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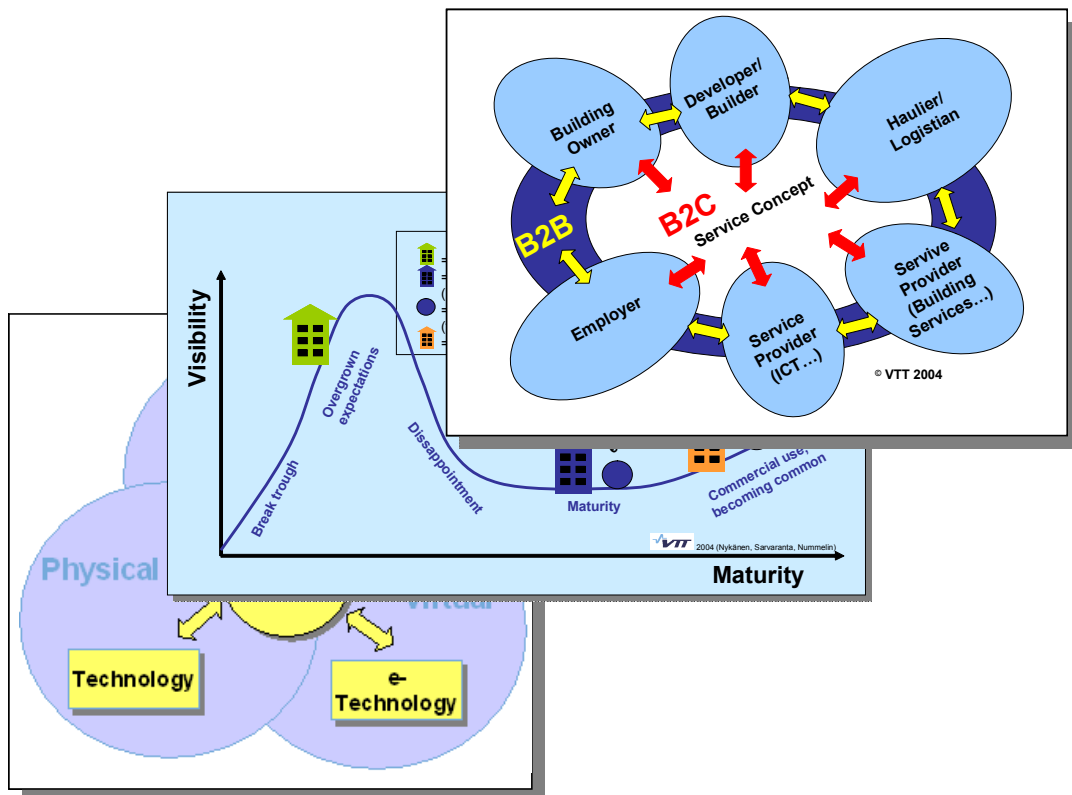
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Esa Nykänen, Leena Sarvaranta &
Johanna Nummelin

Home Service Concept

| From User Needs to Services

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Esa Nykänen, Leena Sarvaranta & Johanna Nummelin
VTT Building and Transport



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VTT, Vuorimiehentie 5, PL 2000, 02044 VTT

puh. vaihde (09) 4561, faksi (09) 456 4374

VTT, Bergsmansvägen 5, PB 2000, 02044 VTT

tel. växel (09) 4561, fax (09) 456 4374

VTT Technical Research Centre of Finland, Vuorimiehentie 5, P.O.Box 2000, FIN-02044 VTT, Finland

phone internat. + 358 9 4561, fax + 358 9 456 4374

VTT Rakennus- ja yhdyskuntatekniikka, Kivimiehentie 4, PL 1803, 02044 VTT

puh. vaihde (09) 4561, faksi (09) 456 4815

VTT Bygg och transport, Stenkarlsvägen 4, PB 1803, 02044 VTT

tel. växel (09) 4561, fax (09) 456 4815

VTT Building and Transport, Kivimiehentie 4, P.O.Box 1803, FIN-02044 VTT, Finland

phone internat. + 358 9 4561, fax + 358 9 456 4815

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Keywords home services, home service concept, business models, e-business, building, real estate, supply chains, delivery, stakeholders, customers

Abstract

Until now, services and technical devices have been developed separately but the situation is gradually changing. Services are more often seen as combinations of services and physical products. This will lead to integrated services for specific customer. The purpose of this interview survey was to collect information on stakeholder needs from four countries to be used for conceptual development of an unmanned home delivery system pilot. Development of such a home service concept has to be based on identified needs, potential usage and prospective markets.

Home services with delivery require new operating models in the supply chain. The cost of home delivery is heavily dependent on service model used, market share and business size. The business and service models in supply chains are still not mature enough to start effectively. The challenge is to create new service concepts, which support different stakeholders' business. At present, different stakeholder interests are not in line to support common service concepts. There is an obvious risk for conflict of interests. The capability of creating good, sustainable business out of service seems to be missing. Well-defined, well-managed and open value networks with joint creation of value require a new way of thinking.

Home services and delivery can be supported by various stakeholders: building owner, developer/builder, inhabitant, haulier/logistician, service provider, employer and municipality. In order to create service concepts for win-win-win situations, all stakeholder interests should be at least partly in line with the concept. If a stakeholder is part of a true value network, there are both B2B and B2C issues involved and they should not stand in conflict with each other. This means adapting your own business interests to the product & service concept instead of sub-optimizing your own business only.

A general model of a user centered value network is introduced.

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Tiivistelmä

Teknologiatuotteita ja -palveluja on tavallisesti kehitetty erillisinä projekteina. Nykyisin palveluilla kuitenkin käsitetään yhä useammin palvelujen ja teknologioiden yhdistelmiä – halutaan tarjota integroituja palveluratkaisuja asiakkaille. Tämän tutkimuksen tavoitteena oli muodostaa näkemys keskeisten viiteryhmien tarpeista neljässä maassa, jotta voitaisiin luoda edellytykset uudentyyppisen kotipalvelukonseptin kehittämiseksi.

Kotikuljetuspalvelut edellyttävät uudenlaisia toimitusketjuja. Kotikuljetuspalveluiden kustannukset riippuvat yrityksen valitsemasta palvelu- ja liiketoimintamallista, markkinaosuudesta ja liiketoiminnan kokonaisvolyyymista. Tähänastiset liiketoiminta- ja palvelumallit eivät läheskään aina ole osoittautuneet kovin elinkelpoisiksi. Haasteena onkin luoda sellaisia uusia palvelukonsepteja, jotka tukevat usean yrittäjän tai sidosryhmän tarpeita samanaikaisesti. Nykyisin eri sidosryhmien intressit eivät kohtaa tarpeeksi tehokkaasti, jotta uusia palvelukonsepteja saataisiin markkinoille. Intressiristiriidat heikentävät kestävän palveluliiketoiminnan kehittymistä. Selkeästi määritelty ja hyvin toimiva arvoverkko edellyttää kokonaan uuden ajattelutavan omaksumista.

Sinänsä kotipalvelut kiinnostavat useita osapuolia: rakennuksen omistajaa, kehittäjää, rakennuttajaa, asukasta, kuljetusyrityksiä, erilaisia palveluntarjoajia, työnantajia ja julkista tai sosiaalisektoria. Jotta markkinoille voitaisiin tuottaa integroituja palvelukonsepteja, useiden osapuolien intressien pitäisi kohdata, ainakin osittain. Jos osapuolet ovat mukana aidossa arvoverkossa, B2B- ja B2C-suhteissa ei voi olla konflikteja. Tällaisessa tilanteessa osapuolten on sopeutettava omat liiketoimintatavoitteensa yhteisen tuote-palvelukonseptin mukaisesti sen sijaan, että päätyisivät ainoastaan oman liiketoimintansa osaoptimointiin. Tällainen yhteistyö ei onnistu ilman ajattelutavan muutosta.

Tässä tutkimuksessa luotua yleistä mallia voidaan hyödyntää edelleen kehitettäessä käyttäjäkeskeisiä tuote-palvelukonsepteja.

Preface

This report is part of the HOMEDOOR Project (G1RD-CT-2001-00493, e-Commerce Logistics for Homes, 2001–2004), funded by the European Commission and Project Partners from four European countries (Finland, Germany, France and Spain). The Project was carried out at European level and this report is edited based on the interviews and work done in all partner countries.

The aim of the Project was to develop concepts for new product innovations and systems innovations to make home deliveries in multi-storey residential buildings easier – or possible. The key to the HOMEDOOR Project was in integrating existing and new buildings to the global e-commerce network by providing the logistics solution for multi-storey and other buildings. Linking to service provision is expected to give growth impulses to traditional building business sectors in retrofitting and modernisation.

Conceptually, HOMEDOOR could be a way to improve service delivery processes and hence quality of living environments for all income and age groups (particularly the elderly). The final system/equipment must be cheap, secure and well managed.

As a whole, the Project enabled VTT to gain new understanding and methodological competence in accessibility, user needs, and integrated service-driven modernisation of buildings. VTT is focusing on R&D and innovation services within the framework of sustainable development of technologies. We are expecting new types of innovations to emerge in future: combinations of technologies for user-inspired and service-driven social innovations. In the short run, results from the Project will enhance and support our dialogue with authorities and companies.

In the long run, VTT also gained invaluable, practical insight in conceptual development. This new form for organising innovation work is predicted, by contemporary business strategy thinking and theories, to be the key for joint-creation of value for users (customers, citizens); this will be indispensable for sustainable technologies and corporate social responsibility to become a reality in business globally. However, HOMEDOOR Project showed us that this approach, at operational level, is far from easy. It is more about the mindset and vision of key actors than a “linear” approach to developing single technologies or products.

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Abbreviations

B2B	Business to Business
B2C	Business to Customer
DDM	Direct Delivery Mode
EGS	Electronic Grocery Shopping
HTTP	Hyper Text Transport Protocol
ICT	Information and Communication Technologies
PPP	Public-private partnership
SSL	Security Socket Layer
SMS	Short Message Service
UI	User Interface
WAI	Website Accessibility Initiative
WAP	Wireless Application Protocol
WWW	World Wide Web

1. Introduction

1.1 Emerging home service concepts and business models

The real estate and building cluster is partly evolving into a service business where physical facilities are considered as a part of the service system. New ways to deliver services, at global and regional levels, together with customer focus, have formulated new partnerships. However, much research work has to be done concerning services within the real estate cluster [Nummelin 2003]. Until now, services and technical devices have been developed separately but the situation is gradually changing. Services are more often seen as combinations of services and physical products. This will lead to integrated services for specific customers. Home services with delivery require new operating models in the supply chain. The cost of home delivery is heavily dependent on service model used, market share and business size. The business and service models in supply chains are still not mature enough to start effectively.

1.2 Where is the gap?

Applications of new technologies have mainly been directed to new buildings but new technologies for service provision should also be applied in old housing stock since new construction production is decreasing in Western Europe. New services to residential buildings are sought after, as the population is aging.

Apparently, home services are needed in future. Potential customer segments are families, wealthy adults seeking high quality services, elderly and disabled people. But to create efficiency and turnover, services need a large customer density, which means that services should not be created for special groups but for everybody [Andelin 2003]. The funding of services can be public, private or there can be a public-private partnership. There are three main interests to invest in home services and delivery: (1) services for inhabitants, (2) cost savings for haulier/logistician and service provider, and (3) new services affecting on building image for builder/developer.

There is a fundamental challenge in new-product development, which involves taking a vague concept for a new service or product that a particular market or customer segment will find valuable and turning it into an actual ongoing business proposition. Multiple individuals, functions, and increasingly even separate companies contribute to the concept's realisation.

1.3 State-of-the-art when the survey began

In the state-of-the-art of the original HOMEDOOR project proposal (2000) the following problem was stated: Logistics gap at the consumer end is slowing down development of electronic commerce in Europe. On the other hand, electronic commerce is growing rapidly in societies where consumers and citizens have easy access to ordering devices and networks like Internet, SMS messaging, WAP-phones etc. Electronic grocery shopping (EGS) with direct delivery mode (DDM) counts now less than 2% of consumers' expenditure in Europe. In the US, the corresponding intensity figures are higher (10%, 1999). The evolution is towards DDM as it provides the highest supply chain savings for e-commerce deliveries.

When HOMEDOOR project was in the planning phase, expectations towards e-shopping and services were going high (Fig. 1). After the project start the overall status of e-shopping has been gradually moving through disappointment towards the mature part of the hype curve [Tekniikka ja Talous 2002]. Most of the HOMEDOOR interviews with stakeholders (Finland, Sweden, France and Germany) were carried out during the “after disappointment phase”. Findings from the stakeholder interviews were further elaborated in a study on services and business models [Andelin 2003].

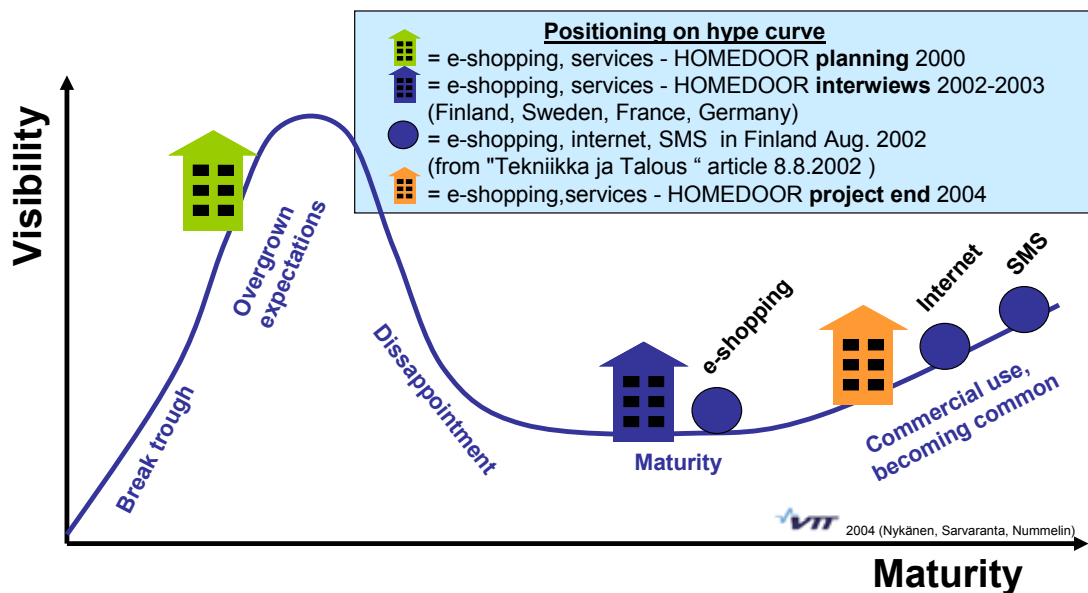


Figure 1. Technology hype curve showing e-shopping and services to move from high market expectations through disappointment to a more mature section during the HOMEDOOR project span 2000–2004.

Now, at the end of the HOMEDOOR project, general market trends are showing increased activities of e-shopping and related services [Homedoor 2004].

1.4 Recent state of e-shopping

Internet shopping as a whole is changing from hype to a more real activity. Shopping features have been investigated in many countries during recent years. Questionnaires and statistics show trends on best seller product groups. e-shopping is still in the early development phase and shopping profiles can change a lot when the shopping becomes more popular. Typical e-shopping products from recent years (Top 5) are listed in Table 1. One can clearly see that differences between Finland and France in the Top 5 are minor. Clearly there are no daily goods in the list. It is obvious that the general hype of Internet related issues is not that strong in France. This has been explained by the fact that the French introduced *Minitel* long before Internet.

Table 1. Most popular e-shopping products in Finland [Suomen Gallup Web Oy 2002] and France [Steers 2002].

Top 5 Products in e-shopping	Finland (in 2001) * (in 2002)*	France (in 2000) *
1	Textiles & Shoes (24%) (28%)	Textiles (50%)
2	Books (23%) (24%)	CD's & Videos (41%)
3	CD's (20%) (18%)	Ordering magazines (39%)
4	Betting (4%) (17%)	Travel tickets (28%)
5	Travel reservations (8%) (12%)	Cosmetics (28%)

* The percentage of Internet shoppers ordering a particular product.

2. Interviews

Objective

The purpose of the interviews was to collect information of stakeholder needs to be used for the conceptual development in the HOMEDOOR project. One of the project workpackages was designed for planning and making a pilot for an unmanned delivery (box, system, etc.). Development of the system (“*HOMEDOOR device*”) has to be based on identified needs, potential usage and prospective markets.

Interviewed persons

We selected a group of persons in four countries to be interviewed. Thus far, a statistical coverage has not been available because of the limited amount of information. However, the results provide some good estimates. The objective of the interviews was to establish a ground for understanding user needs and how to link these with services provided by different stakeholders.

Persons interviewed were professionals with practical insight on the topic. This professionalism could be one reason why many of the answers actually became questions!

A list of interviewed persons is given in Annex 1.

Questions

The question lists were generated in workshops with project partners. This working method made the question lists relatively long (70 questions). The idea, however, was that the interviewer could choose questions to be presented in interviews. The list was merely a general guideline for discussion topics, for picking up questions and for categorising and analysing answers, accordingly. The numbered list (with numbers 1–70) made it possible to compare different answers within a very complex playground.

Interview topics were arranged to fit in the general conceptual framework (Fig. 2), generated and formatted in the project workshops. The framework included *Physical World*, *Virtual World* and *World of Needs*. Accordingly, there are *Technology*, *e-Technology* and *Markets*. *User* (i.e. customer needs) is in the centre of focus.

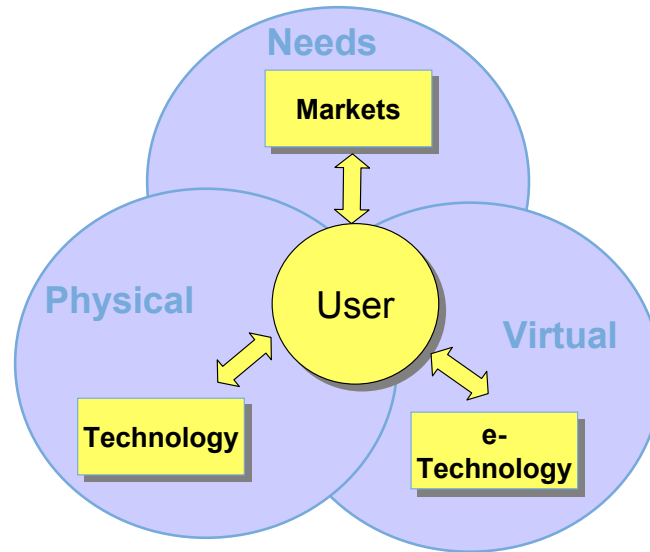


Figure 2. HOMEDOOR framework, within a complex playground.

Related projects

At the same time, three related projects were carried out in Finland, which are worth noting. In the survey on *"Smart Home"*, consumer expectations and interests were investigated [Leppänen et al. 2004]. Altogether 1800 persons were interviewed. Of those interviewed, 6% were very interested in ordering food to a *"Smart Home"*. The most important features related to a *"Smart Home"* were related to safety, security and entertainment. Four "tribes" were identified in the survey:

- Technology Oriented People
- Home Centered People
- Practically Oriented People
- Comfort Seeking People.

The biggest group (in Finland) comprised Home Centered and Practically Oriented People. These two tribes are interesting in terms of market penetration of any consumer product or service.

Punakivi [2003] made an extensive study on alternative home delivery models for e-grocery business in Finland and Yrjölä [2003] studied supply chains for e-grocery shopping. Punakivi, Yrjölä and Kämäräinen [Laurila 2003] have calculated that profitable e-grocery shop must sell more than 200 000 €/year/km². This would correspond a customer base of 25–35 families with 4 persons, who are 90% loyal to the e-grocery service. In Finland, this type of potential can be found in the 30 biggest cities.

2.1 Customer needs

Customer related questions are at the very core when trying to understand customer needs. All those interviewed were interested about the potential customer or user. Answers to these questions varied according to the professional role of the person interviewed. Those already in the business were looking at the very present situation. On the other hand, those not yet in a daily e-shopping business, were able to identify a totally different potential. For example, *a box* (delivery system, device etc.) is claimed to affect the DDM dramatically [Punakivi 2003, Yrjölä 2003].

Preliminarily, market segments to be studied for the HOMEDOOR had been identified in an earlier Project workshop (Table 2).

Table 2. Target market for a HOMEDOOR delivery system.

Target market	Funding base	Sortiment
Low-income elderly (“driver client”)	Public	Everything
Middle-class families with children (“follower client”)	Public-private	Bulk (toilet paper, flour, soft drinks ...)
High-income elderly		Bulk
High-income families with children		Bulk
Dinks (double-income no-kids)		Bulk...everything
“Wall Street” people	Private	Everything

2.1.1 Customer related questions

1	Who are/will be the users?
2	Characteristics of the user (age, persons living in the dwelling)?
3	Who will be the “driver client” / target client? Who will benefit most? (See: Table 1)
4	The habits of the users when going to shopping?
5	Why do users order deliveries at home? (easy to carry, impossibility to buy at “daily” hours)
6	Main products or categories that they buy?

7	What are the expectations and the requirements of the tenants / architects / Social Registered Landlords concerning the new services such as those connected to the e-commerce (retailers experience)?
8	Which kind of marketing would be acceptable by the user?
9	Ex. proactive marketing (sending messages with special offers)?
10	What home services are used for residents in multi-storey buildings?
11	Who is funding and what?
12	Who pays and how much for the additional service? (forwarding expenses)
13	Acceptance of additional costs by the customer?
14	Division of costs among the target group?
15	Who is the owner of the box?
16	Others?

2.1.2 Summary of customer related replies

The customer “profile” and the shopping (questions 1–6) shows following:

- Answers concerning customer type varied from “any group of income” to only DINK's.
- An important customer type was a family with two kids and both parents working.
- Two kids family with both parents working possesses a potential, ability and interest for learning new things and it has a high regard for free time.
- Another important customer type was elderly and disabled people in need of services and help with everyday life.

Expectations and systems used now (questions 7–10)

- Users have high expectations of safety and security (France, Finland)
- At present, delivery cost for manual delivery is about 5 €.

The Funding and costs of the reception box etc. (questions 11–16)

- Cost of manual shopping made by home-care person on behalf of elderly or disabled people (Finland) is about 10 € per delivery.
- In general, additional cost is hardly accepted. However, according to a study by Finnish Post people are ready to pay about 4 € for “end delivery”. Post order shopping has a historical background (no food/daily consumer goods).
- Some additional cost can be accepted in relation to the order value (Germany) but 85% of the trade is concentrated to the low price market.
- In experiment (Finland) the customer has paid fixed price for the delivery box (about 35 euros / month) including 2 deliveries per week.
- The owner of the box can be the owner of the real estate or a third party (example housing maintenance company). The Finnish Post considers itself a third party.
- Manual home delivery (no box) can mean a social contact!

2.2 Markets

All anticipated actors and stakeholders around the e-shopping issue are considered to represent the “*Markets*”. The aim is to achieve a win-win-win situation.

2.2.1 “Markets” related questions

17	Who (or how many) make up major part (80%) of the market?
18	Market shares?
19	Business opportunities? (WIN-WIN-WIN)
20	Reduced social costs?
21	Reduced delivery costs?
22	Opportunity to offer new services (Which services?)

23	To which extent is there a public interest in different countries? (Nordic countries, Spain, the others)
24	Expectations concerning e-commerce, especially e-grocery?
25	Is there an intention to build up or extend e-commerce business?
26	Are there existing systems that can reduce the costs?
27	Others?

2.2.2 Summary of “markets” related replies

Market shares and business opportunities (questions 17–21)

- Private customers are the major target group. Online shops with delivery are very rare, so far.
- Business opportunities are not regarded very promising, after disappointments with various experiments.
- In every case, a third party should take care /own the boxes.
- The municipality/society is proposed to be the customer of the HOMEDOOR.
- The ROI (60% savings vs. human intake) for the box is 6–13 years [Punakivi 2003]. On the other hand, same calculation with shared reception boxes gives 2–6 years.

Expectations and intentions (questions 22–27)

- Expectations are restrained and progress goes now step-by-step, after disappointments. The development in this area is now concentrated to improve some specific parts of the e-commerce chain e.g. storage, delivery.
- There seems to be enormous potential for building up any type of e-commerce because the cost of a server is “nothing” compared to the cost of a shop.
- Expectations of the customer can also be unrealistic (“instant order means instant delivery” is not true)

- Different players may actually be restructuring their business at the moment. Horizontal networks will transform into more permanent, vertical supply chains, or even virtual organisations.

2.3 Virtual

The “*Virtual*” here encompasses ICT-related issues, which are not a physical part of the building or logistics infrastructure. The call centre is included in “*Virtual*”. This is actually the section where the hype started from and hype was very strongly pointed out in the interviews. There are both questions and doubts. In general, the lack of trust is quite obvious.

2.3.1 “Virtual” related questions

28	How has the ordering been arranged? (call centre, go to shop, www, etc.)
29	User interface and portals (ordering platform)?
30	E-solutions?
31	Functionality, specifications?
32	How to arrange the information flow?
33	Experiences about how the order is really done?
34	Number and percentage of orders via telephone?
35	Using website (prevalence, difficulties, etc.)?
36	Orders for home deliveries, done in the shop?
37	Number and “classification” of claims and suggestions?
38	Others?

2.3.2 Summary of “virtual” related replies

System specifications and solutions (questions 28–30)

- Internet is a must but the fax and call centre could well be good second choices
- “Internet only!” can also be a strategy -but again- in case of problems, call centre should be available.
- Call centre is regarded as expensive but human and flexible.
- Portals have (technical) problems.
- Cost of technical solutions (tailored software) are still high. Who is ready to pay (invest)?

Functionality and the orders in practice (questions 31–38)

- Functionality of User Interface (UI) is not good. There can be major problems even when using a “good system”. It is hard to find a product especially if pictures of the products are missing.
- The systems are not user-friendly and interactive and they do not give enough feedback (for instance: customer wants to be sure that the order is accepted).
- The WAI (Website Accessibility Initiative) has to be used when designing accessible, easy to use ordering systems [Aragall et al. 2002].

2.4 Physical

The “*Physical*” here covers logistics, box dimensions and real delivery issues. The building itself is part of the physical infrastructure when discussing physical room available for any reception boxes. Also the shape or placing of “real property” can cause some problems when customers’ property is not near the street (which is the most efficient place from the delivery point of view). Customers may have to make an agreement (e.g. perpetual easement?) with neighbours and everything becomes much more complicated.

2.4.1 “Physical” related questions

39	How to provide the storage system for deliveries?
40	Which kind of system do the residents or the delivery companies prefer?
41	The delivery is packed in a “standard” hard box that can be stored inside the building?
42	The delivery inside bags is placed in the box in the recipients building?
43	What is the space available in majority of buildings?
44	What is delivered? Capacity need? Flexibility needs?
45	What is the extreme volume of the delivery?
46	What are the shape and weight of the articles etc.?
47	What kind of usability problems are expected especially concerning citizens with mobility problems?
48	The logistics chains?
49	Amount of orders per week and users?
50	Amount of orders that couldn't be delivered because there was nobody at home?
51	Which is the rate of home visits per delivery (is near 1 or higher)?
52	How long is the delivery time at home? (The time from shop to home and the time the delivery personnel stays at building)
53	Optimisation of space vs. optimisation of logistics? (Which will give faster payback?)
54	Is it retailer's duty to arrange the logistics?
55	Use of standardised systems in logistics chains? (Intelligent transportation systems i.e. boxes for cooling and heating to reduce the costs for e-grocery.)
56	Is the necessary logistics provided with own resource or with external service providers?
57	How should the organisation of the logistics be arranged?
58	The security of the deliveries?

59	Who are the distributors?
60	What is the distribution cost per delivery, per month, per shopping basket?
61	The BOX?
62	Will the lift and mailbox be insurable?
63	How are food regulations applied for cleaning and calibration of temperature devices?
64	What provision is being allowed for vandalism and miss-use?
65	Will the lift mailbox be able to be maintained by a 3 rd party (a maintenance company)?
66	Would recipients feel comfortable and secure delivering frozen food in an unattended system?
67	Should the box be optimised, so that it is never totally full?
68	Which kind of information about “box” state is needed? (empty or full)
69	Is it absolutely necessary to have temperature-conditioned boxes?
70	Others?

2.4.2 Summary of “physical” related replies

Shape, size and storage of the goods (questions 39–46)

- Ideas of reception boxes varied from “no box” (bags used) to idea that the box is identical with customer’s fridge (e.g. delivery comes to the “backdoor” of fridge)
- The cool chain is now taken care of from the storage to the customer. Cooled boxes are needed if the cold chain is going to survive using box reseption. (In Finland, also heating during winter is necessary.)
- The extreme volume of the (future) delivery varies from 16 rolls of toilet paper to skis (long) or “anything but furniture”. The dimensions are finally competing with normal car capacity and dimensions.

Usability, logistics, security and insurance (questions 47–70)

- Customers can have problems both with physical matters (placement of the box) and with the reception. Systems have to be easy for the notification, reception and acknowledgement (SMS).
- Logistics that is needed can be “all the way to the flat” or to the shared reception box in the building depending of the case.
- The logistics chain is anyway a major problem (and a major potential as well) because it hasn't been adapted to the e-commerce yet.
- The security and the insurance problems have to be solved at the same time as new innovative ways of using boxes.
- Only the major players can now arrange the logistics (economical basis) to serve e-shopping well.
- The situation of “nobody home” in attended reception makes a problem and causes expenses when it happens. Because a box has no “attendance” problems, “savings” can support box investment decisions.

3. Services

Numerous and different aspects, as indicated by our interview study, characterise the problematic situation any potential home service provider is facing. The service should meet the needs and requirements of various stakeholders. At the same time, the service should be economically feasible for the provider. Today, much reasoning goes in assuming common (social) savings “somewhere” and therefore financial support is sought from the social sector to set up service provision businesses (public-private partnership). Social innovations are needed and improvements are needed at practical level. A common vision cannot be reached without extensive dialogue between stakeholders.

3.1 Reception models

Various home service concepts and business models have been examined in more detail and are reported in a separate publication [Andelin 2003]. The biggest challenge in the home service supply chain is home delivery, since it is the most cost-intensive part in the supply chain. Possible scenarios for delivery concepts (picking up by customer from a collection point, private reception lockers, attended reception and integrated system) are compared in Table 3.

Table 3. Reception model comparison [Andelin 2003].

Reception model / action	Private home delivery	Picking up	Collection point	Private reception locker or box
Home delivery time window	Fixed delivery hours	Operating hours of the shop	Any time	Any time
Time used per customer	Long	Semi-long	Short	Short
Personal service	Yes	Yes	No	No
Final delivery point	Customer	Shop	Collection point	Reception locker or box
Customer's dependence	Has to be at home	Has to go to shop for picking up delivery	Has to go to collection point to pick up delivery	Independent
Investments in technology	No investments needed	No investments needed	Investments needed	Investments needed

3.2 Business models

































A business model links activities, actors and resources together, within and between stakeholders in buyer-seller relationships. According to the literature study [Andelin 2003] and interviews, home services and delivery can be supported by many different elements of interest from building owner, developer/builder, inhabitant, haulier/logistician, service provider, employer and municipality.




Furthermore, when taking a closer look at stakeholder interests the following statements can be made:

- One of the main reasons for investing in services is need for new and better services. New services are especially in the inhabitant's and haulier's/logistician's interest. In addition, new services are offering to all investor groups either new business opportunities, added value, or cost savings.
- The second focus point is cost savings. This is especially an issue for hauliers/logisticians and service providers. Hauliers/logisticians and service providers are looking for cost savings through new supply chains. They are expecting home shopping and delivery to intensify and accelerate business processes.
- The third focus point is the influence on building image. Image is important to building developer/builder, because accessibility, new services and technologies of building are making the building more attractive. Attractiveness increases demand and adds value.

These statements are visualised in Table 4. From the table we can clearly see that it is not easy to identify one single focus for all stakeholders. Different stakeholders have different interests. There is an obvious risk for conflict of interests. A challenge remains how to create service concepts, which support different stakeholder's business strategies.

Table 4. Focus points of potential investor interests [Andelin 2003].

Stakeholders	Building Owner	Developer/ Builder	Inhabitant	Haulier/ Logistian	Service Provider	Employer
<u>New service</u> •Chapter 2: Home services •Chapter 3: Stakeholders		 	   	  	 	
<u>Time saving</u> •Chapter 3: Stakeholders •Chapter 5: Business Logic					 	
<u>Cost savings</u> •Chapter 3: Stakeholders •Chapter 4: Technology and logistics •Chapter 5: Business Logic				  	  	 
<u>Affect on building image</u> •Chapter 4: Technology and logistics •Chapter 5: Business Logic	 	  	 			

 = Findings in literature
  = References to interviews
  = focus points

3.3 Value networks for product & service provision

In order to create service concepts for win-win-win situations, all stakeholder interests should at least be partly in line with the concept. Table 4 from the previous section clearly indicates the risk for conflict of interests between stakeholders. However, in case there is a common concept and a true value network, conflict of interests should be avoidable.

The interviews in this study support the fact that there are numerous arguments and expectations among stakeholders. If a stakeholder is part of a true value network, there are both B2B and B2C issues involved and they should not stand in conflict with each other. On the contrary, the good B2B supports B2C and vice versa. This means adapting your own business interests to the product & service concept instead of sub-optimizing your own business only. The idea of a user centered value network is visualised in Figure 3.

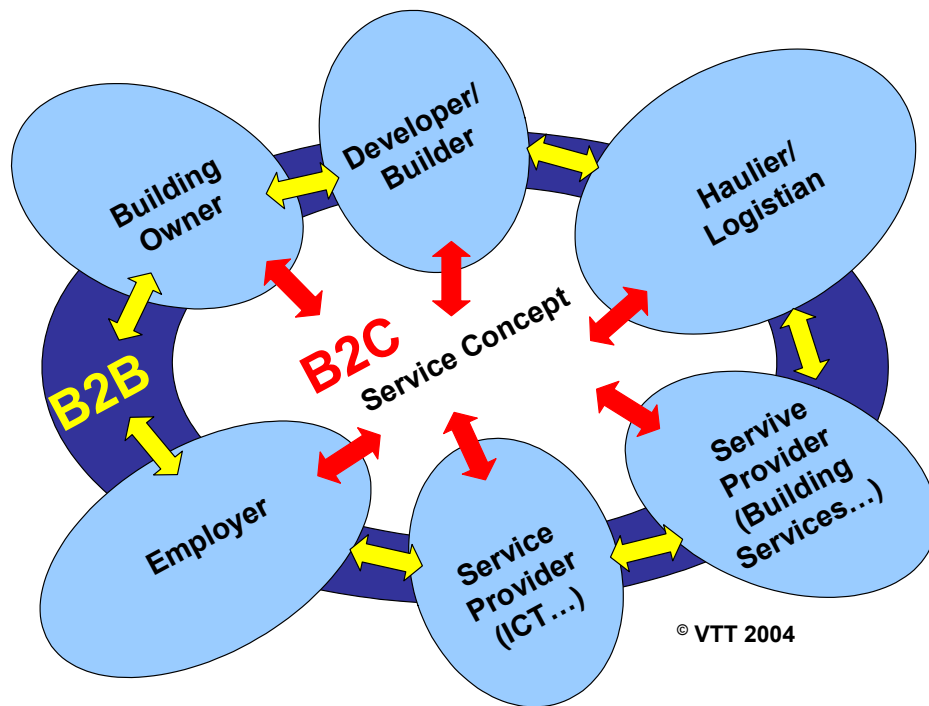


Figure 3. Open Product & Service Concept Based on Value Network.

The challenge is to create new service concepts, which support different stakeholders' businesses. The capability of creating good, sustainable business out of service seems to be missing. Well-defined, well-managed and open value networks with joint creation of value require a new way of thinking.

4. Summary

The number of interviewed persons in Finland, Sweden, France and Germany was totally 17. The interviewed persons represented many different roles in the field of e-commerce.

When discussing customer needs one of the targets was to identify potential customers for the HOMEDOOR device (unmanned home delivery system). Ideas about potential customer types varied. A common idea was a family with two kids and both parents working. This kind of family possesses a potential, ability and interest for learning new things and it has a high regard for free time. Another important customer type was elderly and disabled people in need of services and help with everyday life.

Expectations for the HOMEDOOR device and home delivery reveal structural problems. On the whole, people are not ready to pay for an extra cost. At the same time, the investment has to be paid back to the owner/investor. Additional cost can be accepted in relation to the order value (Germany) but 85% of the trade is concentrated to the low price market. In practice people pay about 5 € per home delivery (Germany) or 35 € per month including 2 deliveries (Finland, experiments). Cost of manual shopping made by home-care person on behalf of elderly or disabled people (Finland) is about 10 € per delivery. That sum can be used in investment calculations. Not only money counts – home delivery can even be a social contact! It came out clearly in the interviews that there should be a third party to own and/or maintain the boxes. Municipalities or “society” were proposed to be the customer or owner of HOMEDOOR. Investment payback time for the box is 6–13 years (60% savings vs. attended reception, Finland experiments), with shared reception boxes 2–6 years.

The expectations are restrained and progress goes now step-by-step, after some disappointments even though the cost of a server-computer is “nothing” compared to the cost of a shop. The Internet is a must but the fax and call a centre are good “second choices”. The call centre is human and flexible and does not have the same (technical) problems as portals. The User Interface (UI) causes most of the problems, e.g. it is hard to find a product, especially if pictures are missing. Moreover, interaction or feedback from the portal is not at the needed level.

Shape, size and the storage of the goods need closer examination and definitions. The cold chain is at present taken care of by the shop all the way to the customer door. Cooled boxes are needed if the cold chain is going to survive during box reception. The extreme volume of the (future) delivery varies from 16 rolls of toilet paper to skis (long) or “anything but furniture”. Customers can have problems both with physical dimensions (placement of the box is important) and the reception processes

(notification, locking etc). The logistics chain is a major problem (and a major potential as well) because it hasn't been adapted to the e-commerce yet. It was stated that only the major players could arrange the logistics to serve e-commerce.

Finally, “nobody home” in attended reception is a problem and causes expenses when it happens. HOMEDOOR devices (boxes) have no such delivery problems. This establishes an important competitive edge for HOMEDOOR.

At present, different stakeholder interests are not in line to support common service concepts. There is an obvious risk for conflict of interests. The challenge is to create new service concepts, which support different stakeholders' businesses. The capability of creating good, sustainable business out of service seems to be missing. Well-defined, well-managed and open value networks with joint creation of value require a new way of thinking.

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Esa Nykänen

Leena Sarvaranta

Johanna Nummelin

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Annex 1: The interviewed persons

Interviewed persons (April–June 2003)

Finland	
S-Group	Visa Palonen, Head of the Electronic Commerce Tomi Jaakola
ECL (Logistics Training Centre)	Pekka Aaltonen, Director
TAI Research Centre (HUT)	Mikko Punakivi, Researcher Vesa Kämäräinen, Researcher
Finnish Post Parcel Services and Service channels	Ari Sahlman, Product Group Manager
City of Helsinki	Jussi Kautto, Developing Manager
City of Espoo	Sirkku Kiviniitty, Representative of Disabled Päivi Ahlroos, Developing Engineer
V&S Finland	Heikki Elo, Logistics Manager
Sweden	
Stockholm School of Economics, Center of Information and Communication Research	Bertil Thorngren, Professor of Business Administration
France	
Company TELEMARKE	Isabelle Mouclier
Company TEAM ON LINE	Alain Borri
Company FEVAD	Bertrand Pineau
Germany	
netconsum.de	Ulrike Peters - GAMBIT Consulting GmbH - Marketing
Bremke+Hörster	Karl-Heinz Uvermann Sales Manager FAMILA
Kaiser's Tegelmann AG	Walter Köhler National Delivery Service

Author(s) Nykänen, Esa, Sarvaranta, Leena & Nummelin, Johanna			
Title Home Service Concept From User Needs to Services			
<p>Abstract</p> <p>Until now, services and technical devices have been developed separately but the situation is gradually changing. Services are more often seen as combinations of services and physical products. This will lead to integrated services for specific customer. The purpose of this interview survey was to collect information on stakeholder needs from four countries to be used for conceptual development of an unmanned home delivery system pilot. Development of such a home service concept has to be based on identified needs, potential usage and prospective markets.</p> <p>Home services with delivery require new operating models in the supply chain. The cost of home delivery is heavily dependent on service model used, market share and business size. The business and service models in supply chains are still not mature enough to start effectively. The challenge is to create new service concepts, which support different stakeholders' business. At present, different stakeholder interests are not in line to support common service concepts. There is an obvious risk for conflict of interests. The capability of creating good, sustainable business out of service seems to be missing. Well-defined, well-managed and open value networks with joint creation of value require a new way of thinking.</p> <p>Home services and delivery can be supported by various stakeholders: building owner, developer/builder, inhabitant, haulier/logistician, service provider, employer and municipality. In order to create service concepts for win-win-win situations, all stakeholder interests should be at least partly in line with the concept. If a stakeholder is part of a true value network, there are both B2B and B2C issues involved and they should not stand in conflict with each other. This means adapting your own business interests to the product & service concept instead of sub-optimizing your own business only.</p> <p>A general model of a user centered value network is introduced.</p>			
Keywords home services, home service concept, business models, e-business, building, real estate, supply chains, delivery, stakeholders, customers			
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Tekijä(t) Nykänen, Esa, Sarvaranta, Leena & Nummelin, Johanna			
Nimeke Kotipalvelukonsepti Palveluja käyttäjien tarpeisiin			
Tiivistelmä <p>Teknologiatuotteita ja -palveluja on tavallisesti kehitetty erillisinä projekteina. Nykyisin palveluilla kuitenkin käsitetään yhä useammin palvelujen ja teknologioiden yhdistelmiä – halutaan tarjota integroituja palveluratkaisuja asiakkaille. Tämän tutkimuksen tavoitteena oli muodostaa näkemys keskeisten viiteryhmiä tarpeista neljässä maassa, jotta voitaisiin luoda edellytykset uudentyyppisen kotipalvelukonseptin kehittämiseksi.</p> <p>Kotikuljetuspalvelut edellyttävät uudenlaisia toimitusketjuja. Kotikuljetuspalveluiden kustannukset riippuvat yrityksen valitsemasta palvelu- ja liiketoimintamallista, markkinaosuudesta ja liiketoiminnan kokonaisvolyymista. Tähänastiset liiketoiminta- ja palvelumallit eivät läheskään aina ole osoittautuneet kovin elinkelpoisiksi. Haasteena onkin luoda sellaisia uusia palvelukonsepteja, jotka tukevat usean yrittäjän tai sidosryhmän tarpeita samanaikaisesti. Nykyisin eri sidosryhmien intressit eivät kohtaa tarpeeksi tehokkaasti, jotta uusia palvelukonsepteja saataisiin markkinoille. Intressiristiriidat heikentävät kestävästä palveluliiketoiminnan kehittymistä. Selkeästi määritelty ja hyvin toimiva arvoverkko edellyttää kokonaan uuden ajattelutavan omaksumista.</p> <p>Sinänsä kotipalvelut kiinnostavat useita osapuolia: rakennuksen omistajaa, kehittäjää, rakennuttajaa, asukasta, kuljetusyrityksiä, erilaisia palveluntarjoajia, työnantajia ja julkista tai sosiaalisetoria. Jotta markkinoille voitaisiin tuottaa integroituja palvelukonsepteja, useiden osapuolien intressien pitäisi kohdata, ainakin osittain. Jos osapuolet ovat mukana aidossa arvoverkossa, B2B- ja B2C-suhteissa ei voi olla konflikteja. Tällaisessa tilanteessa osapuolten on sopeutettava omat liiketoimintatavoitteensa yhteisen tuote-palvelukonseptin mukaisesti sen sijaan, että päätyisivät ainoastaan oman liiketoimintansa osaoptimointiin. Tällainen yhteistyö ei onnistu ilman ajattelutavan muutosta.</p> <p>Tässä tutkimuksessa luotua yleistä mallia voidaan hyödyntää edelleen kehitettäessä käyttäjäkeskeisiä tuote-palvelukonsepteja.</p>			
Avainsanat home services, home service concept, business models, e-business, building, real estate, supply chains, delivery, stakeholders, customers			
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- 2252 Nykänen, Esa, Sarvaranta, Leena & Nummelin, Johanna. Home Service Concept. From User Needs to Services. 2004. 31 p. + app. 1 p.

New types of innovations are expected to emerge in future: combinations of technologies for user-inspired and service-driven social innovations. New services to residential buildings are sought after, as the population is ageing. Potential customer segments for various home services are families, wealthy adults seeking high quality services, the elderly and disabled people. The purpose of this interview study was to collect information of stakeholder needs from four countries to be used for conceptual development of an unmanned home delivery system pilot. Development of such a home service concept has to be based on identified needs, potential usage and prospective markets. A general model of a user centered value network is presented in this report, hoping to enhance and support dialogue between authorities and companies.

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