

POTENTIAL FOR ONLINE GROCERY SHOPPING IN THE URBAN AREA OF VIENNA

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INTRODUCTION

The market for Internet shopping in the food industry has gained increased interest of retailers especially in Central European countries like Austria. Recent experiences in the US and optimistic estimates (Green, et al. 1998; Kutz 1998) show that the potential for selling groceries online might be substantial – even in Europe. Accordingly, companies of the grocery industry in Austria are monitoring technological developments to better understand when to move into this new emerging market. Generally, the diffusion of the Internet and the availability of cheap computer equipment created a new type of customer who wants an easy and convenient alternative to regular shopping in supermarkets. Especially in urban areas online shopping offers new potentials to increase market shares and attract new target groups. These new virtual stores can also serve as tools for management and marketing research (Burke 1996), and for improved communication with customers (Bauer, et al. 1996).

To analyze the market potential for grocery shopping via Internet in the urban area of Vienna an empirical study at the Department of Management Information Systems at Wirtschaftsuniversität Wien (WU – Vienna University of Economics and Business Administration, Austria) was conducted. The results presented in this paper include

- ◆ demographics and shopping habits of interviewees;
- ◆ computer equipment and Internet experience of households;
- ◆ online shopping plans and market potential for the Vienna urban area.

RESEARCH DESIGN

Since the introduction of interactive Videotex, predictions about the potential for online retailing of groceries have been published (Püttmann 1986) with little success. We have learnt that in order to achieve valid and generalizable results for determining market potentials it is important to use quantitative methods and a representative sampling tool. As a result, in this study we decided on using telephone interviews with standardized questionnaires. The sample consisted of 483 households in the urban area of Vienna. The interviews were conducted during November and December 1997 by students of the Department of Management Information Systems at WU.

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The MIS department at WU already completed a series of empirical studies on Internet related topics (Hansen, et al. 1996; Kiessling, et al. 1996). Hence, existing expertise and instruments were applied to this study. The questionnaire consisted of standardized questions and was developed in two steps. On the one hand, in order to provide comparability questions from previous studies were adopted regarding computer equipment and Internet access. On the other hand, a set of questions was formulated to assess current shopping habits and future plans for online shopping of groceries in households in the urban area of Vienna. Given the goal of this study, interviewees were defined as those members of a household mainly responsible for grocery shopping and those older than fourteen years.

The population of the Viennese urban area of 2,102,488 persons or 973,303 households was used for sampling in this study. The Austrian Statistical Yearbook (1996) describes three clusters for the definition of this region: the city of Vienna, the suburban area surrounding Vienna, and the rural area surrounding Vienna. We used this clustering as well as the size of towns and cities in this area for drawing our sample. This procedure led to the following sample distribution of interviewees in this study: 71% from Vienna, 7% from cities with 10,000 inhabitants or more, and 22% from smaller towns and communities.

A random sampling technique was used to select names and telephone numbers of possible interviewees from the Vienna phonebook. Altogether 1,500 addresses were selected and 1,196 households were contacted. Of these contacts, 483 interviews were completed successfully and 713 refused to be interviewed. Through this response rate of 40.4% and by clustering our sample, the results can be viewed as representative for the urban area of Vienna.

RESULTS

The results of this study show demographic characteristics of grocery buyers, current shopping habits, computer equipment of households, Internet access and usage, as well as intentions for online shopping. Based on these results we present a calculated market potential for Internet shopping of groceries in the Vienna urban area.

◆ **Demographics**

Of the 483 interviewees of this study 73.3% were women. The average age was 46 years. The age distribution matched the one of the Austrian Statistical Yearbook (1996). 40% of all interviewees had a secondary or post-secondary degree. In general, the sample was dominated by single (25.8%) and two-persons households (34.5%).

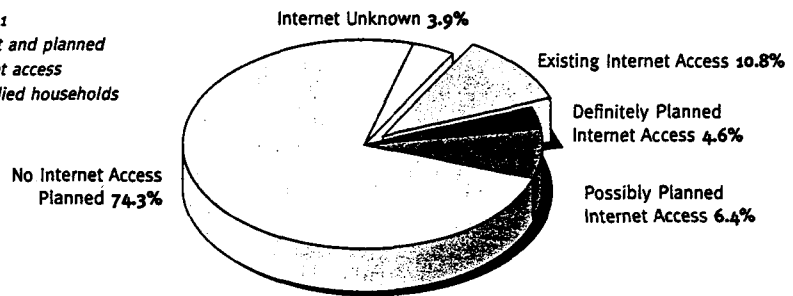
◆ **Shopping habits**

Average households in the Vienna area buy groceries three times a week in supermarkets and spend ATS 454 (US\$ 38) each time. This sums up to a monthly amount for groceries of ATS 5,448 (US\$ 454).

◆ **Computer equipment**

Of the 483 studied households more than one third (37.6%) have a computer. Of these one quarter also owns a modem. About 8.5% of all interviewees plan to buy a computer within the next year and approximately 12% of all households want to have a modem as well.

Figure 1
Current and planned Internet access of studied households



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◆ **Internet usage**

Access to the Internet is one crucial prerequisite for online shopping. This study shows that 10.8% use the Internet and another 11% plan to get Internet access within the next year (Figure 1).

When asked about the location of the Internet access (with multiple answers possible), interviewees mainly name work (65.4%) but also increasingly home (46.2%) as the place where they use the Internet. The results also show that very often once a person is linked to the Internet (either from work or from home) frequent usage follows. Accordingly, these interviewees evaluate their own Internet skills as very good. It could be concluded that a relationship between personal Internet access, frequent usage, and good Internet skills exists.

Services provided by the Internet are viewed differently by interviewees (Figure 2). Mainly products and services in the tourism area are very attractive. Electronic banking is another service interviewees are very interested in. Insurance products are less often named as possible online services.

◆ **Online shopping**

Buying goods electronically is conceivable for already 17% of households in the Vienna urban area (Figure 2). Marketing efforts can certainly increase this number. Especially younger and better educated interviewees are more inclined to use online shopping. Additionally, entrepreneurs, small business owners, free lancers, as well as computer and Internet users like the idea of electronic shopping via Internet.

WU-Study, Nov/Dec 97. n=474 (Items asked separately)

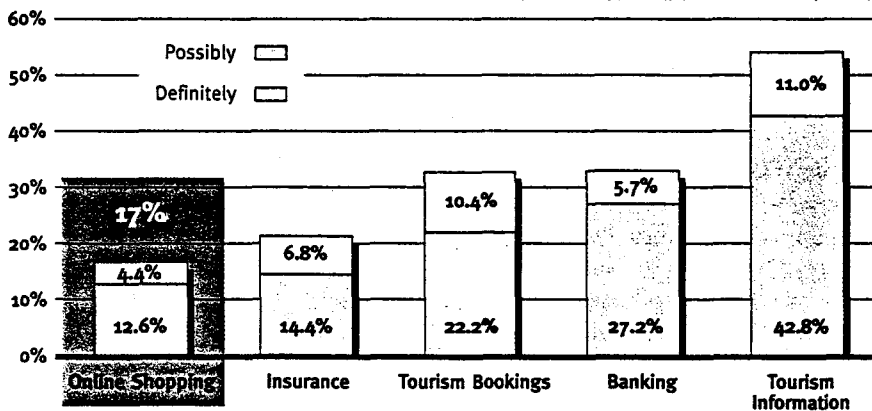


Figure 2 Interest in services provided by the Internet

When asked about products to order over Internet, interviewees prefer cheaper and more "predictable" goods like compact discs, books, videos, and gifts. Hardware, software, sporting goods, and clothing are less likely to be bought online in Viennese households (Figure 3). One explanation might be the need of interviewees for service and advice before buying these products.

Since special attention was paid to grocery shopping in this study, we specifically asked about the intention to buy goods of this category via Internet. About 10% of all interviewees consider buying groceries online (Figure 3). They would mostly order durable goods like beverages, cans, cleansers, frozen products, and hygienic items. Fresh produce and perishable groceries (e.g. bread, milk products, meat, fruit, vegetables) are less likely to be ordered by households in the Vienna urban area. This result shows that the aspect of getting products delivered as well as the missing experience of interviewees with ordering fresh groceries online influence their electronic shopping plans and could change over time.

Another set of questions assessed the perceived advantages and disadvantages of online shopping. As a result, interviewees see the major benefit of online shopping in factors of convenience. They name the possibility to save time and the independence from store hours as major ad-

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vantages of buying groceries over the Internet. Additionally, the Internet allows to compare prices easily and offers up-to-date product information.

The main disadvantage of online shopping in Viennese households are high telephone costs. New and much cheaper fees and tariffs for online services provided by the public Austrian telephone company established at the end of 1997 could change this problem of online shopping. Other disadvantages of Internet shopping perceived by interviewees are needed Internet skills and computer equipment, problems with complaints, high costs for delivery and inferior quality of delivered products.

MARKET POTENTIAL FOR ONLINE GROCERY SHOPPING

The results of this study point to a potential for online grocery shopping in the Vienna area. Predictions of future markets for this new business and calculations about the market potential can be done by analyzing the interviewed households of this study. For this prediction we used two results. It is important to include the number of interviewees (Figure 3) who intend to buy groceries online (9.9%) and the number of households (Figure 4) who are at least planning to buy the necessary computer equipment (44.1%). This group can be regarded as consisting of potential online customers. In our sample more than half (55.9%) of the interviewed households fail to meet these minimum requirements.

WU-Study, Nov/Dec 97. n=474 (Items asked separately)

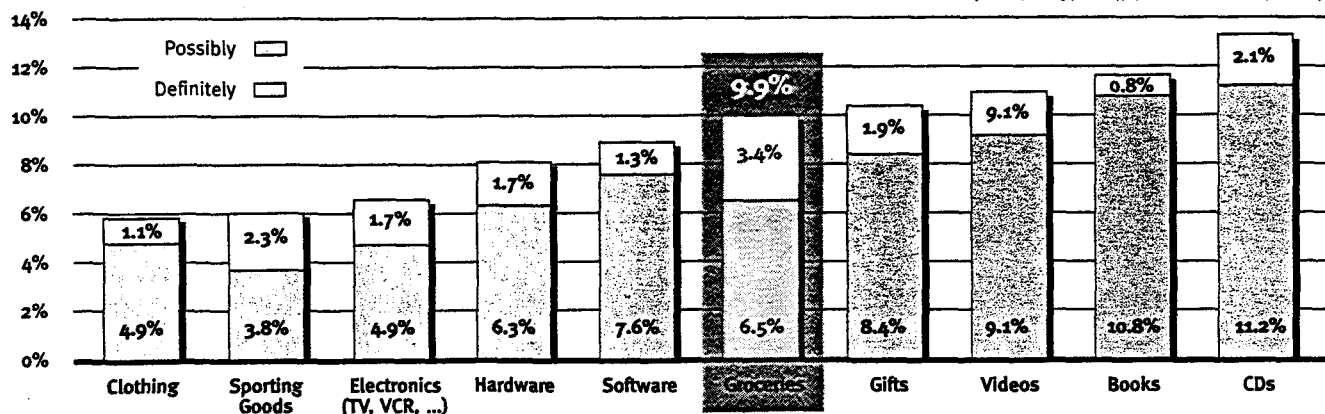
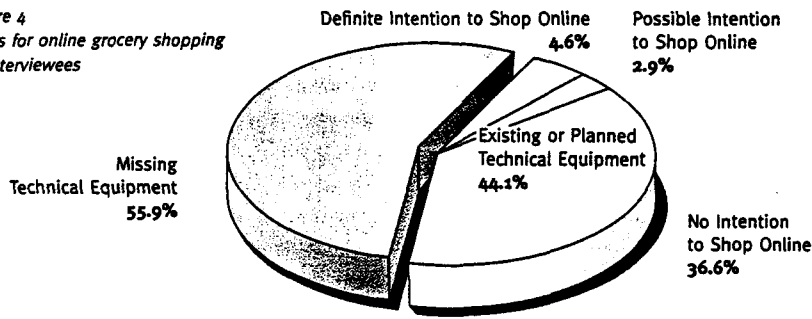


Figure 3 Interest in online shopping by products

FOCUS THEME

Figure 4
Plans for online grocery shopping
of interviewees



Within those households meeting the minimum requirements 4.6% expressed their definite intention to shop groceries online and 2.9% possibly want to electronically buy these goods in the future (Figure 4).

Additionally, we asked how often interviewees would order groceries online. Taken the results from interviewees with definite and possible intentions to shop via Internet together (7.5%), this group on average considers future online shopping of two orders per month. The average

amount spent online for shopping groceries by each household will be ATS 731 (US\$ 60) per order or ATS 1,462 (US\$ 120) per month. Potential online shoppers would pay up to ATS 65 (US\$ 5.5) for delivery.

In order to calculate the potential for online grocery shopping in the urban area of Vienna, we used these results and projected them for the whole population of the Vienna area by using the real number of households from the Austrian Statistical Yearbook 1996 (Figure 5).

Figure 5 shows that the monthly potential for online shopping in the food market could be roughly 8,9 million US\$. This would predict a yearly market potential for electronic grocery shopping via Internet of approximately 107 million US\$ in the urban area of Vienna.

A more conservative estimation would be to include only those interviewed households with a definite intention to use the Internet for grocery shopping in the near future (4.6%). Based on this number, the market potential would still reach 65 million US\$ per year in the Vienna area.

CONCLUSION

This study shows that there is a potential market for selling groceries over the Internet in the Vienna urban area. With the steady diffusion of telecommunication infrastructure in this region, better computer equipment and Internet access of households, cheaper telephone rates, more experience of customers with stores delivering goods, and marketing efforts of companies in the grocery business informing customers about new services, online shopping could become an attractive and lucrative alternative for buying and selling groceries in the near future.

Subgroups of interviewed households	Percentage of interviewed households	Projection number of households in the urban area of Vienna	Projection of monthly spending volume average amount: ATS 1.462
"definite intention to shop online"	4.6%	44,772	ATS 65,456,664 (US\$ 5,455,000)*
"possible intention to shop online"	2.9%	28,226	ATS 41,266,412 (US\$ 3,439,000)*
"no intention to shop online"	36.6%	356,229	-
"missing technical equipment"	55.9%	544,076	-
Total	100%	973,303	ATS 106,723,076 (US\$ 8,894,000)*

Figure 5
Market potential
for online grocery shopping

*Average Approximate Exchange Rate 1998: 1 US\$ = 12 ATS