Analysis of Electronic Commerce Adopter Categories in Retailing: The Case of Automobile Dealerships

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Analysis of Electronic Commerce Adopter Categories in Retailing: The Case of Automobile Dealerships

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On the basis of a qualitative analysis of semistructured interviews of 7 automobile dealerships in Oulu, Finland, we uncovered 4 themes: strategic understanding of electronic commerce (eCommerce), technological understanding of eCommerce, maturity of the Web site supporting eCommerce, and eCommerce developmental strategy. These themes allowed us to make sense in a succinct way of the similarities and differences among these automobile dealerships. Ranking the 7 dealerships on these 4 themes (dimensions) yielded consistent patterns and led us to identify adopter categories of eCommerce. We suggest 3 major adopter categories: procrastinators, followers, and visionaries. Followers are further divided into opportunists, waverers, and striders. Analysis of the histories of Web sites also showed that the existence of a Web site as such and its operational use are not sufficient to trigger effective learning about eCommerce. We suggest that learning at the levels of strategic understanding and technological understanding of eCommerce is a joint outcome of eCommerce developmental strategy and the Web site maturity rather than either of them separately. The interviews also showed that the dealers with higher strategic and technological understanding had a more active eCommerce developmental strategy and more mature Web sites. This finding led us to conjecture that the developmental strategy and the Web site maturity are influenced by both strategic understanding and technological understanding.

electronic commerce, retailing, automotive industry, dealerships, adoption, Finland

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1. INTRODUCTION

Electronic commerce (eCommerce) is strategically significant for many businesses [1]. It has been predicted that eCommerce will radically influence the value chain and business processes of industries and may lead to disintermediation and reintermediation [2–5]. However, much of the discussion on intermediation, disintermediation, and reintermediation has been speculative [6]. Because of the newness of eCommerce, little definitive empirical evidence exists about its potential effects on industry structures. However, it can be claimed that the popular and academic presses have given disproportionate attention to eCommerce as a technology for creating new businesses. Perhaps, as a result of the demise of many dot.com companies, attention is shifting to eCommerce applications in existing businesses. For example, in a New York Times article [7], the author described the failure of several well-known eCommerce start-ups and emphasized that the organizations most likely to use eCommerce successfully were firms that existed before the advent of eCommerce.

If the assertion in the New York Times [7] is correct, it is important to study what existing companies do when they introduce eCommerce. In particular, the position of retailers in the supply chain is at stake because they may be subject to disintermediation [8]. Naturally, any likelihood of disintermediation creates much uncertainty among retailers. Also, businesses that will not be eliminated from an altered supply chain must evaluate the potential benefits, costs, and risks of eCommerce participation because maintaining the status quo is an unlikely option. Hence, the focus of this article is on the adoption of eCommerce as a strategic innovation in retailing, and particular emphasis is placed on the factors that enable such adoption.

For reasons to be explained in Section 2, we selected the automotive industry and in particular the adoption of eCommerce by auto dealerships as an empirical field of study. We expected that decisions about adoption or rejection of eCommerce in auto dealerships to be of strategic importance to the adopting units. Moreover, we anticipated that auto dealers would experience considerable risk and uncertainty related to the industry’s potential structures arising from eCommerce.

A few theoretical frameworks might inform the adoption–rejection decisions related to eCommerce. The technology acceptance model (TAM) [9, 10] and diffusion of innovation (DOI) theory [11] are the most notable candidates. The TAM focuses on the adoption of information technology (IT) innovations by individuals. Therefore, we did not consider the TAM appropriate in our case, in which the adopting units are organizations. DOI theory has been widely applied to understand the adoption, implementation, and diffusion of IT innovations [12]. However, studies of IT innovations have triggered considerable criticism of DOI theory. Attewell [13], Fichman [14], and Nambisan and Wang [15] demonstrated the complexity of many IT innovations and the technical know-how necessary for their successful adoption, which are poorly addressed by DOI theory.

We also claim that eCommerce exhibits characteristics that affect its adoption but that have not been addressed in the DOI literature. First, we argue that, as with many IT innovations, eCommerce is highly evolving. The underlying technology is under continuous development, and its social construction and
the technology tend to have high degrees of interpretive flexibility [16]. Consequently, adopting eCommerce is not a single yes or no decision—whether to employ or not to employ the innovation [17]. Instead, the adoption of eCommerce can be conceptualized as a continuous stream of decisions and living with an evolving innovation. Second, auto dealers do not make adopting eCommerce decisions in a vacuum. Dealer decisions are strongly affected by eCommerce adoption by car manufacturers, suppliers, customers, business partners, and competitors. DOI theory addresses these interdependencies poorly.

Rejecting DOI theory as a frame of reference is also epistemological and methodological. Iivari [18] pointed out that DOI theory focuses mainly on macro-analysis of the DOI in large populations of potential adopters rather than on the microanalysis of innovation adoption by a single adoption unit.\(^1\) The assumption of macrostudies has been that the adopting units are basically similar to one another rather than unique cases.

Because of the strategic importance of eCommerce, its evolving nature, its social construction, and the uncertainties and risks involved, we did not consider forcing the cases a priori into a given theoretical framework to be appropriate. Instead, we considered a more appropriate approach to involve starting with a number of in-depth analyses of comparable retail organizations that we assessed to be at different stages in the eCommerce adoption process (on the basis of analysis of their Web sites). We then generalized from the cases to infer adopter categories and to develop a conceptual model consisting of factors that affect eCommerce adoption. We conducted semistructured interviews that explored the history and implementation of eCommerce in the respective organizations, the strategies of eCommerce development, the expectations concerning its impact, the perceived changes in business, the business models and organization, the perceived success and critical success factors of eCommerce, and the future plans for its development. We expected this detailed exploration to allow us to respect the richness and uniqueness of cases. Recognizing the potential strategic significance of eCommerce, we conducted the interviews with members of top management of the retailer companies.

The remainder of this article consists of five sections. In Section 2, we discuss our research methodology in more detail. In Section 3, we analyze our research findings and suggest a number of adopter categories. In Section 4, we introduce a model of eCommerce adoption as a learning process. In Section 5, we discuss the implications of the research, and in Section 6, we present our conclusions.

2. RESEARCH METHOD AND CASE DESCRIPTIONS

Wanting to understand the adoption or rejection of eCommerce as an innovation in retailing that is of strategic importance to the adopting unit, and expecting that

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\(^1\)This distinction is close but not identical to Attewell’s [13] distinction between “macro-diffusion studies” and “adopter studies.” However, because Attewell assumed that adopter studies focus on early adopters rather than on late adopters, he considered diffusion in a large population of adopting units.
the adoption—rejection decision involves much risk and uncertainty, we selected automotive dealerships for our empirical study. The empirical study was conducted in Finland, which is in many respects an ideal place for a study of this kind. Finland is one of the world’s most networked countries. More than 50% of Finns have mobile phones, a larger percentage than anywhere else in the world. In addition, per capita Internet hosts and Internet traffic volume are the world’s highest. Furthermore, 10% of Finns use the Internet regularly for bill paying and to purchase other services [19]. The general level of education in Finland is high. Thus, salespersons in car dealerships typically have a business or technical college degree, and the computerization in car dealerships is relatively advanced. For example, salespersons typically prepare all documents related to sales on their computers. This high level of computer literacy makes the operational adoption of eCommerce easier. In short, these characteristics make Finland an ideal “laboratory” for studying alternative approaches to eCommerce.

2.1 eCommerce as a Strategic Innovation in the Automotive Industry

We decided to select the automotive industry, and especially dealerships, as the specific focus of our study for several reasons. First, the automotive industry is expected to be significantly influenced by eCommerce. Many authors predict that eCommerce will restructure its business models [3, 20]. Widely known examples of electronic marketplaces for car sales already exist [21]. These examples indicate that eCommerce is a realistic option that is expected to make auto manufacturers, importers, and retailers conscious of the potential changes. Second, the automotive industry is an industry in which delivery of the physical product is an essential part of the process. This necessity means that the market transaction cannot be conducted entirely electronically and that the industry must develop a symbiotic relationship between the electronically mediated market transactions and physical logistics. Because of these factors, eCommerce is a serious strategic challenge for auto dealers. We can also assume that there is much uncertainty among retailers about the future of the industry, its supply chain, and their position in the chain.

The potential use of the Internet for the automotive industry has received worldwide attention. In one Nua Internet Surveys report [22], the author mentioned that more than 80% of U.S. new-car dealers have interactive Web sites that enable customers to obtain the information necessary to make a purchase decision or to perform the entire car purchase online. The author also stated that more than 40% of customers researched their car-purchase decision online. However, only 5% of the customers purchasing a new car did so entirely online. Shetty [23] reported equally consistent figures, according to which 57% of consumers who bought new cars in the preceding 12 months conducted research online, but only 18% visited a car-buying Web-site and only 3% bought online. In a different Nua Internet Surveys report [24], the authors stated that U.K. consumers feel comfortable making purchasing decisions online, but they still prefer a test drive and to buy their car offline.

Even though customer action concerning the online purchase of automobiles is mixed, it is evident that Internet-based eCommerce will greatly affect the
automotive industry’s value chain [3, 20, 25]. Selz and Klein [21] predicted that emerging global markets made possible by new electronic media such as the Internet will cause much upheaval in existing automobile markets. These authors investigated in particular how the automotive industry might react to the Internet-enabled arrival of new intermediaries. However, much uncertainty exists concerning the size and direction of these changes. As is often the case in the face of great uncertainty, the temptation is to “wait it out.” On the basis of a field study in Australia, Marshall et al. [25] concluded that automobile dealers have done just that. That is to say, they have refrained from taking action. At the dealer level of the value chain, an individual does not know if the Internet’s potential presents an opportunity or a threat, whether the dealer will be disintermediated or remain part of the value chain in a new capacity [21].

Finland has several special features that affect the potential adoption and strategic significance of eCommerce. The country has a population of only 5 million citizens and is one of the largest in Europe by area. Consequently, distances between population centers, especially in northern parts of Finland, where this study was conducted, are far. Competition among dealerships is intense. The Oulu area has a population of approximately 200,000 people who are served by 11 major car dealerships. Because of the low population density, many dealers operate multiple places of business that are located across a wide geographic area. IT is increasingly used to manage these geographically distributed business sites. Dealers are typically independent firms run by local owners. Many dealers represent multiple manufacturers who do not necessarily belong to the same alliance of manufacturers. Initial conversations with car dealers revealed that automobile manufacturers are close-mouthed concerning their contemplated Internet strategies. As a result, dealers are in a state of great uncertainty concerning their future role: whether they will play any role or be disintermediated. In short, our research centered on car dealers, how they perceive their competitive position, and how they plan to capitalize on the opportunities or to counter the threats posed by eCommerce.

2.2 Case Study as a Research Method and Data Collection

The purpose of our research project was to understand how retail companies respond to the opportunities and challenges of eCommerce. In keeping with this purpose, we focused on how the top management of seven automobile dealerships conceptualized, understood, experienced, and reacted to eCommerce. The seven dealerships were chosen to include companies that were fairly advanced in their eCommerce adoption as well as companies that had only recently embarked on using, or had not yet embraced, eCommerce. Patton [26] referred to this procedure as “purposive maximum variation sampling.” Furthermore, instead of relying on a priori theory, we believed that the correct or, perhaps, only way to achieve our goal was to use a qualitative case study approach [26].

Stake [27] differentiated between intrinsic and instrumental case studies. In an intrinsic case study, we want to learn something about a particular case. An intrinsic case study is not undertaken because it is representative of other cases or because it illustrates a particular trait or problem; rather, it is undertaken because
the case itself is of interest [27]. In an instrumental case study, we aim to learn something beyond the case [27]. That is to say, we aim to understand issues surrounding eCommerce adoption in the retailing industry and to create or sharpen a theory by using cases that originated from the automobile industry. Finally, subject to certain limitations, generalizing results arising from instrumental case studies is possible [27]. We applied a multiple case study design as a way to examine eCommerce adoption among car dealerships [28]. As mentioned previously, the selection of cases followed purposeful maximum variation sampling [26]. The cases were chosen to represent dealerships that were fairly advanced in their eCommerce adoption as well as dealerships that had just begun to adopt or had not yet adopted eCommerce.

Because we were associated with the University of Oulu, and to keep the project’s length and cost within reasonable limits, we selected auto dealers with headquarters in Oulu, Finland. As argued previously, Finland is an ideal laboratory for experimenting with alternative approaches to eCommerce. This point is supported by the fact that a major U.S.-based automobile manufacturer is currently experimenting in Finland with two alternative eCommerce business models. Moreover, the Finnish population is highly educated, prosperous [19], and homogeneous. Thus, we controlled these factors.

To ensure that our results would reflect alternative responses to the opportunities and the threats of eCommerce, we first telephoned the chief executive officers (CEOs) of the dealerships with and without Web sites. Next, we checked whether the dealers would agree to be interviewed. The results of our telephone conversations were positive because none of the contacted dealers declined to participate in our study. Our approach yielded a sample of 7 of the 11 major automobile dealers operating in Oulu. Our goal was to select both adopters and nonadopters. In this sense, the selection of the cases followed theoretical sampling [28]. Five of the 7 dealers had adopted eCommerce to varying degrees of sophistication. Two dealers were nonadopters of eCommerce. However, one of the nonadopters became an adopter of eCommerce between our first contact and the subsequent interview.

To enable interviewees to tell their own story, we conducted semistructured interviews. We did not use a questionnaire as such, but we instead relied on an interview guideline (see Appendix). We had separate guidelines for adopters and nonadopters. The issues identified in the interview guideline for adopters concerned the history and implementation of eCommerce in the respective organizations; strategies for its development; expectations concerning its impact; perceived changes in the business, business models, and organization; perceived success and critical success factors; and future plans. The interview guideline for nonadopters asked, after briefly introducing eCommerce, whether the respondent had considered owning a Web site, reasons for nonadoption, his or her views of the business implications of eCommerce, his or her knowledge of underlying technologies, and his or her understanding of required investments and future plans.

Our aim was to uncover how members of top management experienced and appraised their situation and the extent to which they acted according to their appraisal. In keeping with this aim, we took several steps: We tried to avoid distracting situations under which dealers normally operate. Several days before our
interview visits, we sent dealers a copy of our semistructured interview guidelines. Doing this enabled dealers to reflect on their situation and formulate their opinions. Having the questions before the interview also prevented our embarrassing individuals by asking questions that they would otherwise have been unprepared to answer. Furthermore, at the start of each interview, we attempted to put individuals at ease with small talk. Finally, we let individuals tell their story with minimal interruption.

Because understanding the human situation and action was key to our project, an interview-based research method suited our purpose best [29–31]. We conducted 1-h-long, on-site, open-ended, semistructured interviews with company CEOs. The interviews were audiotaped and then transcribed. Some interviews were conducted in English and others in Finnish, depending on dealer preference.

### 2.3 Interpretation of Interview Data

Klein and Myers [29] pointed out that a case study can be positivistic, interpretive, or critical. They characterized research as **positivistic** when there is evidence of formal propositions, quantifiable variables, hypothesis testing, and inferences drawn about a phenomenon from a representative sample of a stated population. Research is **critical** if the main task is social critique, and it is **interpretive** if knowledge about reality is assumed to be gained through constructions such as language, consciousness, shared meanings, documents, tools, and artifacts [29]. According to these characterizations, our study was closest to interpretive, even though it resulted in outcomes that may be subjected to a more positivistic testing. Our interest in the interviews centered on how top management of the selected dealerships appraised the opportunities and challenges of eCommerce, how they saw its business meaning and implications, and the plans they had for its development. The object of study, eCommerce, was a socially constructed artifact, and top management’s appraisal of it is essentially about consciousness, meanings, and action. Also, our interpretations of the cases were based exclusively on language: tape-recorded interviews, Web pages of the participant dealerships, and some other company materials.

As mentioned previously, our practice was to let CEOs tell their own stories. However, our printed interview guidelines ensured that the topics we deemed essential would be raised during the interviews. On returning to the office, we discussed first impressions of the interview based on memory and notes taken during the interview. After discussing the third interview (Company G, see Section 2.4), we noticed that this interviewee’s responses differed radically from those of the two previous interviews (Companies C and D). This finding sensitized us to the need for comparing and contrasting the dealerships and led us to focus on differences and similarities among dealerships.

To clarify the interpretation process, let us consider the seven principles of interpretive field research suggested by Klein and Myers [29]. The first principle, the principle of the hermeneutic circle, suggests that all human understanding is achieved by distinguishing between the meaning of parts and the meaning of the whole that they form [29]. We applied this principle most explicitly when we were
contrasting and comparing the seven dealerships. First, we read all seven interviews to form an overall impression. Next, we read each transcribed interview in detail, looking for themes that constituted similarities or differences among the dealerships. This interpretation was a continuous process of keeping an eye on the whole (all seven interviews) while focusing on the parts (each interview).

The second principle, the principle of contextualization, requires critical reflection on the social and historical background of the research setting so that the intended audience can see how the current situation under investigation emerged [29]. Our interviews normally started with a lengthy discussion of company history, including changes in ownership, the interviewee’s background, and his or her career with the company. In general, this helped us to understand the dealerships but, with one exception, this contextual background information did not have a direct connection to the adoption of eCommerce (see Section 3.4). For this reason and partly to maintain the anonymity of companies, we do not describe this contextual background information systematically in this article.

The third principle, the principle of interaction between the researchers and the participants, requires critical reflection on how the research materials (i.e., data) were socially constructed through interaction between researchers and participants [29]. As mentioned previously, the interviews were semistructured, with the interviewers directing the interview to varying degrees. In some cases, most notably in the case of Company G, the interviewee determined the flow of the interview. The interview guideline merely ensured that all topics were discussed. In some cases, the interview proceeded more according to the guideline but never followed it slavishly. As a result, we are convinced that the interviewees were able to tell their own stories without undue influence by the researchers.

The fourth principle, the principle of abstraction and generalization, involves relating idiographic details to theoretical, general concepts as a way to describe the nature of human understanding and social action [29]. Klein and Myers [29] argued that connecting individual details to theoretical abstractions and generalizations differentiates an interpretive case study from a simple anecdote. Walsham [32] mentioned four types of generalizations that can arise from interpretive case studies: developing concepts, generating a theory, drawing out specific implications, and creating rich insight. Our study achieved generalizations of the first two types. The adopter categories of Section 3 exemplify new concepts, whereas the conceptual model in Section 4 represents generating a theory.

The fifth principle, the principle of dialogic reasoning, requires sensitivity to possible contradictions between the theoretical preconceptions guiding the research design, and the actual findings with each subsequent cycle of revision [29]. The most explicit example of the application of this principle concerns the possibility of disintermediation. On the basis of extant literature on eCommerce in the automobile industry [21], we initially anticipated disintermediation to be a major concern of car dealers. However, the interviews revealed that even though dealers were uncertain about possible disintermediation, they did not perceive it as an immediate threat. This finding in part redirected the focus of research onto the resources that car dealerships have to help them survive the possible eCommerce revolution.
The sixth principle, the principle of multiple interpretations, requires sensitivity to possible interpretations among the participants as typically expressed by multiple narratives or stories about the same sequence of events [29]. Because we targeted members of top management (CEOs) of relatively small companies, we did not have multiple independent informants; therefore, we did not apply this principle.

The seventh and final principle, the principle of suspicion, requires sensitivity to possible biases and systematic distortions in the narratives collected from the participants [29]. We applied this principle only at the level of assessing whether the respondents were sincere in their responses. Our impression was that the interviewees described very honestly their views of eCommerce in their business. This impression may be explained by the Finnish practice of giving a direct answer to a direct question. We also sensed that the interviewees did not perceive of eCommerce as a confidential business topic. In only one case was the respondent unwilling to describe the content of a contract related to eCommerce.

2.4 Description of the Cases

We interviewed the CEOs of six dealerships and the liaison manager of a seventh dealership, at the suggestion of its CEO. In one interview, the manager of the Oulu site accompanied the CEO. Table 1 shows several dealership characteristics: company background, Web site presence, Web site initiator, technology base, and eCommerce comments. Annual turnover in terms of the monetary value and number of new and used cars sold annually varies considerably among the seven dealerships.

Table 1 shows that all the dealerships except one (A) had their own Web sites. The Web sites were subjected to an extensive walk-through analysis. Average Web site implementation costs are distorted by one dealership (B) whose site was built by two local students at zero cost. In all other instances, the CEO initiated the Web site's development.

Even though all dealerships used information systems, they varied with respect to their technological maturity. In all companies, salespersons, not secretaries, prepared sales documents by using computers. As Table 1 shows, most of the dealerships were geographically distributed, having a presence in several cities. Three of these dealerships (E, F, and G) had networked the geographically distributed sites with fixed lines.

With respect to the future role of the Internet in automobile distribution, the opinions of the dealerships varied widely. Although the managers of all seven dealerships agreed that the Internet would affect the automobile industry considerably, they differed with respect to timing. Several managers predicted that the Internet will eventually become an important distribution channel, but they saw no immediate need to plan for it. Other dealers believed that the Internet was already important, but only as a marketing channel. Finally, one dealer insisted that actions of the national sales offices of the large automobile manufacturers would determine whether the Internet would be an opportunity or a threat for individual dealers.
## Table 1
**Case Summaries**

<table>
<thead>
<tr>
<th>Company</th>
<th>Company Background</th>
<th>Web Site Presence</th>
<th>Web Site Initiator</th>
<th>Technology Base</th>
<th>Remarks Concerning eCommerce</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Revenue: &lt;Euro 10 (million)</td>
<td>No Web site</td>
<td>Not applicable</td>
<td>All salespersons use computers daily for preparing sales and insurance documents. Internet connection.</td>
<td>No specific future plans, eCommerce adoption likely within next 5-year period.</td>
</tr>
<tr>
<td></td>
<td>New cars: 100–500</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Used cars: 100–500</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Personnel: &lt;20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Company locations: 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Revenue: Euro 10 (million) (est.)</td>
<td>Implemented: 2000</td>
<td>Chief executive officer plus two students from a local educational institution</td>
<td>All salespersons use computers daily for preparing sales and insurance documents.</td>
<td>Web site used to gain eCommerce-related experience. No specific future plans.</td>
</tr>
<tr>
<td></td>
<td>New cars: 500–1000</td>
<td>Investment: Euro 0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Used cars: 1001–2000</td>
<td>New cars: Link to the importer’s Web site</td>
<td>Student project to satisfy course requirements</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Personnel: 21–50</td>
<td>Old cars: Link to an electronic marketplace that gives a list of used cars with links to details of each car</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Company locations: 2</td>
<td>Personnel: Photos with contact information</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Revenue: Euro 10–50 (million)</td>
<td>Implemented: 1998</td>
<td>Chief executive officer plus one salesperson</td>
<td>All salespersons use computers daily for preparing sales and insurance documents.</td>
<td>Web site used to gain eCommerce-related experience.</td>
</tr>
<tr>
<td></td>
<td>New cars: 100–500 (est.)</td>
<td>Investment: &lt;Euro 10,000</td>
<td></td>
<td></td>
<td>Auto service bookings using the Internet as a future plan.</td>
</tr>
<tr>
<td></td>
<td>Used cars: 501–2000 (est.)</td>
<td>New cars: Link to importers’ Web site</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Personnel: 21–50</td>
<td>Old cars: Simple list by location</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Company locations: 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Revenue: &lt;Euro 10 (million)</td>
<td>Implemented: 1998/1999</td>
<td>Chief executive officer plus sales manager</td>
<td>All salespersons use computers daily for preparing sales and insurance documents.</td>
<td>Web site used to gain eCommerce-related experience.</td>
</tr>
<tr>
<td></td>
<td>Used cars: 100–500 (est.)</td>
<td>New cars: Link to importers’ Web site, when available.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Personnel: &lt;20</td>
<td>Old cars: Simple list</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Company locations: 1</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Company</td>
<td>Revenue: Euro 10–50 (million)</td>
<td>Implemented: 2000</td>
<td>Local manager with support from chief executive officer</td>
<td>All salespersons use computers daily for preparing sales and insurance documents.</td>
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<tr>
<td></td>
<td>New cars: 1000–2000</td>
<td>Investment: &lt;Euro 16,000</td>
<td>New cars: Links to importers’ Web pages</td>
<td>All five locations networked by fixed lines.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Used cars: 2001–3000</td>
<td></td>
<td>Old cars: A search engine; from the result list links to details of each car; integrated with Automaster database</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Personnel: 51–100</td>
<td></td>
<td>Service: Booking through Internet</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Company locations: 5</td>
<td></td>
<td>Personnel: Photos with brief introductions</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**E**

<table>
<thead>
<tr>
<th>Company</th>
<th>Revenue: Euro 50–100 (million)</th>
<th>Implemented: 1998/1999</th>
<th>Liaison manager (direct report to chief executive officer, responsible for special projects, for coordination between company departments and between company and outside organizations)</th>
<th>Planned investment for further development: 13,000–16,000 Euro. Developing extranets specific to each company customer.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Used cars: 2001–3000 (est.)</td>
<td>New cars: Link to a</td>
<td>Service: Booking of time (proposals)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Personnel: 101–200</td>
<td>electronic marketplace</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Company locations: 5</td>
<td>Old cars: Link to an electronic marketplace</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>with a search engine</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**F**

<table>
<thead>
<tr>
<th>Company</th>
<th>Revenue: Euro 50–100 (million)</th>
<th>Implemented: 1995/1996</th>
<th>Service booking through Internet. Developing extranets specific to each company customer. Application of the mobile telephone technology so that, for example, when service is complete the system automatically sends a short message to the customer’s mobile telephone that the car is ready.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>New cars: 1000–2000 (est.)</td>
<td>Investment: Not available</td>
<td>New cars: No links to importers’ Web sites</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Used cars: 2001–3000 (est.)</td>
<td>Old cars: A search engine; from the result list links to details of each car</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Personnel: 101–200</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Company locations: 5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
None of the six companies systematically collected statistics about customer contacts, sales, and feedback initiated by e-mail. However, the CEOs of Dealerships C, F, and G were well informed about customer use of the Web sites of their dealerships because e-mails from customers were forwarded to the CEOs by the salesperson who originally received the e-mail. Dealerships B and E did not have enough experience at the time of the interview to provide any statistics. Dealerships C and D reported that they consistently receive 10 to 20 customer contacts in addition to some feedback each month. Company F reported the most customer contacts, about 100 contacts per month, and estimated 60 to 70 used cars sold during the 6 months prior to the interview as a result of referrals from the Internet. The CEO of Dealership G estimated about 40 customer contacts per month and claimed that he had done much business that originated from the Internet.

Given that CEOs have the responsibility of appointing individuals to take charge of the dealership’s eCommerce effort, they all agreed that new and young employees are better for this purpose. One CEO stated that technical prowess is not what makes a new hire preferable over a current employee. Rather, a new hire is preferable because he or she is not yet settled into a particular way of doing things, does not have to unlearn ways of doing, and can start learning the Internet immediately.

3. THE EMERGING ADOPTER CATEGORIES

Table 1 shows that the Web sites of automobile dealers who had Web pages were in many respects similar (see Section 3.3). However, our interviews revealed that these companies differed significantly not only in their understanding of the possibilities of the Internet, but also with respect to their eCommerce strategy. After several readings of interview transcripts, we saw that CEO understanding of eCommerce as a phenomenon could be divided into two-types: (a) strategic understanding of the impact of eCommerce on the business model and its consequences and (b) technological understanding of the possibilities of eCommerce. In fact, for some CEOs, their company’s Web site was a foreign artifact. Even when these CEOs knew the functionality of their Web site, they did not demonstrate an understanding of its business implications.

In terms of eCommerce development strategies, some companies had adopted a passive strategy, whereas others had embraced a much more proactive approach. We termed a strategy passive when a CEO had not adopted eCommerce at the time of the interview or if the dealership had developed a Web site only to “be ready if eCommerce were to take off in the car distribution business.” Conversely, dealerships with an active strategy regarded eCommerce as a business opportunity to be enthusiastically embraced (see Section 3.4).

3.1 Strategic Understanding

Business models have received considerable attention in the context of eCommerce. Timmers [33] defined a business model as the architecture for product,
service, and information flows; business actors and their roles; and a description of the benefits that accrue for each actor. Because business models define the role of dealers in the supply chain, they are of vital significance for dealers. For example, Ford Motor Company just launched an eCommerce application in Finland that allows direct buying of new cars from the importer; this enables customers to partially bypass the automobile dealer. eCommerce may also lead to other changes in the industry structure.

Underlying business models also emerged as a topic of concern during our interviews. Because of their strategic importance to dealers, we call the knowledge and comprehension of business models underlying eCommerce strategic understanding. In general, there was considerable uncertainty in this respect. Some interviewees articulated ideas of a possible future for eCommerce, whereas other interviewees had a much dimmer view of its potential.

In Company A, strategic understanding was clearly low. The interviewee summarized his contribution, or the lack thereof, at the end of the interview, as follows:

I hope this interview is of some benefit to you. I'm quite unknowledgeable on these issues. I can admit it frankly, because I do not have experience.

The CEO of Company G was at the opposite extreme. He immediately led the discussion to business models, emphasizing the dealer viewpoint:

The way organizations, especially car importers, the way they perceive eCommerce, [influences] whether it [eCommerce] is perceived on the field as a threat or as an opportunity. There are two different views in our case, Manufacturer G1 with its own view and Manufacturer G2 with a totally different view. This is very essential because it affects whether there will be competition, whether one sees eCommerce as a threat and starts to “put sticks between the spokes” to compete with it, or whether one sees it as an opportunity and as a tool, and immediately starts to make use of that.2

The strategic understanding of Dealership G’s CEO may be explained by the fact that Automobile Manufacturer G2 (referred to in the preceding quotation) was active in eCommerce. In other words, the business model underlying the eCommerce of Automobile Manufacturer G2 influenced the business of Dealership G and its CEO’s thinking.

Company F’s interviewee also demonstrated considerable strategic understanding. He described his company’s situation as follows:

We sell cars [from company] F1, F2 and F3. At the moment there is nothing special going on. None of these [manufacturers] is going to start Internet business that bypasses dealers. If you look at their web pages, for example www.F2.yy, there you see which country, and after that it gives the closest dealer. But a big question is how it will be done in the future. As a matter of fact, there are distribution systems delivering cars directly to the front door of the customer. (...) In England Volkswagen sells

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2For anonymity, the real names of the manufacturers are concealed.
two car makes through the Internet at prices that are 900 pounds lower than normal. The cars are delivered to the dealer who gets a nominal payment for final customer delivery, giving keys and washing the car.

He also took issue with reintermediation, as exemplified by Autobytel’s attempt to invade the Finnish market.

The representatives of the remaining four companies demonstrated a more intermediate strategic understanding with regard to eCommerce. They recognized that eCommerce will likely make it easier for customers to compare prices (Company D), will likely decrease price differentials among regions of the country (Companies B and E), will make the business of regional car dealers more nationwide (Companies C and E), and may lead to the separation of new and used car sales (Company C). However, none of the CEOs demonstrated an equal systematic understanding of the strategic significance of eCommerce, and they did not raise this issue themselves.

3.2 Technological Understanding

Technological understanding refers to the respondent’s comprehension of eCommerce as a technological phenomenon—namely, how it is supported by information and communication technologies, especially the World Wide Web, and what functionalities it may have. The respondents’ technological understanding on the whole followed a pattern similar to that of their strategic understanding. The CEO who admitted that he had never used e-mail and that he did not know what the term World Wide Web meant, explained his lack of knowledge as follows:

It is mainly because I do not have language skills that I’m behind, I master these basic programs [for car dealers] but this side is a little bit [weak].

Companies C, D, and E had their own Web pages. However, even though the interviewees from these companies were aware of the functionality of their Web sites, the Web sites remained external artifacts. They saw eCommerce as merely an external factor that they needed to adapt to (Company C), as an opportunity (Company E), or as a new marketing channel (Company D). These respondents did not demonstrate a sophisticated understanding of the business meaning of their Web sites in the sense of their potential functionality in supporting eCommerce, as did the respondents of Companies F and G.

The representative of Company F strongly emphasized that the Internet is a two-way information channel between customer and seller. He saw this two-way nature as so important that he claimed the following:

In my opinion the Internet is to make customers more loyal. Through the Internet you can create “frequent customer” benefits and special offers and be in contact [with the customer] directly through e-mail.

This view is clearly at odds with the myth that “Open IT network architectures lower prices and benefit buyers as the dependence on supplier hierarchies is
However, the representative of Company F stated that since the advent of the Internet, prices have clearly become more equal among different parts of the country.

Company G’s representative stated the following at the start of the interview:

To me eCommerce does not require that a business transaction is conducted electronically [in its entirety]; there is eCommerce if a customer during some stage of the process is in contact with us electronically, using an electronic media. In my opinion that is eCommerce. Often eCommerce or Internet-commerce is assumed to cover the whole process from the beginning (A) to the end (Z) electronically.

He also demonstrated his technical understanding by critically commenting on his company’s Web site as follows:

Yes, in my view it [Web site] has collected dust. It has not been touched for a couple of years. They were pretty good when they were installed, but now they definitely are outdated.

### 3.3 Web Site Maturity

The assessment of Web site maturity was based on an overall evaluation of its current functionality on a dealer-by-dealer basis (see Table 1). Because of commonalities within the industry, it is understandable that considerable similarity exists among the six sites. However, there are also some differences. One of the major differences concerns used cars. In the simplest case, the Web site displayed only a simple list of used cars, and the list was being maintained manually (Companies C and D). As a more advanced solution, the Web site included a search engine that allows specifying several search criteria for finding cars of interest from an underlying database (Companies E and F). As an intermediate solution, a search engine was manually integrated with the company’s database (Company G). A second clear difference in Web site functionality concerns customer service. For example, two of the dealers had implemented online booking for maintenance and repair service (Companies E and F). Furthermore, two dealers attempted to personalize their Web sites by posting photos of their personnel accompanied by contact information (Companies B and E).

### 3.4 eCommerce Developmental Strategy

The seven car dealers showed great differences with respect to their eCommerce developmental strategies. For example, the CEO of Company A had decided not to adopt eCommerce. To the interviewer’s comment that many competitors had adopted, he replied:

No, it does not create any pressure. We sell well and we have customers, and I don’t believe that they [my competitors] are selling much over it (Internet).
He then continued:

I think that it will be the next generation that will start with it, because I’m so far over 50. Let us see whether my sons will continue [the business] and so on; they have more knowledge.

He estimated that his company might adopt eCommerce within the next 5 years.

Company B installed its own Web site in the year 2000. Even though the CEO of Company B did not state so directly, on the basis of his revelations we deduced that the offer of two young students to develop Web pages free of charge was a significant reason for its development. The students had configured a professional-looking Web site as part of a school assignment. This chain of events suggests that the dealership’s management (a) experimented with the Internet but lacked a clear strategy and (b) did not consider hardware or Web site maintenance expense. In other words, management acted opportunistically. The CEO did not report any specific future plans, and his idea that the two students would take care of the future Web site development and maintenance did not sound particularly believable.

Company C and Company D also had a passive strategy of going along with eCommerce so that they would be ready when eCommerce would really take off. Their Web pages were unsophisticated. The CEO of Company C planned to develop a way for customers to schedule car maintenance appointments on a Web site. Finally, the CEO of Company D expressed the intention of improving the company’s Web site gradually.

In contrast with the companies just discussed, Companies E, F, and G evidenced a much more proactive development strategy. The interviewees from Company E were visibly pleased with the opportunity to discuss their Web pages with university researchers, even though the company’s Web pages were not finished at the time of the interview. They strongly emphasized their belief that eCommerce is an opportunity, and they saw not being involved in it as a major risk. However, with respect to the future, their company needed to slow down and take stock of its eCommerce efforts and future plans.

The interviewees from Companies F and G also considered eCommerce a business opportunity in which they had to be involved. In addition, both interviewees expressed a considerable commitment to further eCommerce development. The respondent from Company F told the interviewers that planned investment for further development of eCommerce was in the range of 13,000 to 16,000 (Euro). More specifically, his plans included development of extranets specific to each of the company’s industrial customers. Company F had also created a managerial position responsible for further IT developments.

Company G also demonstrated considerable commitment to the development of IT capabilities, including eCommerce. It had incorporated IT into its strategic plan and had nominated an individual with a business background as its IT manager. The CEO of Company G also demonstrated great interest in and considerable understanding of IT. As mentioned previously, he saw his company’s Web pages as outdated and had committed to a considerable updating effort. More specifically, this CEO raised issues of service bookings through the Internet, development of extranets specific to the company’s customers, and exploitation of mobile telephone
technology so that, for example, on service completion the system would automatically send a short message to the customer’s mobile telephone stating that the car was ready for pickup. He also selected several other IT development projects such as electronic archiving. In fact, he gave the impression that further company Web site development was delayed by other development projects. Despite these concerns, this CEO clearly planned to be proactive in the use of eCommerce.

### 3.5 Adopter Categories

Figure 1 summarizes our ranking of the seven dealers on four dimensions: strategic understandings, technological understanding, Web site maturity, and eCommerce developmental strategy. It is evident that Company A ranks lowest and Companies F and G rank highest in strategic understanding and technological understanding. Companies B, C, D, and E occupy intermediate positions regarding strategic understanding and technological understanding. On the basis of our interview data, identifying any difference in understanding dimensions among Companies B, C, and D is difficult. Figure 1 also shows that Companies E and F had the most advanced Web pages and, thus ranked first on the Web site maturity dimension. Furthermore, our evaluation indicated that Company B

![Figure 1. Emerging five adopter categories of electronic commerce (eCommerce).](image-url)
ranked second and Companies C, D, and G ranked third. Company A is an extreme case because it lacks a Web site and thus is considered the least mature. In terms of an eCommerce developmental strategy, five cases can easily be identified: Company A decided to “wait and see” instead of adopting, Company B used an opportunistic strategy, Companies C and D used a passive adoption strategy, Company E showed an active adoption strategy but lacked clear future plans, and Companies F and G evidenced a proactive strategy that included clear future plans and a strong organizational commitment to eCommerce.

It is notable that the rankings of the seven companies on the four dimensions are consistent (see Figure 1). Company A shows the lowest ranking on all four dimensions, Companies C and D rank in the middle, and Company F ranks highest on all dimensions. As previously noted, Company B ranks in the middle on all dimensions except for its eCommerce developmental strategy and its Web site maturity. Similarly, Company E ranks in the middle except for its developmental strategy and its Web site maturity. Company B shows the largest spread among its rankings compared with that of other companies: The company ranks second on Web site maturity and fourth on eCommerce developmental strategy.

The high consistency of the rankings along the four dimensions led us to conjecture that emerging adopter categories, or gestalts, could be identified that synthesize the four dimensions, as shown in Figure 1. We called them emerging gestalts because they are inductive generalizations based on qualitative data obtained from a limited number of cases. As in quantitative cluster analysis, we do not expect unique solutions to this categorization problem, but meaningfulness of the resultant clusters must be evaluated in terms of the distribution of the cases into clusters, the homogeneity of clusters, and the ease of their interpretation. In our study, with its small number of cases, it is not meaningful to focus too much on the distribution of the cases into categories. Instead, we emphasize faithfulness to the data, reasonable homogeneity of categories, and the interpretability captured by the descriptive name of the cluster. Figure 1 identifies two mutually consistent solutions to this qualitative cluster analysis problem. The first solution identifies three clusters:

1. **Procrastinators**, as exemplified by Company A: Procrastinators have decided not to adopt eCommerce at the present time but to wait and see. Their strategic and technological understanding of eCommerce is low, and their Web site maturity is low.

2. **Followers**, as exemplified by Companies B, C, D, and E: Followers have adopted eCommerce, but they do not attempt to lead its development. Their strategic and technological understanding of eCommerce is intermediate. Their Web site maturity varies, but on the whole it is intermediate.

3. **Visionaries**, as exemplified by Companies F and G: Visionaries demonstrate high degrees of strategic and technological understanding, a mature Web site, and an active eCommerce developmental strategy. With respect to the seven cases, only Company F ranked first on all four dimensions. As pointed out previously, Company G differed from this characterization because it ranked first on three dimensions but only third on the Web site maturity dimension. However, we believe that this situation is only temporary.
Our data showed considerable variation among Followers, especially in their eCommerce developmental strategy. As a way to emphasize this variation, the Followers group was further divided into three categories:

1. **Opportunists**, as exemplified by Company B: On account of special circumstances, Opportunists have adopted eCommerce, but they lack any clear strategy. In fact, their strategic understanding and technological understanding of eCommerce tend to be low, and their Web site maturity is relatively low. As mentioned previously, Company B may not be able to maintain its relative position on the maturity dimension if it does not change its eCommerce developmental strategy.

2. **Waverers**, as exemplified by Companies C and D: Waverers have adopted eCommerce to gain experience to be ready if eCommerce takes off. Strategic and technological understanding by these companies and their Web site maturity tend to be average.

3. **Striders**, as exemplified by Company E: Striders have a fairly proactive strategy and attempt to gain rapid progress in their eCommerce deployment. This progress usually arises on account of externally induced developments of relatively advanced Web pages. A critical question in the case of Striders is whether they are able to maintain the momentum and build corresponding strategic and technological understanding.

### 4. ADOPTION OF eCommerce AS A LEARNING PROCESS

Even though some dealerships (such as Companies C and F) maintained Web sites in support of eCommerce for approximately the same length of time, their understanding of the phenomenon differed radically. This finding shows that the creation and operational use of a Web site are insufficient to trigger effective learning about eCommerce. This observation led us to conceptualize eCommerce uptake as a learning process (Figure 2). Figure 2 presents a conceptual model containing potentially relevant factors in the adoption of eCommerce among car dealers. The model represents an inductive generalization of seven cases; therefore, it is hypothetical. The purpose of this section is to explain our model so that it can be the basis for further research.

With one exception, our interviewees were CEOs of their dealerships. Adoption of any significant innovation in small or medium-sized companies such as Companies A through G requires top management’s acceptance and continued commitment. The interviews also revealed that CEOs’ interest in IT varied radically for several reasons. For example, the CEO of Company G expressed his personal interest in various IT gadgets. The eCommerce initiatives of some manufacturers that he represents may also explain some of his interest. We did not interview the CEO of Company F, but we sensed that his position in the national association of auto dealers in Finland might explain his interest in eCommerce. The interest of Company E’s CEO may have arisen because of one local manager’s interest in eCommerce and because of the eCommerce initiative of one of the major manufacturers that he represented. The CEO of Company A referred to his age and uncertainty about his successors as a reason for his disinterest in eCommerce.
Rogers [11] asserted that organizational size is positively related to innovativeness. Swanson [35], although agreeing with Rogers [11], also proposed that early adoption of Type II innovations (applying information systems products and services to core business administrative processes) and Type III innovations (integrating information systems products and services with core business technology) is more likely when host organizations are large and diversified. eCommerce is a clear example of a Type III innovation. Our findings are in agreement with Rogers’ [11] and Swanson’s [35] assertions because larger dealerships in our study tended to be more advanced in eCommerce adoption than did smaller dealerships (Table 1). Rogers [11] suggested a number of reasons for the significance of size: total resources, slack resources, technical expertise of employees, organizational structure, and so forth. In our case, larger dealerships (Companies F and G) obviously had more resources to invest in the adoption of innovations such as eCommerce and the hiring of IT managers.

Nevertheless, we do not claim that the size has a positive effect and still less a simple linear positive effect over the entire range from small firms with few employees to large firms with thousands of employees. All the dealerships examined in our study have fewer than 200 employees. In fact, one survey of the adoption of Web technology, covering a number of industries with larger companies, did not find organizational size to be related to the adoption of web technology [36]. We also want to point out that even though company size may be relevant in statistical terms, the relationship is not necessarily so deterministic that the larger company would always be more advanced in eCommerce than the smaller company would. In fact, in our study, Company D, the second smallest of the seven dealerships, was clearly more active than Company B was.

Another external factor that clearly stood out during the interviews was IT application maturity. For example, salespersons in all seven companies use computers to do the paperwork related to auto sales. However, one distinguishing factor, was the use of information and communication technologies to manage geographically distributed companies. Companies E, F, and G had networked their geographically distributed organizational units. The CEO of Company G

![Conceptual model of factors affecting electronic commerce (eCommerce) adoption. IT = information technology.](image-url)
emphasized the significance of networking as shortening the geographic distance between the units. Experience with networking may have provided a head start toward establishing Web pages for eCommerce. As Table 1 shows, networked companies were larger than nonnetworked companies. In short, company size may partially explain differences in IT maturity among companies.

Differences in respondents’ beliefs about eCommerce were clear. The CEOs of Companies A through D expressed the conviction that eCommerce was coming, but they did not see its significance for the business just now. Respondents from Companies E through G saw eCommerce much more as an immediate opportunity that had to be embraced. On the basis of our interview data, we do not know if the beliefs expressed motivated CEOs to adopt eCommerce. It is also possible that CEOs formed these beliefs merely as rationalizations of their decision to participate in eCommerce. However, previous research [37] suggests a mutual dependency between beliefs and strategic and technological understanding of eCommerce. We can hypothesize that strategic and technological understanding affects an organization’s absorptive capacity [37] with respect to eCommerce. Cohen and Levinthal [37] argued that absorptive capacity influences expectation formation because better knowledge permits companies to better understand and therefore better evaluate the commercial potential of technological advances. Because of low strategic and technological understanding of eCommerce, a company may not be aware of eCommerce opportunities. This unawareness naturally influences the adoption of eCommerce.

As pointed out previously, dealership rankings on the four eCommerce adoption dimensions of Figure 1 are highly consistent. Figure 2 suggests that they may be causally related. We believe strategic and technological understanding of eCommerce to influence both eCommerce developmental strategy and Web site maturity. This causal relationship between strategic and technological understanding of eCommerce and its developmental strategy is consistent with the findings of Cohen and Levinthal [37]. They proposed that organizations with higher levels of absorptive capacity tend to be more proactive than organizations with more modest levels of absorptive capacity, which tend to be more reactive. We further assume that developmental strategy influences Web site maturity, at least in the long run (Company G is an exception, at least in the short run). Figure 2 shows that strategic and technological understanding of eCommerce can also influence Web site maturity more directly, without any change in the developmental strategy. For instance, this may occur when an external vendor uses state-of-the-art Web site technology to implement a sophisticated Web site for a company.

We observed striking differences in strategic and technological understanding of eCommerce among Companies C, D, and F despite the nearly equal longevity of their Web sites. Assuming that strategic understanding and technological understanding of eCommerce were poor to the same degree in the three companies 3 to 4 years ago, we cannot help but wonder what factors explain the present differences among these three dealerships in the accumulation of the strategic and technological understanding of eCommerce. One possible explanation is that the companies differed in IT maturity and experience. Especially relevant factors may include prior Internet experience by Company F and hiring a manager with computing expertise. Put differently, perhaps prior Internet experience
and the presence of a manager with IT experience created an environment conducive to eCommerce development.

In contrast, the cases of Companies C and D indicate that development of a Web site in support of eCommerce is by itself insufficient to trigger effective learning at the level of strategic and technical understanding of eCommerce. Even though Companies C and D implemented mature Web sites early, they did not initiate effective organizational learning. We suggest that this situation may exist because of their fairly passive strategy regarding eCommerce development. Companies G and F have been much more successful in this respect. In short, Figure 2 suggests that organizational learning—strategic and technological understanding of eCommerce—depends not only on the maturity of the Web site, but also on the eCommerce developmental strategy. This assumption derives from our analysis of the eCommerce adoption paths in the seven automobile dealerships.

5. DISCUSSION

We concluded in Section 3 that the seven dealerships and their business conditions are configurable into adopter categories, each with four dimensions (Figure 1). We identified three major categories: procrastinator, follower, and visionary. Followers were further divided into three subcategories: opportunist, waverer, and strider. Each category in turn is characterized by four dimensions: strategic understanding, technological understanding, Web site maturity, and eCommerce developmental strategy. As already mentioned in Section 3, strategic understanding and technological understanding refer to the company’s appreciation of the impact of eCommerce on the business model and technological possibilities, respectively. Web site maturity reflects Web site functionality, and developmental strategy reflects the company’s strategy toward implementing its eCommerce capability. It is noteworthy that these adopter categories do not correspond to Rogers’ [11] five adopter categories based on the earliness of adopting (innovators, early adopters, early majority, late majority, and laggards) because we do not attempt to describe the timing of adoption. Company G was an early adopter, and Company B a late adopter. Companies C, D, and F adopted at approximately the same time. However, Company F differed considerably from Companies C and D. Another clear difference from Rogers’ [11] findings is that we do not see a company’s membership in an adopter category as fixed or permanent. Finally, the categories that we identified are not stages in a predetermined sequence. For example, Company E as a strider made a quick move from a nonadopter to a fairly advanced stage.

Our inductive analysis of seven cases led to a theoretical model (Figure 2) that has several affinities with the resource-based view (RBV) of competitive advantage [38, 39]. The RBV has also aroused interest in the information systems community [40–44]. These studies focused on large organizations, whereas our study concerns small companies. However, Hadjimanolis [45] claimed that the

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3 For the sake of simplicity, we do not distinguish among resources, services rendered by resources, assets, capabilities, and competencies, as is done in the RBV literature. This vocabulary is not well established in the RBV.
RBV is particularly suitable in the case of small firms. This finding makes the RBV potentially relevant to our study. The role of the owner or the manager as an organizer of resources and as an orchestrator of strategy in small firms [45] is in line with Figure 2, which emphasizes the significance of top management’s leadership or entrepreneurial ability [46] as a special resource. Entrepreneurial ability is the capacity to identify, develop, and complete new combinations of existing asset bundles into new asset configurations [46].

Analysis of our interview data does not allow us to claim that eCommerce yielded any of the seven companies a significant competitive advantage. In fact, Godfrey and Gregersen [46] suggested that current scholarship in the RBV focuses more on the nature of resources than on their linkage to competitive advantage. Barney [47] distinguished three types of resources: physical capital, human capital, and organizational capital. Physical capital represents technology, production equipment, and the firm’s geographic location. Human capital includes employee knowledge, experience, training, and insights. Organizational capital stands for planning, controlling, and coordinating procedures, and relations among people within the firm and relations between the firm and outside organizations. On the basis of the preceding analysis, it is clear that our seven companies differed with regard to their (a) physical resources such as IT maturity and Web site maturity, (b) human resources such as IT experience and strategic and technological understanding, and (c) organizational resources such as top management leadership and eCommerce developmental strategy (Figure 2).

Our findings are consistent with the point made in RBV theory that tangible resources are easier to imitate than intangible resources [48, 49]. If we consider Web site maturity as a tangible resource, it can easily be imitated by employing external consultants, as was noted by Company G’s CEO and practiced by Company E. The RBV also predicts that intangible resources such as knowledge are much more difficult to imitate [50, 51]. As a result, RBV theory focuses on knowledge as a critical resource. In fact, Teece et al. [52] suggested that the greatest contribution of RBV theory to strategy formation involves skill acquisition and the management of knowledge and learning. This finding is consistent with Figure 2, which identifies two types of knowledge (technological understanding and strategic understanding of eCommerce) that are pivotal to eCommerce adoption. More specifically, technological understanding and strategic understanding of eCommerce relate closely to managerial IT skills among the four IT-related resources—capital, proprietary technology, technical skills, and managerial IT skills—discussed by Mata et al. [41] from the RBV perspective. On the basis of analysis of the value of resources, their heterogeneous distribution, and their imperfect mobility, these authors concluded that managerial IT skills alone are the basis for a sustained competitive advantage.

However, note that IT skills in Mata et al. [41] concern the skills of IT managers and not the IT skills of general managers such as CEOs. Most auto dealers in our study did not have a separate IT function or manager.

Bharadwaj [43] criticized Mata et al. [41] for having a reductionist view of technology, in which technology is considered to consist of commodity-like components, but architectural aspects of the IT infrastructure are ignored. Bharadwaj [43] claimed that building such an integrated infrastructure
Much research on the RBV is informed by the idea of a hierarchy of resources—namely, undifferentiated production factors, firm-specific assets, competencies, and capabilities [42, 43, 51–54]. Because of the limitations of our interview data, it is beyond the scope of this study to analyze in-depth the competencies and capacities of the seven dealerships. Instead, Figure 2 should be interpreted as a model of the resource accumulation process at the level of firm-specific assets, focusing especially on knowledge assets (technological and strategic understanding of eCommerce). In fact, Priem and Butler [55] and Barney [56] agreed that the RBV has neglected the asset accumulation process.

Nevertheless, previous research suggests that knowledge and learning are pivotal in these higher level competencies and capabilities [51–53]. Grant [53] proposed that a capability is essentially about knowledge integration. Even though we did not attempt to identify and assess the capabilities of the seven dealerships, technological understanding and strategic understanding of eCommerce imply aspects of knowledge integration: Higher technological and strategic understanding can be expected to facilitate the integration of eCommerce with the company’s business. Teece et al. [52] claimed that organizational competencies and capabilities reside in organizational processes, emphasizing the importance of learning processes. Figure 2 emphasizes learning as an accumulation of technological and strategic understanding of eCommerce. Technological understanding and strategic understanding of eCommerce, when they broaden a dealership’s understanding of the possible functionalities of eCommerce and underlying business models, can also be expected to enhance the dealership’s dynamic capabilities—that is, “the firm’s ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments” ([53], p. 516).

As observed previously, we found striking differences in strategic and technological understanding of eCommerce between the companies and their learning trajectories. This finding leads us to the question of what factors may explain the differences in the accumulation of the strategic and technical understanding of eCommerce. Figure 2 suggests that organizational learning—building strategic and technological understanding of eCommerce—depends not only on Web site maturity, but rather on the combination of Web site maturity and the eCommerce developmental strategy. A related question is whether companies with less advanced strategic and technological understanding of eCommerce will be able to catch up with companies with more advanced strategic and technological understanding. This question is illustrated by Company E, which clearly adopted a proactive strategy and established an advanced Web site. Will it be able to increase its technological and strategic understanding (as Figure 2 would suggest) and eventually catch up with Companies F and G? The path dependence of absorptive...
capacity, implied by strategic and technological knowledge [37] and time-compression diseconomies [57], suggests that this would be difficult to accomplish. The point is that “accumulating” absorptive capacity in one period will permit its more efficient accumulation in the next ([37], p. 136). Therefore, an early start is important. However, as pointed out previously, we suggest that an early start alone is insufficient. It should be accompanied by an active eCommerce developmental strategy.

Our study suggests that the degree and the kind of eCommerce uptake should not be determined solely by studying a company’s Web site. Web site maturity is certainly indicative and is a manifested expression of technological adoption of eCommerce. Nevertheless, we suggest that it is not necessarily indicative of a sound eCommerce adoption policy. A sophisticated Web site can be created relatively easily by an external developer. However, if a dealership does not have adequate strategic understanding and technological understanding of eCommerce, along with an eCommerce adoption strategy, the externally developed Web site may not be properly integrated with the business.

Let us emphasize this point with a metaphor. Consider the sport of “orienteering,” which is popular in Finland. A participant must find certain places in an unknown terrain with the aid of only a compass and a map. An individual may have the compass but not know how to use it. Or, this person may have a map but may not be able to locate him or herself on it. Or the person may not be able to read the map or to select a proper strategy when he or she is choosing the route. Either way, the individual will fail to reach the target location.

Similarly, a dealership or a company may have a technologically advanced Web site but may not be able to use it in its business. It may lack a map of the business terrain, especially one over the immediate time horizon. It may not able to locate its position on the map. It may lack the necessary strategic and technological understanding of eCommerce and the developmental strategy to get where it wants to go. Therefore, our advice for researchers and practitioners is not only to look for Web site maturity, but also to consider the eCommerce strategic understanding, technological understanding, and eCommerce developmental strategy.

As mentioned in Section 2.4, none of the companies systematically collected statistics about eCommerce. However, Companies F and G reported much more positive numbers than those reported by Companies C and D, which had approximately the same experience. None of the companies reported cases in which the entire market transaction except delivery had been conducted electronically. A number of technical, legal, and cultural factors may explain this conservativeness [58, 59]. First, despite an advanced technical infrastructure, the Finnish shopping culture is not necessarily amenable toward buying cars electronically. For example, shopping from catalogs has never been particularly popular in Finland. Second, cars are extremely expensive in Finland. Therefore, a car is a major investment for Finnish households. This fact may lead Finns to increased use of the Internet to gather background information and do comparative shopping, but the

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7There is a tendency to rely on the concrete and visible Web pages partly because of their easy accessibility [62, 63].
final decision is not necessarily made online. Third, sales of new cars and old cars are not separated in Finland. When a customer buys a new car, he or she normally expects the dealership to buy back his or her old car. This practice makes the negotiations complex because part of the deal is to agree on the value of the trade-in. Even though the car dealers predicted that these business practices would change, such change will likely take some time.

Another claim could be that the number of car sales initiated by the Internet is not necessarily a good indicator of the success of a dealership’s eCommerce policy. Perhaps it is more fundamental to think of a company’s eCommerce policy in terms of how it helps to position the company for the future. For example, there is a clear trend of expanding eCommerce to support auto service. Two companies (E and F) already had Web pages that allow booking service time online, and two other companies (C and G) had plans to develop their Web sites with this feature.

As an outcome of the preceding analysis, we do not assume that eCommerce adoption is directly related to the amount of business conducted electronically. Naturally, IT supporting eCommerce is a necessity, but after that, consumer behavior may be influenced by various factors not considered in this article.

What are the implications of this study for practice? We contend that eCommerce is such a significant phenomenon affecting car dealers that they should be aware of it. Therefore, we emphasize the primacy of strategic understanding and technological understanding of eCommerce instead of Web site technical maturity. Our interview-based study positively identified two key enablers: strategic understanding and technological understanding. Companies with better strategic and technological understanding have better opportunities to respond in an appropriate way to contingencies created by future eCommerce developments and to survive under these new business situations. Even though these enablers are difficult to develop or imitate, we encourage dealerships to invest in them. Furthermore, although an advanced Web site may not be vital for this learning, it nevertheless may create a concrete impetus. As we discovered, the cost of building a reasonable and informative Web site is not high. However, as pointed out by Keen and Ballance ([60], p. 59), construction costs are moderate so long as sales transactions against the Web site are not required. In addition, a company must have an active developmental strategy and an active interest in the phenomenon. The goal could be to initiate a positive learning cycle that reinforces understanding and further development.

6. CONCLUSIONS

We undertook this study because we were interested in the way retailing executives react to the uncertainty created by the penetration of eCommerce into their markets. We selected the automotive industry and particularly car dealers for our study because, on the basis of previous research [3, 20, 21], we expected it to be heavily influenced by eCommerce. Finland was an ideal country in which to conduct our research because it is technologically advanced and populated by citizens who are avid users of Internet technology. Furthermore, one major U.S.-based car manufacturer is experimenting with two alternative strategies for online automobile
purchasing in Finland. This fact implies a greater possibility that automobile dealers have considered the potential impacts of eCommerce on their business. In fact, our interviews demonstrated that all but one dealer had given serious consideration to the effects of the Internet and eCommerce on their business.

Our interviews indicated that the CEOs did not perceive the possibility of disintermediation as an immediate threat. However, their reactions to the emergence of eCommerce and responses to our interview questions differed strikingly. This finding led us to focus on similarities and differences among the dealerships, which ultimately crystallized into four themes or dimensions: strategic understanding of eCommerce, technological understanding of eCommerce, Web site maturity, and eCommerce developmental strategy. Ranking the seven companies along these four dimensions revealed clear patterns. Even though some dealerships had equally long histories of having a Web site supporting eCommerce, their understandings of the phenomenon differed radically. Thus, we concluded that the existence of a Web site as such and its operational use is not sufficient to trigger effective learning about eCommerce. This conclusion led us to hypothesize the adoption of eCommerce as a learning process, as depicted in Figure 2.

The study’s limitations arise from the small number of retailers in one industry, in one city, and in one country. The extent to which the study’s findings can be generalized beyond the seven cases, beyond Oulu, beyond Finland, and beyond the automobile industry is a question to be addressed in future research. Our case study targeted CEOs of dealerships; thus, we obtained data from one respondent per company. More generally, we did not have an opportunity for triangulation because most of the discussion concerned issues that only the CEOs were able to answer. However, as pointed out in Section 2.3, we judged their responses to be honest and sincere.

Our study took place during a specific time period, which may affect our results. Knowledge and learning as discussed in the field of knowledge management, for example, are currently popular concepts. This fact, combined with our academic background, may have biased us to focus on knowledge resources. At the same time, we focused on a period of change and unpredictability from the viewpoint of the seven dealerships. Miller and Shamsie [61], in their analysis of Hollywood studios, found that property-based resources helped financial performance in a stable environment, whereas knowledge-based resources boosted performance in a more uncertain environment. Because our study targeted the adoption process of eCommerce, which as a major innovation involves considerable uncertainty, we believe that our emphasis on knowledge is justifiable and consistent with previous research.

Despite the limitations just described, this study succeeded in creating theoretical insights into eCommerce uptake in retail businesses. These results suggest several avenues for future research. More specifically, we see a need for future research on three fronts:

1. Longitudinal studies of eCommerce adoption in individual retail businesses: This study underlines that the adoption of an evolving innovation such as eCommerce is a continuous process (as suggested in Figure 2). So that a deeper understanding of the dynamics can be achieved, in-depth longitudinal studies of the
adoption of eCommerce in individual companies are required. The retailers to be investigated may operate in the automobile industry or in other retail businesses.

2. Surveys to test the generalizability of the adopter categories (Figure 1) and the causal model (Figure 2): Surveys allow data collection from a larger sample of retailers dispersed over a larger geographic area. The surveys may be targeted to other retail businesses, which would allow testing of generalizability across industries.

3. Cross-cultural analysis of eCommerce adoption in automotive retailing and other businesses.

We plan to contribute on all three fronts in future studies.

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**APPENDIX**

**eCommerce Interviewing Guideline (Adopters)**

1. How did the idea for a company Web site develop—was there someone in the company who pushed eCommerce? Do you start eCommerce as a new business strategy or in response to competitors? What are your expectations about customer response, organizational impact, and business results?

2. How much has your company invested in the eCommerce effort—are these investments for Web site development only or are there other expenses? Who designs and maintains the Web site? How much time does it take from eCommerce idea until Web site installation?

3. Is eCommerce compatible with your traditional way of doing business, or, if not, how does eCommerce change the way business is done? Do you see any conflict between doing eCommerce business and doing traditional business? What is the strategic role of eCommerce in your business?
4. How does eCommerce affect your business model—that is to say, advertising, marketing, contacting customers, finding a car at the right price, purchasing the car, making payment, and delivering the car?

5. New business initiatives demand changes in organizational structure, new relationships between management and company employees, and employee training. What organizational changes do you plan to make with eCommerce? Do employees need additional eCommerce-related training?

6. What do you expect customer reactions to be to the eCommerce initiative: Will they be satisfied with the services provided? Does it create new customers, increase customer loyalty, and increase car sales?

7. What are the things that need attention for eCommerce—things that just need to be absolutely correct for eCommerce to be successful? How did you identify these factors—beforehand or after the fact?

8. Has your eCommerce strategy been successful—how do you measure or assess success? What are your future plans for eCommerce? What do you see as the major problems and risks of eCommerce in your business?

eCommerce Interview Guideline (Nonadopters)

1. The trade press often predicts that eCommerce will revolutionize commerce. It is suggested that consumers will buy almost everything through the Internet. However, there are people who think that these predictors are overoptimistic. What is your view about eCommerce and its development?

2. Have you considered transitioning to eCommerce and establishing your own Web site? If you have, when? How was the idea initiated? Was there someone who especially pushed the idea?

3. Why did you end with the decision not to adopt eCommerce at this stage? Do you see any risks related to this decision?

4. How do you see the future of eCommerce in the automotive business? How may it affect advertising, marketing, contacting customers, finding a car at the right price, purchasing the car, making payment, and delivering the car?

5. Would you believe that a transition to eCommerce implies organizational changes? Would it have any impact on your management practices, changes in personnel, training of personnel, and so forth?

6. Are you acquainted with the eCommerce technology, computers, Internet, and World Wide Web?

7. Have you estimated the economic investments required for the presence of your company on the Internet?

8. What are your future plans for eCommerce? What do you see as the major problems and risks of eCommerce in your business?