

GROCERY SHOPPING FOR THE ELDERLY AND DISABLED: FINNISH EC EXPERIMENTS

BY JUKKA HEIKKILÄ, JUKKA KALLIO, TIMO SAARINEN, AND VIRPI KRISTINA TUUNAINEN,
ELECTRONIC COMMERCE INSTITUTE, HELSINKI SCHOOL OF ECONOMICS, FINLAND*

INTRODUCTION

The 1990's represent a period of extensive technological, deregulatory, and commercial change in the information systems and telecommunications (ITC). The newly emerged information superhighway serves as a platform to Internet based business, and to a wide range of social services which can contribute to the quality of life (STAKES 1997). The ageing population and privatisation of social services (Rytönen 1995) may also provide new Internet based business opportunities.

The technology is readily available to the Finnish citizens: most companies and many households are linked to the Internet (EC Finland, 1998). More than one third of households in Finland already have computers, and host to population ration is 88.11 per 100 000 habitants, the highest in the world (TELMO 1998). The density of servers and capacity of telecommunications lines are estimated to be high enough to serve the population. Yet, the services on the networks are neither up to the technological possibilities (Nevalainen 1998), nor up to the specific needs of the customers (Puirava 1997). In this article we report Finnish trials on the possibilities of electronic commerce (EC) in home care of the elderly and disabled people. The question remains, nonetheless, how capable or willing the elderly people, or their helpers, are to use ITC.

WELFARE SERVICES CLUSTER

Like most Western countries, the Finnish society is committed to take care of its elderly and disabled people. Traditionally the emphasis has been on institutional care, that is, hospitals and old age homes. However, during the recent years the trend has been to keep the elderly and disabled at home, or with their families as long as possible (Ministry of Social Affairs and

Health 1996a). Independent living and habitation in their own homes is what most elderly people want, and it is considered to be more cost-efficient for the society (Ministry of Social Affairs and Health 1997). At the same time the patients are returned from hospitals to their homes sooner than before.

**Jukka Heikkilä*

(heikkila@hkkk.fi) is Junior Research Fellow of the Academy of Finland at Helsinki School of Economics. His current research focuses on the problems of adopting, implementing, and integrating innovative technologies to support business processes.

**Jukka Kallio*

(jkallio@hkkk.fi) is researcher at the Electronic Commerce Institute. His research interests include electronic commerce, logistics, and services.

**Timo Saarinen*

(saarinen@hkkk.fi) is Associate Professor of Information Systems Science at HSE. His research interests include the economics and management of information systems with an emphasis on organisation, marketing and logistics applications, competitive evaluation and risk management of systems development.

**Virpi Kristiina Tuunainen*

(tuunaine@hkkk.fi) is researcher at the Electronic Commerce Institute. Her research focuses on EDI, electronic commerce and economics of IS.

All this has created an increased demand for home helpers. Home helpers are trained persons who visit their customers regularly, usually once or twice a week. They take care of both physical and mental health of their customers, while also performing some common house-keeping tasks, such as cleaning, doing dishes, and cooking. Also, if the customer is not capable of doing his daily shopping (i.e., groceries, and products with reasonably low unit prices (Kasso 1994)) himself, the home helper does them for the customer.

This home help is most often provided and arranged by the municipalities, and funded mainly with tax income. Increasing tax rates to fund the public expenditure have made citizens well aware of the costs of the social care.

As the report of the Ministry of Social Affairs and Health (1997) notes:

"The growth in social expenditure would have been even more rapid if changes had not been made in the social protection system. Municipalities began to cut costs for social services and health care in 1992. The government also introduced a number of savings measures, lowering the level of certain benefits..."

There is an increasing need for competent personnel to support out-patients, elderly and disabled people at their homes (Ministry of Social Affairs and Health 1996b). The need for such help is estimated to explode in the near future as the large post-war generations retire at the turn of the century. Social care costs are cut back, and this tendency is likely to continue as the economic dependency ratio is getting worse, closer to the European average. Unfortunately, the consequences of cost cutting are just the opposite to the needs of the elderly and disabled people.

Under the heavy pressure to cut costs and simultaneously increased need for additional social services, the work of the home helpers must be made more time efficient.

CURRENT RETAIL SERVICES DO NOT MEET THE NEEDS

For the past three decades the primary trend in Finnish daily consumer goods industry has been to increase the floor-area of the outlets by building large malls and hypermarkets at the junctions of motorways (Koski, et al. 1995). In 1980 there were almost 10,000 stores in Finland; today there are only about 5,000 left, and the number is still expected to drop down to about 3,500 (Ritakallio and Vuorenhela 1998). The number of grocery stores per 1000 inhabitants was quadruple in France and double in Germany compared to Finland in 1995 (Rasmus 1995), whereas the average floor area per store in both France and Germany was half of the Finnish average.

The market is dominated by self-service outlets, which do not necessarily serve the needs of the elderly and disabled (Spåre and Pulkkinen 1997). Furthermore, as the neighbourhood shops are disappearing, the elderly people that could do their shopping by themselves, find the travelling to the hypermarkets too strenuous (Spåre and Pulkkinen 1997; Ritakallio and Vuorenhela 1998). Thus, the home helpers are spending increasing amount of their time (currently already as much as 20-30% (Dahlberg and Noroma 1996)) in doing shopping for their customers. New kinds of services, such as meal deliveries (Airaksinen 1992), can help to ease the time pressures of the home helpers, but do not overcome the need to do grocery shopping.

In our recent study (Kallio, et al. 1997) we interviewed experts from the supply side (current wholesalers and retailers of groceries, as well as potential IT and logistics service providers) of Finnish grocery industry. The second most often mentioned potential customer group for electronic commerce of groceries was the elderly and disabled people. The people in this group are not likely to spend large amounts of money on anything, neither are they computer literate nor innovative consumers. The modest commercial potential of this customer segment is compensated by the potential benefits in terms of the cost and quality of social care.

REFERENCES

Airaksinen, L., (1992). "Vanhusten ateriapalveluun tarvitaan uusia ideoita", (New ideas needed for organising the meal services for the elderly), *Metos-uutiset*, 1992:1, pp. 4-7 (in Finnish).

Dahlberg, R. & Noroma, A., (1996). *Kauppapalveluprojekti sekä sen vaikutukset vanhusten elämään ja hoitajien työhön, (Grocery shopping service -project and its effect on the elderly and on the work of the home helpers), unpublished report, Espoon terveydenhuolto ja sosiaalialan oppilaitos, 1996 (in Finnish).*

EC Finland (1998). *Elektronisen kaupankäynnin barometri 1998 (Barometer of electronic commerce 1998), Report for members, Electronic Commerce Finland (in Finnish).*

Kalakota, R. & Whinston, A. (1997). *Electronic Commerce: a manager's guide, Addison Wesley Longman, Inc., 1997.*

Kallio J., Saarinen T., & Tuunainen, V.K., (1997). *Elektroninen kaupankäynti päivittäistavarakaupassa - Potentiaaliset kuluttajaryhmät, jakeluratkaisut, rakenteet ja työllisyysvaikutus, (Electronic Commerce in Grocery Shopping - Potential consumer groups, forms of delivery, structures and employment effects), LTT Series B 137, Helsinki, (in Finnish).*

Kasso, T. (1995). *Kauppa yhdyskuntasuunnittelussa, (The role of commerce in regional planning), Offset-Koppinen Oy, Helsinki, (in Finnish).*

To summarise, the current, inarguably efficient retail system does not take the needs of the elderly and disabled into account properly. This is an example of the myriad of problems that are expected to be relieved with ITC under decreased funds for the services for the ageing population (Ministry of Social Affairs and Health 1996). Any relief in the burden of daily shopping may make

Koski, K. & Lahti, P. & Luukkanen, A. (1995). *Kauppa suuryksiköt ja kunnallistalous: Tutkimus kuuden suuryksikön vaikutuksista kunnallistalouteen Helsingin, Tampereen ja Turun kaupunkiseuduilla, (Hypermarkets and Economy of Municipality: A case study of the influence of six hypermarkets in three cities Helsinki, Tampere and Turku), VTT tiedotteita 1684, Valtion teknillinen tutkimuskeskus, 99 pages + attachments, (in Finnish).*

Ministry of Social Affairs and Health (1996a). *Tietotekniikan hyödyntämisstrategia, (IT Utilization Strategy), report of the task force of the Ministry of Social Affairs and Health, 29.2.1996, (in Finnish).*

it possible for the home helpers to concentrate on duties they are hired and trained for, and for the elderly to gain access to wider selection of daily commodities.

TRIALS IN EC OF GROCERIES FOR THE ELDERLY AND DISABLED

Vuosaari service is a part of EU funded Equality project. It is, aimed at developing shopping services for the elderly and disabled with the help of ITC. It is currently serving about 70 customers in Helsinki. Before the trial most home helpers made 1-4 daily trips to a local grocery store, each trip taking on average 30 minutes, altogether two hours a day. Now, when the home helpers get the shopping lists from their customers (a couple of times a week), they phone the orders to the regional office of the social services. There they are entered into the Internet application of a local supermarket. Next the orders are transmitted to Ateriaali Ltd, a private catering company that picks up and delivers the groceries to the elderly. Ateriaali Ltd is the trusted third party that handles the payments as well. The basic idea of town Valkeakoski trial is roughly the same as with Vuosaari-project, but it is not a private entrepreneur, but the Finland Post Ltd that delivers warm meals and the orders of groceries from a local supermarket.

Ministry of Social Affairs and Health (1996b). *Vanhuspolitiikkaa vuoteen 2001: Suomen vanhuspoliittisen tavoite- ja toimikunnan mietintö*, (Social Policy For the Elderly till 2001), Oy Edita Ab, Helsinki, 1998:1, (in Finnish).

Ministry of Social Affairs and Health (1997). *Trends in Social Protection in Finland, publications of the Ministry of Social Affairs and Health*, 1997:1.

Nevalainen, R., (1998). *Toimijat tietoyhteiskunnassa, Käytännön kehityksen kuva kohdemaissa*, (Players in the Information Society, Picture of the practical development in target countries), publications of SITRA No. 166, Helsinki, 1998, (in Finnish).

Puirava, M., (1997). *Kuluttajat ja multimediapalvelut*, (Consumers and multimedia services), *Digitaalisen median raportti 1/97*, TEKES, 1997, (in Finnish).

Rasmus, T., (1995). *Kauppa 2010 – Kaupan toimintaympäristö ja rakenne*, (Retail 2010 – Operational environment and structure”, Ministry of the Environment, Report 10, 1995, (in Finnish).

Ritakallio, V.-M. & Vuorenhela, T., (1998). *Päivittäistavarakaupan keskittymisen sosiaaliset vaikutukset – tapaustudkimus*, (The Social Consequences of the Concentration of Grocery Outlets), University of Turku, Department of Social Policy, Series B:18, 1998, (in Finnish).

The most advanced service can be found in Eastern Finland. In the town of Joensuu, the service has been taken one step further: Internet PCs, which are located in the blocks of service flats for elderly people, are used by the home helpers to key in the orders to the computer of the local store. The shop receives the order, prints it out in EAN-codes, picks up the goods, reads the codes, and adds the bill to the customers' account. The local baker delivers the packed goods to the customers.

Rytkönen, P., (1995). *“Yksityisen palvelun merkitys kasvanut nopeasti sosiaalipalveluissa”*, (The Importance of Private Sector in Social Services is Growing Fast), *Tietoaika*, No. 9, 1995, pp. 8-9, (in Finnish).

Spåre, H. & Pulkkinen, M., (1997). *Päivittäistavaroiden kauppapalveluiden koettu saavutettavuus*, (Perceived Access to Grocery Shopping Services), LTT Series B 139, Helsinki, (in Finnish).

STAKES – National Research and Development Centre for Welfare and Health (1997), *“INCLUDE, INCLUSION of Disabled and Elderly people in telematics, TELEMATICS project 1109”*, <http://www.stakes.fi/include/>

TELMO ry – The Finnish Association for Interactive Network Services (1998), <http://www.telmo.fi/telmo/tilasto/nwhpa.htm>.

The experiences show that any improvement in the logistics is welcomed. For instance, in an experiment in the City of Espoo nearby Helsinki, the home helpers went to the shop, and picked up the goods for a number of customers in one trip to the shop, instead of doing a separate trip for each customer. The shop owner provided the delivery of the goods for free to the homes of the home helpers' customers. Already with this experiment, without any ITC support, the home helpers have been able to halve the shopping time, on average from 12 to 6 hours per week.

DISCUSSION

The best known examples of EC of groceries (for instance Peapod in the U.S. and ruokaNet in Finland) have been developed primarily for the wealthy end-users (see e.g. Kalakota and Whinston 1997). Nonetheless, the population of all European countries is ageing and demanding high quality welfare services, while the public spending is being cut back. The society must be able to produce the services of the welfare sector more cost efficiently. The Finnish trials show that substantial cost savings can be achieved and the side

effects of concentration of grocery retail outlets can be compensated by the introduction of EC. Locally it creates new business opportunities for a number of different service providers (such as common carriers, neighbourhood stores, and catering services). Currently the supplier can benefit from better resource levelling during the slow hours and permanent customer relationships. The elderly and disabled can gain wider selection of groceries and additional social contacts.

Without exception, successful EC trials for the elderly have been a result of co-operation among the municipality, social workers, suppliers, and vendors. Should the EC of groceries develop through the support of the society or be driven by the market forces? In the light of early experiences from the trials, it is likely that these two forces are not contradictory but complementary. In addition to retail of groceries, EC technologies and delivery channels can be used to bundle together also other services for the elderly and disabled, such as telemedicine, banking and communication with e.g. the tax authorities. On the other hand, the new EC channel and related services can be offered to other customer groups, e.g. time pressured, suburban commuters, whose needs are largely different from the customers of the social care. In any case, improved information on the preferences and scheduling can lead to significant efficiency improvements in logistics.

Although the elderly do not necessarily have adequate equipment or skills to shop online, it is worth while to develop the EC services with assistance of the home helpers and easy-to-use technical arrangements (e.g. a call centre). This way the logistic advantages can be realised even before the home helpers are properly trained and equipped, or before the more technically capable generations come to retirement age.