software, Working Paper 4341-02, Massachusetts Institute of Technology, Sloan School of Management, Cambridge, MA.
- Gwinner, Kevin P. / Gremler, Dwayne D. / Bitner, Mary Jo (1998): Relational benefits in service industries: The customer's perspective, *Journal of the Academy of Marketing Science*, Vol. 26, Spring, pp. 101-114.
- Hambrick, Donald C. / Mason, Phyllis A. (1984): Upper echolons: The organization as a reflection of its top managers, *Academy of Management Review*, Vol. 9, No. 2, pp. 193-206.
- Harris, Kim / Baron, Steve / Ratcliffe, Julie (1995): Customers as oral participants in a service setting, *Journal of Service Marketing*, Vol. 9, No. 4, pp. 64-76.
- Hauser, John R. / Clausing, Don (1988): The house of quality, *Harvard Business Review*, Vol. 66, No. 3, pp. 63-73.
- Hoch, S. J. / Deighton, J. (1989): Managing what consumers learn from experience, *Journal of Marketing*, Vol. 53, pp. 1-20.
- Hunt, K. A. (1995): The relationship between channel conflict and information processing, *Journal of Retailing*, Vol. 71, No. 4, pp. 417-436.
- Keh, Hean Tat / Chi, Wei Teo (2001): Retail customers as partial employees in service provision: A conceptual framework, *International Journal of Retail & Distribution Management*, Vol. 29, No. 8, pp. 370-378.
- Kelley, S. W. / Donnelly Jr., J. H. / Skinner, S. J. (1990): Customer participation in service production and delivery, *Journal of Retailing*, Vol. 66, No. 3, pp. 315-335.
- Klopemaker, Jay E. (1981): Incorporating information from salespeople into the marketing planning process, *Journal of Personal Selling & Sales Management*, Vol. 1, Fall/Winter, pp. 76-82.
- Lambert, Douglas M. / Marmorstein, Howard / Sharma, Arun (1990): Industrial salespeople as a source of market information, *Industrial Marketing Management*, Vol. 19, pp. 141-148.
- Lilien, Gary L. / Morrison, Pamela D. / Searls, Kathleen / Sonnack, Mary / von Hippel, Eric (2001): Performance assessment of the lead user idea generation process, *Management Science*, Vol. 48, No. 8, pp. 1042-1059.
- Long, W. / McMullan, W. E. (1984): Mapping the new venture opportunity identification process, Long, W. / McMullan, W. E. (eds.), *Frontiers of Entrepreneurship Research*,

Vol. 4, Babson College/Kauffman entrepreneurship research conference, Center for Entrepreneurial Studies, Babson College, Wellesley, pp. 567-590.

Lüthje, Christian (2000): Kundenorientierung im Innovationsprozeß: Eine Untersuchung der Kunden-Hersteller-Interaktion auf Konsumgütermärkten, Wiesbaden: DUV.

Lüthje, Christian (2003a): Characteristics of innovating users in a consumer goods field: An empirical study of sport-related product consumers, Technovation, forthcoming.

Lüthje, Christian (2003b): Customers as co-inventors: An empirical analysis of the antecedents of customer-driven innovations in the field of medical equipment, Proceedings of the 32nd EMAC Conference, Glasgow, UK.

Lüthje, Christian / Herstatt, Cornelius / von Hippel, Eric (2002): The dominant role of "local" information in user innovation: The case of mountain biking, Working Paper No. 4377-02, Massachusetts Institute of Technology, Cambridge, MA.

McGee, Jeffrey E. / Peterson, Mark (2000): Toward the development of measures of distinctive competencies among small independent retailers, Journal of Small Business Management, Vol. 38, No. 2, pp. 19-33.

Mills, P. K. / Chase, R. B. / Marguiles, N. (1983): Motivating the client/employee system as a service production strategy, Academy of Management Review, Vol. 8, No. 2, pp. 301-310.

Mohr, Jakki J. / Fisher, Robert J. / Nevin, John R. (1999): Communicating for better channel relationships, Marketing Management, Summer, pp. 39-45.

Mohr, Jakki / Nevin, John R. (1990): Communication strategies in marketing channels: A theoretical perspective, Journal of Marketing, Vol. 54, October, pp. 36-51.

Morrison, Pamela D. / Roberts, John H. / von Hippel, Eric (2000): Determinants of innovation and innovation sharing in local markets, Management Science, Vol. 46, No. 12, pp. 1513-1527.

Nonaka, I. (1994): A dynamic theory of organizational knowledge creation, Organization Science, Vol. 5, No. 1, pp. 14-37.

Plymire, Jerry (1991): Complaints as opportunities, Journal of Service Marketing, Vol. 5, No. 1, pp. 61-65.

Polanyi, Michael (1983): The tacit dimension, Gloucester, MA: Smith.

Raabe, Thorsten (1993): Konsumentenbeteiligung an der Produktinnovation, Frankfurt a. M.: Campus Verlag.

Reynolds, Kristy E. / Beatty, Sharon E. (1999): Customer benefits and company consequences of customer-salesperson relationships in retailing, Journal of Retailing, Vol. 75, No. 1, pp. 11-32.

Robertson, Thomas S. (1971): Innovative behavior and communication, Pennsylvania: Holt, Rinehart & Winston.

Rogers, Everett M. (1995): Diffusion of innovations, New York: The Free Press.

Schneider, Benjamin / Bowen, David E. (1995): Winning the service game, Boston, MA: Harvard Business School Press.

Shah, Sonali (2000): Sources and patterns of innovation in a consumer products field: Innovations in sporting equipment, WP-4105 Sloan School of Management, Massachusetts Institute of Technology, Cambridge, MA.

Shaw, Brian (1985): The role of the interaction between the user and the manufacturer in medical equipment innovation, *R&D Management*, Vol. 15, No. 4, pp. 283-292.

Sheth, Jagdish N. (1994): Perceived risk and diffusion of innovations, in: T. Tomczak / Chr. Belz (eds.): *Kundennähe realisieren*, St. Gallen: Verlag Thexis, pp. 173-188.

Singh, Robert P. / Hills, Gerald E. / Lumpkin, G. T. (1999): New venture ideas and entrepreneurial opportunities: Understanding the process of opportunity recognition, Singh, Robert P. / Hills, Gerald E. / Lumpkin, G. T. (eds.), *Frontiers of Entrepreneurship Research*, Vol. 19, Babson College/Kauffman entrepreneurship research conference, Center for Entrepreneurial Studies, Babson College, Wellesley.

Skinner, S. J. / Gassenheimer, J. B. / Kelley, S. W. (1992): Cooperation in supplier-dealer relations, *Journal of Retailing*, Vol. 68, No. 2, pp. 174-193.

Smart, Denise T. / Conant, Jeffrey S. (1994): Entrepreneurial orientation, distinctive marketing competencies and organizational performance, *Journal of Applied Business Research*, Vol. 10, No. 3, pp. 28-39.

Steenkamp, Jan-Benedict / ter Hofsted, Frenkel / Wedel, Michel (1999): A cross-national investigation into the individual and national cultural antecedents of consumer innovativeness, *Journal of Marketing*, Vol. 63, No. 2, pp. 55-69.

Too, Leanne / Souchon, Anne / Thirkell, Peter (2000): Relationship marketing & customer loyalty in a retail setting: A dyadic exploration, Working Paper RP0015, Aston Business School, Birmingham.

Urban, Glen L. / von Hippel, Eric (1988): Lead user analyses for the development of new industrial products, *Management Science*, Vol. 34, No. 5, pp. 569-582.

von Hippel, Eric (1977): The dominant role of the user's in semiconductor and electronic subassembly process innovation, *IEEE Transactions on Engineering Management*, Vol. 24, No. 2, pp. 60-71.

von Hippel, Eric (1988): *The sources of innovation*, New York: Oxford University Press.

von Hippel, Eric (1998): Economics of product development by users: The impact of "sticky" local information, *Management Science*, Vol. 44, No. 5, pp. 629-644.

von Hippel, Eric / Katz, Ralph (2002): Shifting innovation to users via toolkits, *Management Science*, Vol. 48, No. 7, pp. 821-833.

von Hippel, Eric / Thomke, Stefan / Sonnack, Mary (1999): Creating breakthroughs at 3M, *Harvard Business Review*, No. 5, pp. 3-9.

Weisberg, Robert W. (1999): Creativity and knowledge: A challenge to theories, in: Robert J. Sternberg (eds.): *Handbook of creativity*, Cambridge: Cambridge University Press, pp. 226-250.

Wolstenholme, S. M. (1988): The consultant customer: A new use for the customer service operations, Wolstenholme, S. M. (eds.), *The management of service operations*, Proceedings of the Operations Management Association, Bedford, pp. 195-203.

Appendix 1: Items in the model

Construct	Formulation of items
Use experience of employees	5 point rating scale (1= not at all true; 5= very true) <i>Please indicate to what extent you agree with the following statement: "The employees in my store are active in sports and use the products intensively."; "It is an imperative requisite for hiring a candidate that he/she is active in sports."</i>
Retailer's adoption behavior	5 point rating scale (1= not at all true; 5= very true) <i>Please specify your adoption behavior with respect to new products: "I integrate new products immediately into my assortment."; "I rather stick to the established and reliable products than to adopt new products (reverse scale)."; "I order new products only after I get requests from my customers and after preliminary market experience exist (reverse scale)."</i> "I am usually better informed about new products than other dealers."
Retailer's generic competitive strategy	<i>Are you a dealer with a small assortment of products for a narrow market segment or rather a broad-line dealer for a large customer segment?</i> 5 point rating scale (1= large segment/large assortment; 5=narrow segment/small assortment;) <i>Are you a quality leader (high-priced, high-quality products) or rather a price leader (low-priced products, satisfactory product quality)?</i> 5 point rating scale (1=price leader; 5= quality leader)
Generation of own innovation prototype	dichotomous scale (yes / no) Have you or the employees in your store ever had an idea for new or improved sports products?
Frequency of user input	(1= never; 5= very often) <i>How often do you get the following innovation-related input from customers in your store? "Suggestions for improving existing products", "Substantial ideas for developing totally new products"</i>
Potential of user input	(1= never; 5= very often) <i>Please rate the suggestions and ideas from your customers.: "Are the ideas new and innovative?"; "Are the ideas sophisticated with respect to the incorporated technology?"; "Do the ideas have a high market potential if commercialized?"</i>

Appendix 2: Bivariate Correlations for Study Variables

Variables	1	2	3	4
Use experience of employees				
Retailer's adoption behavior	.07			
Retailer's generic competitive strategy	.11	.12		
Frequency of user input	.20**	.14	.46***	
Potential of user input	.22**	.37***	.29***	.30***

* $p < .10$; ** $p < .05$; *** $p < .01$,