



**Successful Sustainable Renovation Business
for Single-Family Houses - SuccessFamilies**

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Sustainable Renovation NICE project number 08191 SR

Deliverable 2.1

Report on stakeholder interests

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In Nordfjordeid 8th and 9th of June 2010

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1. EXECUTIVE SUMMARY

This report focuses on the different actors in the marketplace which offer products or services connected to renovation of houses. Which abilities do the different actors have for contribution to establish a one stop shop which offers a holistic renovation concept? Also complementary businesses such as for example banks are included in the analysis. Further, opportunities and threats are identified for different clusters of one stop shop.

The structure and how the actors in the market act are quite similar in the Nordic countries. Therefore we believe that the development of strategies for the different countries may be similar to a great extent.

The various types of actors in the renovation business occur at different stages in the value chain. The traditional first line services such as carpenters, retail stores, heat pump agents, plumbers, electrician, etc. come in direct contact with the customer when the house owner needs assistance in solving a specific “problem” or need. This is a golden moment for the SuccessFamilies project to address through these actors a more holistic energy efficient renovation to the house owner; to present the one-stop-shop solution.

To do so SuccessFamilies has focused on the “time window”: which opportunities could be used to communicate more energy efficient renovation? What type of renovation is needed? Based on this SuccessFamilies has singled out both the different opportunities which seem to be the best situations to stimulate energy efficient renovation as well as the characteristics of the house owner influencing the ability and willingness to carry out an energy efficient renovation.

The building stock analyses from the Nordic countries show that the segments with the biggest potential for high ambition renovation is Houses built in the 1960 and 70s, Houses built before 1940 pre-war (except in Finland) and houses from the post-war period in Finland.

With some minor exceptions the different governmental regulations and voluntary standards are quite similar in the Nordic countries. They represent a common opportunity in stimulation of energy efficient renovation.

The one-stop-shop should offer tailor made services for sustainable renovation of a single family house. This should include the building envelope, insulation, window, materials, heating and ventilation system, and even financing. The one-stop-shop should have the knowhow about competent firms who can offer the additional services, price knowledge and how to organize the work in a cost-effective way, in the right order and to the wanted quality.

These complete service packages, which represent the one-stop-shop solution, might differ depending on which industry has the leading part in the different pilot studios. In addition to a range of common strengths, weaknesses, opportunities and threats, all the different service package models have their own unique characteristics regarding strengths and weaknesses, in addition to facing different opportunities and threats. Nevertheless the most important factor seems to be that no actor alone possesses an overall competence to supply a holistic solution. Trustworthiness of the actors is another important factor to take into consideration when developing a one-stop-shop solution.

The overall threat is the fact that a simple cost focus leads to limited renovation and reduce interest for high ambition renovation. The strategies and actions chosen to introduce and sell energy efficient renovation to single-family house owners should present all non-economic benefits as well as the

economic benefits, which have been proven equally important to the house owners which carried out an energy efficient renovation.

2. INTRODUCTION

2.1. Purpose

The purpose of this document is to address important market issues related to each of the potential actors to take part in supply of complete or parts of services to the single family house owner. Also differences between the countries have been studied.

The report will serve two main purposes:

- a) Give important input to the next deliverable of SuccessFamilies; possible market strategies for one stop shops of renovation of single family houses (report D2.2).
- b) Be an important source of market information for companies planning to develop a one stop concept.

In this report the focus is on identifying barriers and opportunities for sustainable renovation concepts. All steps of the business chain are addressed to find out how to best promote the use of energy efficient solutions: how to get the service providers to sell these products and how to make the customers to buy them.

2.2. Methodology

This document is based on:

- a) National reports on barriers and opportunities (internal documents)
- b) Two workshops; in Åre 16th and 17th of February and in Nordfjordeid 8th and 9th of June 2010 were held, with participation from all partners in the project.

To the first workshop the national reports were analysed and important points were extracted into a workshop paper.

This paper addresses the most important issues topic by topic, starting with input from the national building stock analyses in order to point out the segments with highest energy saving potential.

Other themes which were discussed were: important governmental regulations, customers needs, present type of actors and conflicting interests between different types of actors. Through the 6-forces model the core business for a one-stop-shop pilot is defined, as well as identifying potential types of actors in this market. Finally all discussions were summed up in different conclusions, actions and inputs to other deliverables in SuccessFamilies.

Between and after the workshops all ideas, inputs, corrections and discussions during the workshops were systematised in different classifications and themes to be able to use them as valuable input to further work in the SuccessFamilies project regarding marketing strategies.

We started out this document with some background information with original questions regarding each topic. Throughout the workshops and during the discussions these questions were replaced with a) conclusions for strategic planning, b) conclusions for action plan and c) input to deliveries.

The following definitions have been used:

CONCLUSIONS FOR STRATEGIC PLANNING:

These conclusions are important information when defining our further strategies. The conclusions are systematized as either strengths (S), weaknesses (W), opportunities (O) or threats (T), and are also summarized in the final SWOT-analysis.

CONCLUSIONS FOR ACTION PLAN:

These are follow-ups concluded at the workshops, and they are used to describe actions to be done by the participants during the working process.

INPUT TO DELIVERABLES:

These are ideas and actions which came up during discussions which are good inputs to other deliverables.

Based on all the themes, potential joint ventures to create new service packages have been defined. Finally the SWOT-analysis lists all the common strengths, weaknesses, opportunities and threats as well as all strengths, weaknesses, opportunities and threats for all the different joint ventures mentioned. They are all marked with the first letter in brackets: i.e. Strength (S), Weakness (W), Opportunity (O) and Threats (T).

This document summarises the work and its conclusions from the above described process, which may be summarised in figure 1 below.

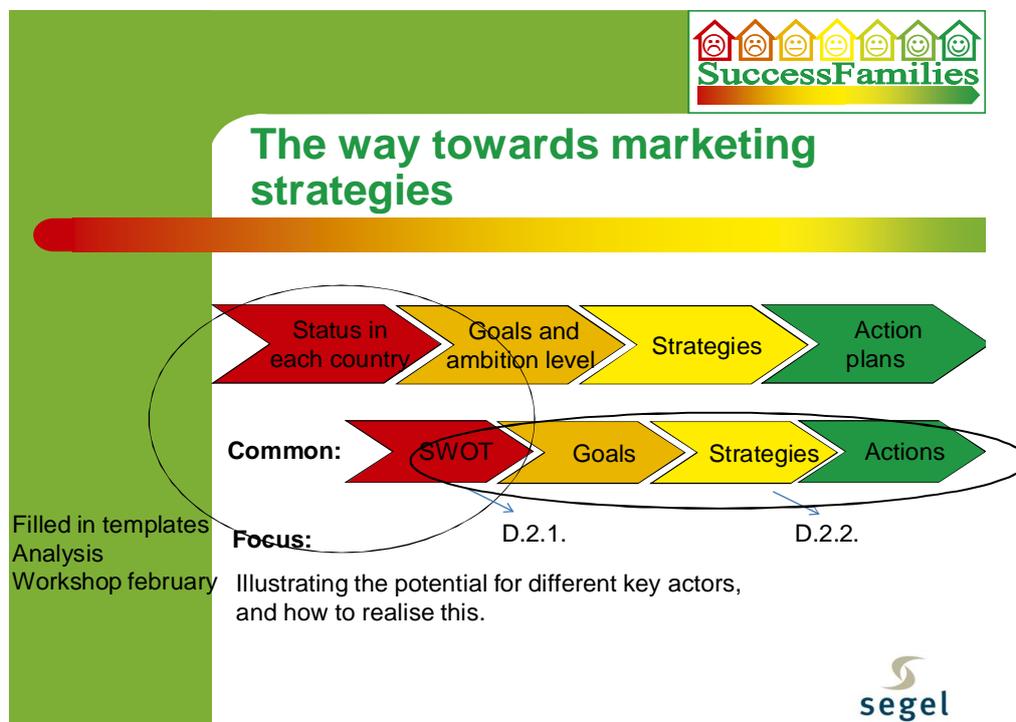


Fig. 1. The way towards marketing strategies. Source: Haavik, T., Segel

2.3. Acknowledgements

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3. STATUS

3.1. Building stock analysis

From report D1.2 of Success Families (Analysis of promising sustainable renovation concepts) [1]:

“In general, single-family houses account for an average of 50% of the Nordic building stock. Since single-family houses also contribute for more than 50% in the energy use in buildings in the Nordic countries, energy renovation of existing single-family houses has a large potential for cost-effective energy savings.

In Denmark detached houses mainly use central heating systems, primarily fired with oil and gas. In Sweden and Norway heating systems vary a lot over the years. In Sweden single family housing from the 70s and 80s mostly use electric heating, while biofuel is dominant in house built before 1941. In Norway about 70 % of the buildings use electric heating combined with stoves for solid or liquid fuel.

District heating with high-temperature water radiators are the predominant heating systems used in apartment buildings in Finland, over 90 %. However in single family housing also floor heating and direct electrical heating are being used.

In all the Nordic countries, some typical single-family houses can be found for different construction periods. Single-family houses in Norway, Sweden and Finland are often built with wood as a main construction material, but in Finland brick is also used. The insulation and/or finishing materials differ. In Denmark, however, bricks are used as a dominant construction material for cavity walls. The construction periods in the Nordic countries differ slightly for each country since they are determined by the insulation standard at that time in each country. The typical single-family houses identified to have large energy saving potential, however, descend from the same time period in each country.

Although a large part of the single-family houses built before 1945 has been renovated (mostly in Norway), energy renovation of those houses today would still account for a large energy savings because many houses were built then. Single-family houses from the 1960's and 1970's also have a large primary energy saving potential since they have been built before the tightening of the insulation standards (and because of prevalent of electric heating system, e .g. in Norway and Sweden). Since each of these identified single-family houses with large energy saving potential has a different composition and characteristics, their potential for energy savings will differ mutually.”

Numbers of dwellings:

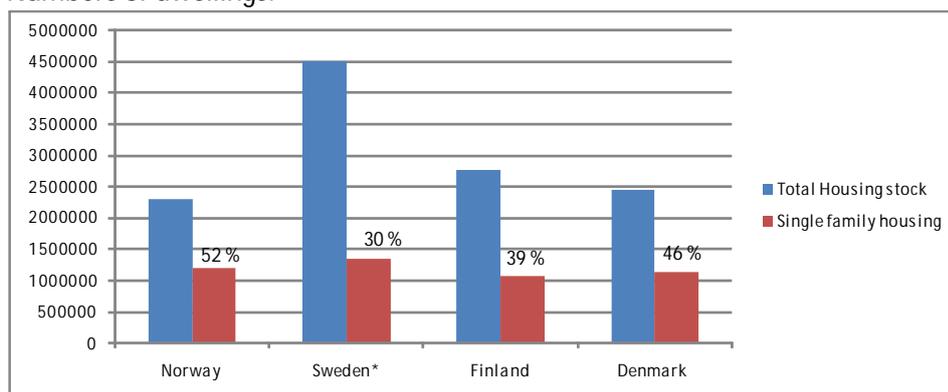


Fig. 2: Number of dwellings, total and single family housing. Source: Contribution from participants in Success Families project. [1]

Figure 2 above shows the total housing stock, with numbers in percentage for the single family share of the total housing stock. Row houses are not included. For more detailed information please see [1].

Sweden

There are about 1.36 million permanently used detached houses which represents roughly 30 % of the total housing stock.

Energy statistics for single-family houses include all types of permanently used houses (detached and row/linked houses). From renovation marketing point of view also all such houses are of interest.

Denmark

The total number of single-family houses of interest (detached houses and farm houses built before 1979) is roughly 1.1 million units. In the period 1960-79 approx. 450,000 detached single-family houses were erected, which account for nearly half of the stock of detached single-family houses. The vast majority are so-called type houses.

The total heated floor area of these houses is of 67 million m² and it breaks down as follows at intervals of 5 years (1000 m²):

1960-64: 12,329

1965-69: 17,044

1970-74: 21,493

1975-79: 15,984

Finland

In Finland single family housing counts for 1.083 mill. houses which represents 39 % of the total number of dwellings.

Norway

In Norway the total housing stock contains of 2.3 mill houses. 1.2 mill. are single family houses. [2] and [3].

CONCLUSIONS FOR STRATEGIC PLANNING:Segments with biggest potential for high ambition renovation: (O-Opportunities)

Most interesting segments are:

1. Houses built in the 1960 and 1970 – before the building codes
2. Houses built before 1940 pre-war (except Finland)
3. Houses in the post-war period (Finland – all individual but built in the same way, using the same materials)

In the project we ought to focus on the most interesting segments – using specific communication. Most of these segments are common for all the Nordic countries.

Regarding segment 1: Houses built in the 1960 and 1970 before the building codes:

Differences:

The differences in building envelope are that Denmark mostly has insulated cavity wall/brick façade. The other Nordic countries have primarily timber-framed structures. The district heating came to Finland in the end of 70s and early 80s.

Similarities:

All the Nordic countries have shift in insulation standard late 1970s and early 1980s. Houses built before 1980 have low energy standards. A common challenge is poor ventilation and heating systems.

INPUT TO DELIVERABLE D 3.2 Service Model Report

Develop a work-list of ideas for how to perform renovation, dependent of the state of the buildings.

3.2. Regulations and voluntary standards

Type of regulation	Norway	Sweden	Finland	Denmark
Outside retrofitting – Construction permit	Obligatory approval of major changes in the house; enlargement, demolition major changes in the facades, technical installations Either the homeowner or a place coordinator must be responsible for the construction regulations	Construction permit is needed for major changes in the house, enlargement, demolition, major changes in the facades Either the homeowner or a place coordinator must be responsible for the construction regulations	Building permit required for work which is comparable to building construction, and for extending a building or increasing its gross floor area. Building permit needed when work is affecting the safety or health conditions “Action permit” when altering the façade.	The building code set claims for renovation. If you change windows, you have to change them into the claims in the building code. (Nobody is checking this afterwards).
Change of use	Building permit required From office to dwelling	Building permit required when altering the intended use	Building permit required when altering the intended use	Building permit required
Inside retrofitting	No regulations	No regulations	No regulations	No regulations – focus on component-based requirement.
Authorization of personnel	Only certified professionals are allowed to do electrical, water piping or connection work with stoves	Only certified professionals are allowed to do electrical, water, piping or connection work with stoves	Only certified professionals are allowed to do electrical, water piping or connection work with stoves	Only certified professionals are allowed to do electrical, water, piping or connection work with stoves
Building code for retrofitting	No existing build code for retrofitting regarding level of energy use	No existing building code for retrofitting regarding level of energy use	No existing building code for retrofitting regarding level of energy use	Yes – requirements for larger renovations and renovation/replacement of single components (building envelope or services)
Energy performance certificate (EPC), with construction, sold or rented out	EPC is obligatory from July 2010 for all houses to be sold or rented out. This may be done by the owner himself directly on the WEB of Norwegian authorities; www.energimerking.no [4]	EPC is obligatory from January 2009 for all single-family houses to be sold or rented out. Issued by a certified energy auditor and valid for 10 years	Energy performance certificate is voluntary for single-family houses built before 1.1.2008.	A change to the existing energy certification scheme: real estate agents are required to provide info from the EPC when advertising houses for sale. Expected to be put into force in 2010.
Future plans – regarding energy use for retrofitting	Recommendations are presented also for retrofitting [5]	Recommended energy efficiency measures are part of the EPC	Plans for retrofitting.	BR10 to be put into force in 2010 incl. tightening of energy requirements to existing buildings, e.g. more component requirements. This comes into force if the additional investment is paid back within 75 % of the expected life time

Voluntary standards for low energy houses and passive houses (PH). New built	There is a proposal for definitions of a low energy standard as well as specific Norwegian standard for PHs, which take into account the special climate conditions as well as def of calculation methods. Max 15 kWh/m ² /year for PH and max 30 kWh/m ² /year for low energy houses for heating.	There are defined standards both for PH (12-14 kWh/m ² /year) and Minienergihus (20-24 kWh/m ² /year) for heating depending of which of the three climate zones the house is located. The standards include also specific definitions for max total bought energy (except household energy)	Total primary energy use for appliances, domestic hot water and space heating and cooling is limited to 130 – 140 kWh/m ² , • The total energy demand for space heating and cooling is limited to 20 - 30 kWh/m ² floor area; • The air tightness of the building envelope $n_{50} \leq 0.6$ 1/h	Low energy class 2 and low energy class 1, defined as having a calculated energy performance that is 25 and 50 per cent respectively better than the minimum energy performance for new buildings. In 2010 it is planned that class 2 will be the new energy performance limit in the building regulation and in 2015 it is assumed that class 1 will be the minimum requirement. It is the government's target that by 2020, all new buildings use 75 % less energy than today
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CONCLUSIONS FOR STRATEGIC PLANNING:

With some minor exceptions these regulations are quite similar in the Nordic countries. They represent opportunities for motivating for energy efficient renovation (O)

3.3. Subsidies/grants/marketing campaigns

Kind of subsidy	Norway	Sweden	Finland	Denmark
Energy analysis of the house (thermog)	Support by Enova [6] and by an NGO	No	Tax credits for labour costs. Max €3000 per year in total for all labour costs*	No
Energy efficient windows:	No	2006-2008: 30 % of investment costs that exceeded SEK 10.000. Max subsidy SEK 10.000	Tax credits for labour costs. Max €3000 per year in total for all labour costs*	In 2009, funds was set aside for renovation of res. buildings, incl the possibility to get 20% subsidy for energy efficient windows
Heating: From resistance heaters to districts heating, brine/water based pump or biomass heating system	Up to 10000 NOK for installing air to water or water to water HP and biomass systems or pellets stoves.	2006-2010: 30 % of the labour and material costs of installation. Max SEK 30.000.	Tax credits for labour costs. Max €3000 per year in total for all labour costs*	Replacement of oil-fired burners with sustainable energy supply solutions: Heat pump, brine-water: DKK 20,000,- HP, air-water: 15,000,- District heating: 10,000,- Solar : 25% of total cost
Solar Water heaters	Subsidy of 20% of costs, maximum NOK 10.000,-	Introduced in 2001, Form 2009 2.50 SEK/kWh/years for the heat produced. Max SEK 7500 per house	Tax credits for labour costs. Max €3000 per year in total for all labour costs*	Yes – see above
Radon decontamination in single family houses	No longer.	When radon exceeds 200 Becquerel/m ³ indoor air: Max subsidy 50 % of cost for undertaken measure. Max SEK 15000.	Max subsidy of 70 % if radon exceeds 200 Becquerel/m ³ in indoor air. Renovation costs must be over 7.000 € Also available for other health-related renovation(mould)	No – but more attention on the problem in the new Building Regulation BR 10
Campaigns	Enova [6] runs national info campaigns for several means.	Swedish Energy Agency in cooperation with other agencies promotes energy awareness campaigns	In 2010, maximum of 25 % of the accepted costs is available for low-income families for improving energy-efficiency of their single-family house or implementation of renewable energy ¹	2008-2011 fund of 20 mill to campaigns promoting energy savings in buildings, whereas 10 mill for a knowledge centre, mainly aimed at the professionals. Further on 5-10 mill / year.

¹ www.ara.fi

Loans	90% of cost from State bank. One private bank offers better terms for low energy houses.	No	No	No
Tax deductions	No special tax deductions for energy efficiency means in households.	From 1.6.09 private persons can get tax subsidy up to 50 % of the labour cost for maintenance, renovation or extension work in a single-family house or tenant-owned apartment. The max claim allowed is 50 000/person/year. Can be combined with subsidy to replace resistance heaters or to decontaminate radon in single family houses.	Tax Credit ² for Domestic Help for household improvement / home repair. Only for the work performed, not for materials.	No such subsidy, but a lot of talk and proposal for it and reference to how they do in Sweden

*This means per year for all types of renovation and other household work in total.

CONCLUSIONS FOR STRATEGIC PLANNING:

Finland and Sweden: Supports tax reduction connected to renovation work (not material) when a company does it. (O-opportunity)

Sweden and Denmark: No subsidies for thermo graphic measurement of a building.

The different types of subsidies in the Nordic countries might influence energy efficient renovation, in some cases motivating to holistic solutions but in other cases could lead to sub optimising. Both governmental and private actors are important in this respect. (S-strength / W-weakness)

² <http://www.tax.fi/>

3.4. Customers' needs and the right timing for energy efficient renovation

In order to find potential market segments and the right opportunity to present a renovation solution for the homeowner, the customer needs must be identified. These opportunities represent different time windows for the one-stop-shop solutions to offer relevant options for the homeowner. If the homeowner wants to change for example the windows in the house, the one-stop-shop can present different solutions and good ideas for how to save energy and make a better indoor climate. When the job is finished and the windows have been replaced, then this opportunity is gone. Combined with the condition of the house, these opportunities will indicate what the homeowners might do in the future regarding energy efficient renovation.

In the workshops the partners of SuccessFamilies have assessed which customer needs represents a unique opportunity to present a one-stop-shop renovation solution, and also some important driving factors to some of these needs.

The type of need is rated (by partners in SuccessFamilies) regarding to which extent it is a good opportunity for selling energy efficient retrofitting: (5 = best opportunity)

The most important common opportunities in the Nordic countries are:

Customer need	Rate
Warmer house in winter	5
Reduced draft	5
Improved condition of windows	5
Reduced energy costs	5
Improved physical condition	5
Reduced noise from outdoor environment	5
Improved indoor air	4
Nicer indoor environment (kitchen, flooring, painting)	4
Change of energy supply system	4
Financing of above improvements	4
Increased market value of the house	3
Repair water leakage	3
Nicer façade	2
Improved security	2
Environmental reasons	2
Colder house in summer	1

Fig.3. Customer needs. Source: Success Families workshop in Åre 16-17th of February and in Nordfjordeid 8.-9th of June 2010.

These considerations are partly supported by surveys and statistics from Sweden, Norway and Finland. This information gives also input for estimating the market potential:

Sweden:

This is what was found from a survey of Swedish homeowners:

Plan to replace /improve the existing installation	Windows (%)	Attic insulation (%)	Wall insulation (%)
No plan	71 (N=690)	80 (N=725)	91 (N=820)
Yes, within 3 years	16 (N=158)	11 (N=102)	4 (N=37)
Yes, 3-10 years	13 (N=124)	9 (N=78)	5 (N=45)

Fig. 4: Percentages of respondents (excluding "do not know" responses) reporting about their plans to implement various building envelope energy efficiency measures. Source: *Survey of Swedish homeowners* (Nair et al., 2010). [7]

Other surveys by Mid Sweden University showed that about 3-4 % homeowners would install a new heating system annually.

A general conclusion from the surveys has been that, in the absence of investment subsidies, homeowners of 36-45 years age are most likely to change their heating systems or retrofit building-envelope components.

Hence, a very conservative estimate would mean that annually at least about 1 % of the houses i.e. about 20.000 houses would be renovated. Assuming an investment of about 100.000 SEK the total market potential would be 2000 million SEK.

Norway:

The yearly ROT-market in single family houses in Norway is approximately 38 Billion NOK (2007, 2008 and 2009). It is expected to grow approximately 3 % during the next 2-3 years. (Source: Prognosesenteret). It should be possible for energy efficiency means to compete with other type of investments and/or be executed in conjunction with other type of investments to be done anyway.

Finland:

A survey of the realised and planned renovation of single-family houses was conducted by VTT in 2009. The most typical renovation was that of inner coating (71 % of respondents, figure 5), but many respondents had also done or were planning renovations where energy efficiency improvements could be realised (figures 5 and 6).

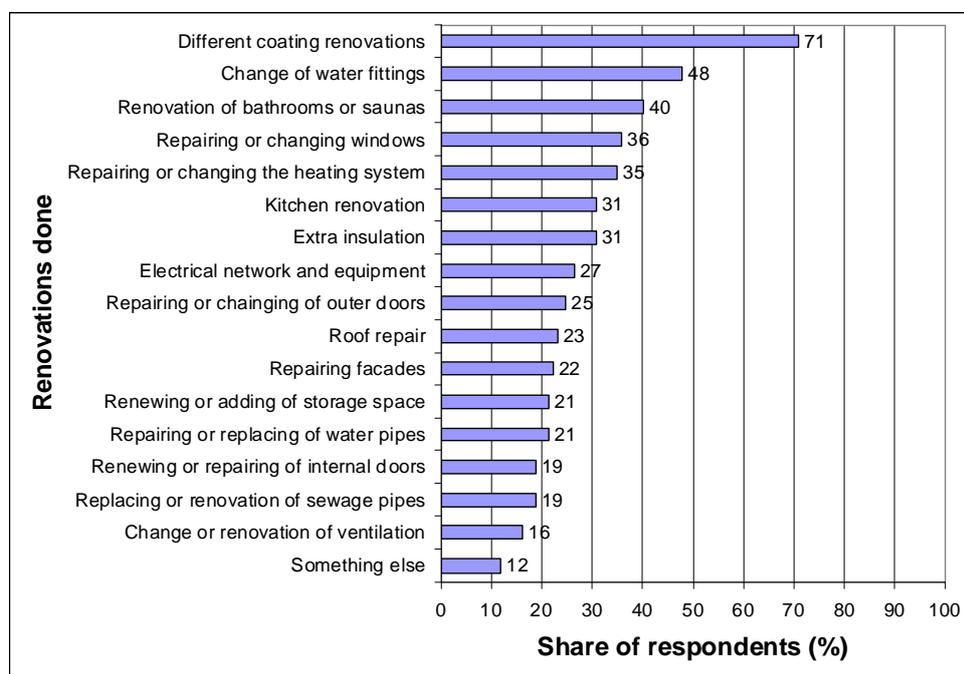


Figure 5. Renovations done within the last 5 years. Source: VTT, Finland

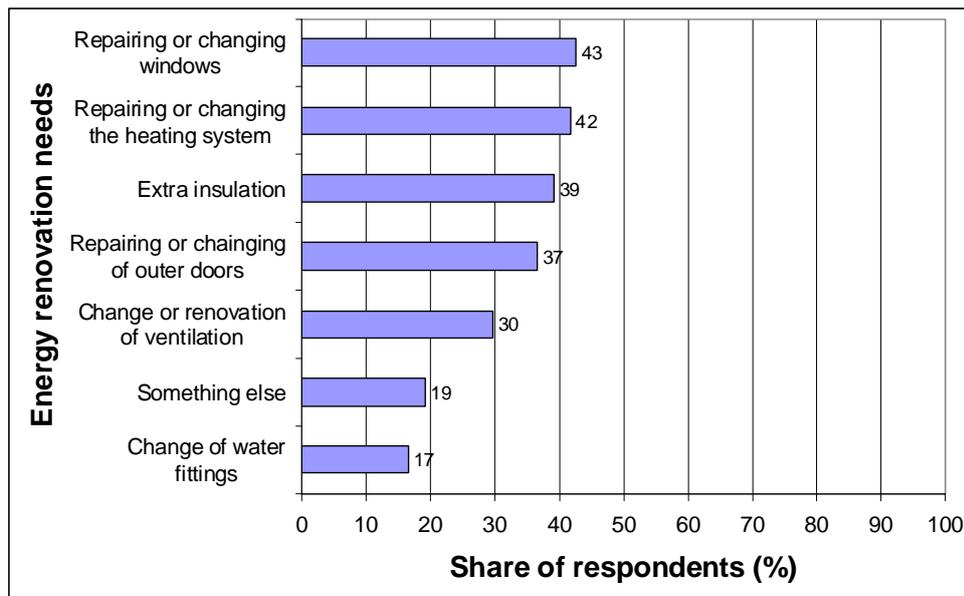


Figure 6. Energy renovation needs within the next 5 years. Source: VTT, Finland

How to find the right segments in the market?

The foundation for a sound market development of advanced renovation lies of course in houses which have an immediate need for some type of renovation (windows, façade, etc.). This opens the opportunity to consider more holistic solutions.

Besides this, earlier studies as REEP story [8], indicate that persons who have lived in dwellings for a shorter period tend to be more interested in upgrading the buildings than persons who have lived there for a long time.

A third factor which is essential is the characteristics of the house owner(s). As a holistic sustainable renovation must be considered as a new and unknown innovation, the market introduction must be directed towards persons who are curious and open-minded, i.e. innovative persons. Later, when there are proven examples, another group called early adopters are ready for the new innovation. This group will serve as "trendsetters" in the market.

It seems important to bear in mind several demographic factors such as the homeowner's family situation; age, how long the house owner have stayed in the house, if it is newly bought, etc. All these factors influence to what extent the renovation is done in an energy efficient way.

This may therefore be summarised as the "ideal situation" for finding a customer who is most likely to go for a holistic sustainable renovation:

- 1) The house need some kind of renovation
- 2) The house is newly bought, or about to be bought
- 3) The persons who have bought the house are innovative

Based on the Rustholli experience in Finland, it seems that people over 50-60 years, who have paid off their mortgage, do not want to take on a new loan to make extra renovation. Young people of 25-35 years old do not have the money or opportunity to take on extra loans.

CONCLUSION FOR STRATEGIC PLANNING:

It is important to focus on the time window: which opportunities could be used to communicate more energy efficient renovation? What type of renovation is needed? Identify also energy efficient solutions which may be done without total renovation. (O)

Based on the above scheme the best time windows and opportunities for stimulating energy efficient renovation seems to be: (O)

- Warmer house in winter
- Reduced draft
- Improved physical condition of a house
- Improved condition of windows
- Reduced energy costs
- Improved indoor climate
- Nicer indoor environment
- Change of energy supply system
- Financing of above improvements

3.5. Present type of actors

3.5.1 Value chain

The figure below illustrates the actors in the value chain involved (or possibly involved) in renovation. The lighter colour of the boxes within complete service package illustrates that this is little developed.

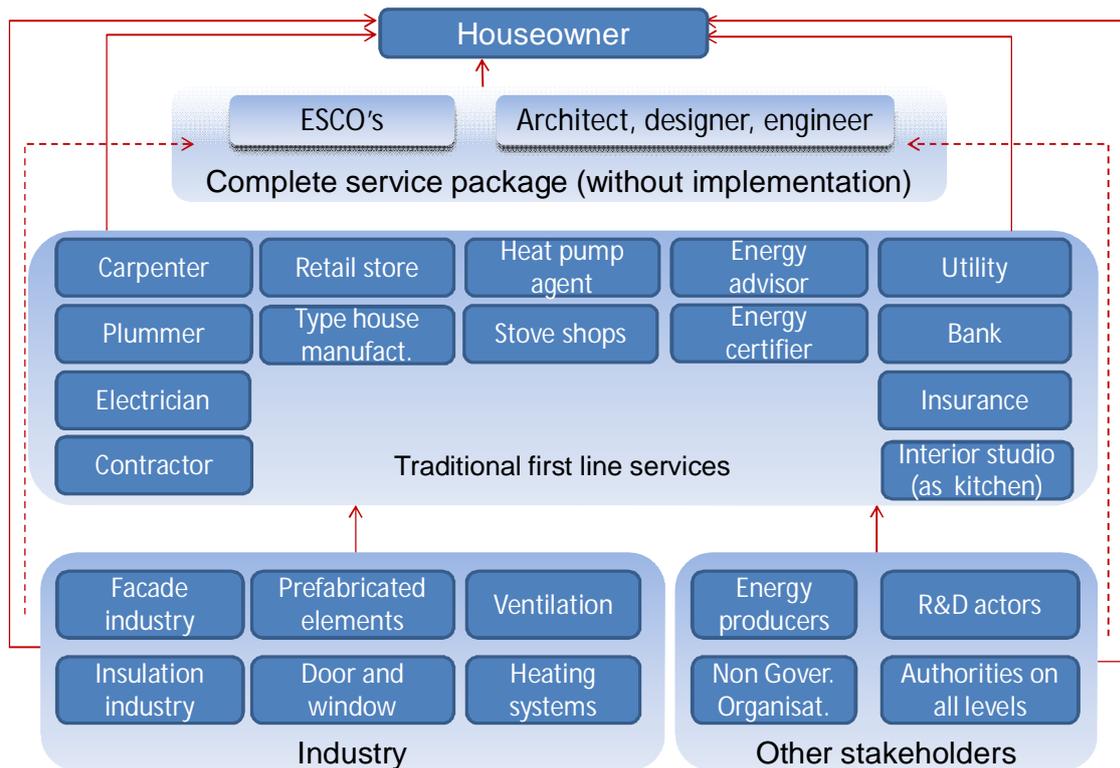


Fig. 7: Value chain. Source: Haavik, T. Segel

CONCLUSIONS FOR STRATEGIC PLANNING:

Information about the actors in the value chains:

Utility companies:

Finland and Sweden: These companies only want to give advice. They are less interested to take action towards energy efficiency. (T-threat)

Insurance companies:

There might be limitations on the coverage of the insurance depending on the age of the house or different building parts:

Pipes:

Sweden: Full insurance coverage for pipes of less than 10 years old; thereafter each year there is 5 % reduction in the value. So if the piping system is 30 years and there is water damage you do not get anything.

Finland: Piping only under 30 or 35 years can be insured. The insurance fee often varies depending on the age of piping but sometimes the change is only marginal. There might be a reduction in the amount of possible compensation depending on the age of piping. Other types of renovations do not influence the insurances.

Denmark: There is no restriction on age for piping. The insurance fee does not depend on age of piping, but on age of the house. If the report on the condition of the house indicates particular problems with piping the insurance can be offered with some reservations. If it can be documented that an older house has been renovated totally, it can be taken into account in the insurance fee.

Usually there is no depreciation/reduction in the compensation amount in relation to age of piping. Some companies operate with a modest excess/own risk fee for having no reduction in the compensation amount in case of piping related damages.

Norway: If piping is older than 35 years, the own fee increases with NOK 15.000 at the second damage regarding both piping and following injury. If water top valve is installed at damage time, there is no increased fee.

Electric cables:

Sweden: Full coverage for cables of up to 25 years old; thereafter each year there is 5 % reduction in value [9]

Fire:

Sweden: If no renovation has been done for more than 30 years, then in case of a fire, you get a maximum of 100 KSEK. But, if the homeowner can prove that some renovation has been done, then compensation may be higher [9]. (O)

Hardware shops: (T and O)

Norway: Retail stores. The chain itself sells components and is not ready for full concept thinking. But the local representatives in the chain are more interested and offer today several additional services besides components. But generally speaking the hardware shops do not possess the right knowhow.

Finland: K-Rauta and Rautia retail chains have launched services for energy certificates and for energy-efficient solutions in renovations. Still perhaps more knowledge is needed about total solutions and best practises.

Technical consulting firms: (O)

Sweden: In Umeå there are several companies which are owned by a person who also owns many real estates. These companies have shown a genuine interest in energy efficient buildings. With money and property the companies also have the necessary money to invest in such concepts.

A building consultant company (Tyrens) and an energy/building inspection company (Independia AB) are also interested in this.

Insurance company – have the knowhow to deal with building damage – not far away in core business thinking (O)

Potential new players: (O)

Sweden: Installation workers of windows are a certain profession in Sweden. Small installation companies throughout Sweden specialized in glazing, especially in the renovation market, "Glasmästeri".

Finland: Special windows and door studios, system suppliers.

All Nordic countries: Real estate agents. The branch should be interested in the energy efficient renovation because the value of the property/house rises. (O)

Type house suppliers: (O)

Companies similar to type house suppliers are interesting actors for a total renovation package. They possess technical design, construction-knowhow etc. The existing type house suppliers do not have the knowhow for renovation, although a heat pump, ventilation system etc. are the same whether it is a new house or a renovation project. How can we provide with the proper knowhow for renovation?

Common key actors for the Nordic countries: (O)

- Contractor/carpenter
- Real estate agents
- Utility
- Hardware stores
- Technical (energy/engineering) consulting and architect companies
- Type house manufacturers
- Insurance / Banking
- Industry

Cooperation between actors: (O)

We should not focus only on which actor could play the key role, but also who could cooperate to deliver a complete renovation package.

3.6. Potential actors to play important roles in one stop shop

3.6.1 Complete service packages

	Norway	Sweden	Finland	Denmark
Complete service package	Possible 3023 companies which can provide this service. 537 with more than 1 employee Revenue approx NOK 5 billion	Possible 2220 companies in “renovation”. 72 firms offer renovation services to single-family housing	Most of the providers are local SME companies	Construction sector in Denmark is characterized by many actors (about 30,000 firms) Few existing suppliers of complete holistic solutions to the single family market
Barriers	Supplier: Own competence lack of complete concept to offer the market How to make profit Demand: Expensive to hire an architect	Supplier: Interested in own area of competency Lack of full service concept, make profit Demand: Trustworthiness of the company Expensive service	Supplier: Some focus on work or products, lack of total concepts Demand: DIY much used in single-family market. Financing: many house owners have already used their financial means for purchasing the house. Not much money left for the renovation, let alone service	Supplier: Home owners take contact to craftsmen and they do what they are told to do Maybe use each other as subcontractors but very rarely formation of consortia Lack of knowledge and will to collaborate with other trades Demand: Trustworthiness of the craftsmen A do-it-yourself culture Lack of tradition to buy counselling services from architects and engineers Financing
Opportunities	Supplier: Renovation a growing business Possess the relevant skill Demand: A complete and objective proposals for the job	Supplier: Renovation a growing business – old houses a large share of housing stock Possess relevant skills Demand: Competent and objective proposal for measures to be undertaken	Supplier: Growing demand in the market	Supplier: Renovation a growing business Better and cheaper – in the long run Possess the relevant skill in teams of designers and contractors Demand: A complete and objective proposals for the job - in contrast to an incomplete and unclear proposal/quotation
Companies	4 largest companies Link Signatur AS Snøhetta AS Selberg Arkitektkontor Niels Torp AS Arkitekter	Interesting new company: Energieffektiva hus AB Industrianläggningar i Norrland AB (INAB) Independia AB	Rustholli Senera LLK-remontit Termater Multirax Oy Kodin Onniset Oy Laroc Oy Rautia/K-Rauta	Only a very few: e.g. Dong Energy, NCC, Lind & Risør (type house producer)
Total market potential	Total ROT 38 bill NOK (Euro 4,75 bill) Should be big potential also for energy efficiency.	Could be more than 2000 million SEK	2008: Renovation: 1.700 mill Euros Total building services: 400 mill Euros	Large potential Now: only app. 1/3 of value of renovation work on single-family house are done by professionals

CONCLUSIONS FOR STRATEGIC PLANNING:

Another very important issue to discuss is how to secure trustworthiness regarding one-stop-shop.

Suggested alternatives: (T and O)

- Supply an independent 3rd party to be the customer's advisor. This advisor can provide with objective information about what should be done, give quality assurance, test of performance and result, included cost.
- Use an independent known public actor such as ENRA has done with VTT
 - Example in Norway could be Enova

A very important question which arose during the discussions is who should pay for this independent part? Total package versus neutral counselling? These questions go directly to strategic planning (O)

INPUT TO DELIVERABLE D3.2 Service Model Report/D3.3 Piloting Scenarios:

What are the advantages and disadvantages with using the different models?

3.6.2 Six forces model for one stop shop

The model below is used as a tool for defining/identifying:

1. What is the possible “core business” for a one stop shop?
2. Who is the most likely customer?
3. What are the real total needs of the customer in this respect?
4. What other actors and substitutes may influence the development of such business?

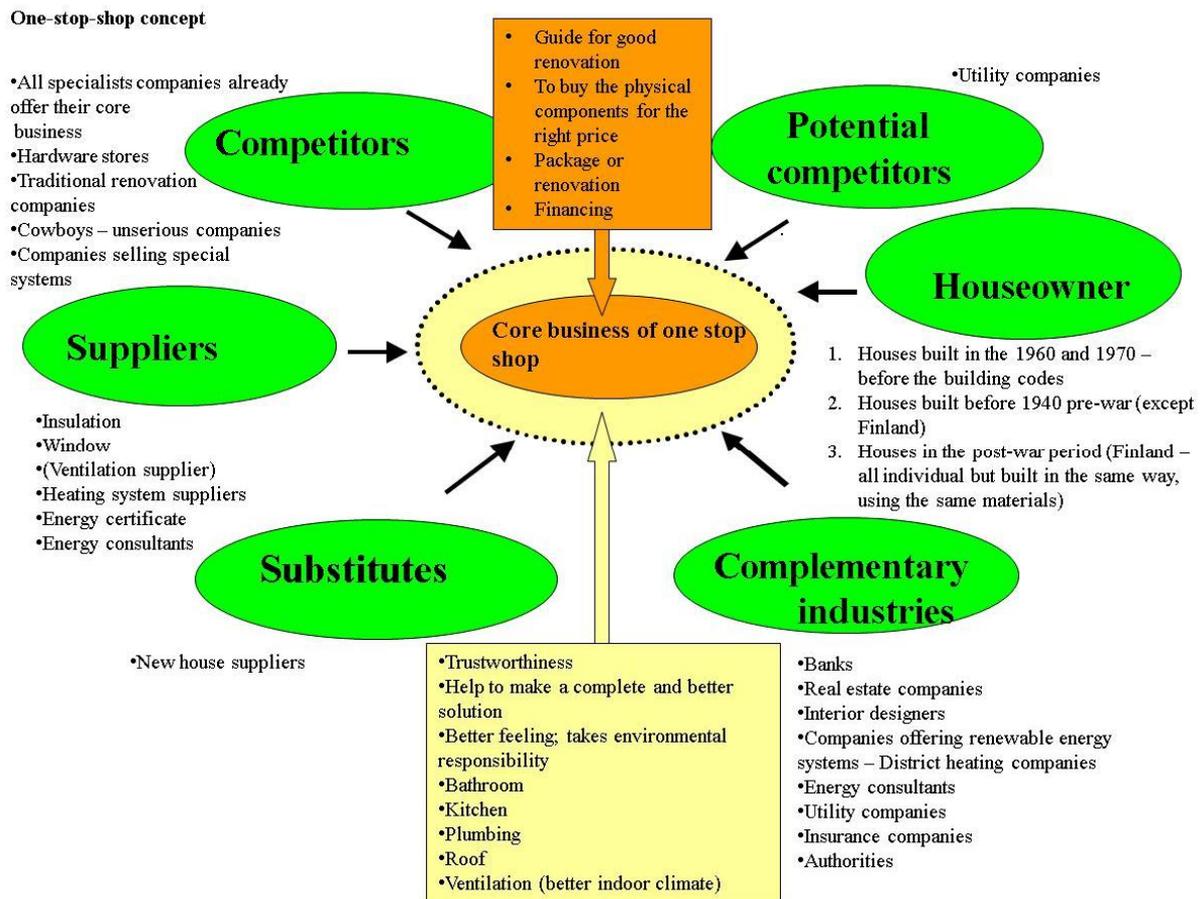


Figure 8. 6-Forces model. Source: Grove, A. [8] and [10]

(NB: In the above scheme we have already put the information listed below)

The discussions in the workshops were based on these questions:

What is meant by a one-stop-shop concept?

- How much should we focus on energy efficiency
- Know-how and the practical service
- A place to go for the persons who want to renovate – where they can get information about how to renovate in an energy efficient way
- Tailor made renovation – what to do – what we can do and what you can do yourself
- What would be interesting questions for our customers in the future? We should be able to give the best sort of advice for a energy efficient renovation solution
- Who is organizing the work – who will guarantee for the service

- We want the actors to also persuade or tell their customers not only to renovate but to renovate in a sustainable way

CONCLUSION FOR STRATEGIC PLANNING: (Business idea)

Offer tailor made services for sustainable renovation of your house. This should include the building envelope, insulation, windows, materials, heating and ventilation systems etc.. The one-stop-shop should have the knowhow about competent firms who can offer the additional services, price knowledge and how to organize the work in a cost-effective way, in the right order, and to the wanted quality. (O)

Core business (orange area):

- Guide for good renovation
- Energy efficient renovation up to passive house level (already core business for some companies offering new houses).
- To buy the physical components for the right price
- Package of renovation
- Financing (by a network cooperation, or a bank can be on the spot to help figure out the expenses and need of investment)

The light yellow area represents additional services/added value:

- Trustworthiness
- Help to make a complete and better decision
- Give the buyer a "better feeling" for doing his piece of improving environment.
- Bathroom
- Kitchen
- Plumbing
- Roof
- Ventilation (better indoor air)

Most important suppliers:

- Insulation
- Window
- (Ventilation supplier)
- Heating system suppliers
- Energy certificate
- Energy consultants

Most important competitors:

- All specialists companies already offer their core business
- Hardware stores
- Traditional renovation companies
- Unserious companies
- Companies selling special systems

Potential competitors:

- Utility companies

Substitutes:

- New house suppliers

Complementary industries:

- Banks
- Real estate companies
- Interior designers
- Companies offering renewable energy systems – District heating companies
- Energy consultants
- Utility companies
- Insurance companies
- Authorities

Possible cooperation between public and private actors could be: (O)

- Quality assurance done by independent 3rd party
- Education / training – who can give them this training – and how to do this? Develop a proper education system
- Having public offices joining this solution gives trustworthy to the project
- Public could make sure we have a proper labelling for the house = stimulate private house owners to be interested in labelling their house, and renovate in an energy efficient way.
- The public could give a sort of certificate to the one-stop-shop guaranteeing that this is a good concept, and further on could this be developed according to the ISO-standard system? A sort of certificate for the procedure of energy efficient renovation. ?
- (Ref. Austria – they have such a system)

INPUT TO DELIVERABLE D 2.2 (Market strategies):

In addition to house types from specific building year – we should segment our customers regarding demographic factors such as age, educational level, geographic area etc. (with reference to the REEP story in Canada and to chapter 3 C. Customers needs [8] and the experience from Rustholli, Finland).

3.7. Summary of conclusions of status

TOPIC	STRATEGIC PLANNING
Building stock analysis	<p><u>Segments with biggest potential for high ambition renovation: (O)</u> Most interesting segments are: Houses built in the 1960 and 1970 – before the building codes considering energy efficiency standards Houses built before 1940 pre-war (except in Finland) Houses in the post-war period (Finland– all individual but built in the same way, with same materials)</p>
Regulations and voluntary standards	<p>With some minor exceptions these regulations are quite similar in the Nordic countries. They represents an opportunity in stimulation of energy efficient renovation (O)</p>
Subsidies/ grants/ marketing campaigns:	<p>Sweden and Denmark: No subsidies for thermo graphic measurement of a building (W) Finland: In 2010, maximum subsidy of 25 % of the accepted costs is available for low-income families for improving energy-efficiency of their single-family house or implementation of renewable energy. (S-subsidy available/W- too low?) The different types of subsidies in the Nordic countries might influence energy efficient renovation, in some cases motivating to holistic solutions but in other cases could lead to sub optimising. Both governmental and private actors are important in this respect. (S/ W)</p>
Customer needs	<p>It is important to focus on the time window: which opportunities could be used to communicate more energy efficient renovation? What type of renovation is needed? Identify also energy efficient solutions which may be done without total renovation. (O)</p> <p>Based on the above scheme the best time windows and opportunities for stimulating extra renovation seems to be: (O)</p> <ul style="list-style-type: none"> • Warmer house in winter • Reduced draft • Improved physical condition of a house • Improved condition of windows • Reduced energy costs • Improved indoor climate • Nicer indoor environment • Change of energy supply system • Financing of above improvements

TOPIC	STRATEGIC PLANNING
Value chain	<p><u>Utility companies:</u> Finland and Sweden: These companies only want to give advice. They are less interested to take action towards energy efficiency. (W)</p> <p><u>Insurance companies:</u> There might be limitations on the coverage of the insurance depending on the age of the house or different building parts. (O)</p> <p><u>Technical consulting firms:</u> (S)</p> <p><u>Potential new players:</u> (S) Sweden: Installation workers of windows are a certain profession in Sweden. Small installation companies throughout Sweden specialized in glazing, especially in the renovation market, “Glasmesteri”. Finland: Special windows and door studios, system suppliers. All Nordic countries: Real estate agents. The industry should be interested in the energy efficient renovation because the value of the property/house rises. (S)</p> <p><u>Common key actors for the Nordic countries:</u> (S) The key role actors are:</p> <ul style="list-style-type: none"> • Contractor/carpenter • Real estate agents • Utility • Hardware stores • Technical consulting (energy/engineering) and architect companies • Type house manufacturers • Insurance / Banking • Industry <p><u>Cooperation between actors:</u> (O) We should not focus only on which actor could play the key role, but also who could cooperate to deliver a complete renovation package.</p> <p><u>Companies similar to type house suppliers:</u> (O) are interesting actors for a total renovation package. They possess technical design, construction-knowhow etc. The existing type house suppliers do not have the knowhow for renovation, although a heat pump, ventilation system etc. are the same whether it is a new house or a renovation project. How can we provide with the proper knowhow for renovation?</p>
Complete service packages	<p>Trustworthiness regarding one-stop-shop. Suggested alternatives: (T AND O) Supply an independent 3rd part to be the customers’ advisor. This advisor can provide with objective information about what should be done, give quality assurance, test of performance and result, included cost. Use an independent known public actor such as ENRA has done with VTT Enova – Norway Who should pay for this independent part? Total package versus neutral counselling? The amount and quality of this information may vary as well. So will the cost of this information. (O)</p>

TOPIC	STRATEGIC PLANNING
6-forces	<p>The one-stop-shop should offer tailor made services for sustainable renovation of a single family house. This should include the building envelope, insulation, windows, materials, heating and ventilation systems etc.. The one-stop-shop should have the knowhow about competent firms who can offer the additional services, price knowledge and how to organize the work in a cost-effective way, in the right order, and to the wanted quality. (O)</p> <p><u>Core business (O):</u></p> <ul style="list-style-type: none"> • Guide for good renovation • Energy efficient renovation up to passive house level (already core business for some companies offering new houses). • To buy the physical components for the right price • Package of renovation • Financing (by a network cooperation, or a bank can be on the spot to help figure out the expenses and need of investment) <p><u>Additional services/added value (O):</u></p> <ul style="list-style-type: none"> • Trustworthiness, Help to make a complete and better decision, Give the buyer a “better feeling” for doing his piece of improving environment, Bathroom, Kitchen, Plumbing, Roof, Ventilation (better indoor air) <p>Most important suppliers:</p> <ul style="list-style-type: none"> • Insulation, Window, Ventilation supplier, Heating system suppliers, Energy certificate, Energy consultants <p>Most important competitors:</p> <ul style="list-style-type: none"> • All specialists companies already offer their core business, Hardware stores, Traditional renovation companies, “Cowboys” – unserious companies, Companies selling special systems <p><u>Potential competitors (T):</u></p> <ul style="list-style-type: none"> • Utility companies <p><u>Substitutes (T):</u></p> <ul style="list-style-type: none"> • New house suppliers <p><u>Complementary industries (O):</u></p> <ul style="list-style-type: none"> • Banks, Real estate companies, Interior designers, Companies offering renewable energy systems – District heating companies, Energy consultants, Utility companies, Insurance companies, Authorities <p>Possible cooperation between public and private actors could be: (O)</p> <ul style="list-style-type: none"> • Quality assurance done by independent 3rd part • Education / training – who can give them this training – and how to do this? Develop a proper education system • Having public offices joining this solution gives trustworthy to the project • Public could make sure we have a proper labelling for the house = stimulate private house owners to be interested in labelling their house, and renovate in an energy efficient way. • The public could give a sort of certificate to the one-stop-shop guaranteeing that this is a good concept, and further on could this be developed according to the ISO-standard system? A sort of certificate for the procedure of energy efficient renovation ? <p>(Ref. Austria – they have such a system)</p>

3.8. Potential piloting models

Based on the discussions so far, there are some preliminary conclusions of possible piloting models. These are described in the next subchapters. As SuccessFamilies as a research project is proceeding, it is likely that more models may appear.

3.8.1 Joint venture of industry, retailers and contractors

Consortium of industry actors with complementary products defines a full service package which they even can brand. This also includes hardware stores.

Directly involved: An industry actor with more than one relevant product, which means that the company has a very strong interest in succeeding with a broader concept.

Other actors: The most important complimentary actors and retail actors

An example of this is the two hardware store chains (Rautia & K-rauta) in Finland which offer some form of complete renovation service packages. These services also include energy guidance based on Motiva Oys material.³

3.8.2 Joint venture of construction/renovation, industry and architect/engineering companies

Directly involved: Medium sized renovation company.

Other actors: Suppliers of key components/material, energy auditor, and architect/engineering company if these capabilities do not exist in house. An example of this is ENRA concept in Finland.

3.8.3 Complementary businesses expand their business into renovation

Key actor could be either: Real estate agency, insurance company or utility. The key actor takes advantage of its existing market position, to sell a complete package which they compose by using subcontractors.

Directly involved: Installer or utility to change heating system, carpenter to install windows, construction company to improve insulation and/or install windows, and energy auditor to evaluate energy efficiency potential

Other actors: window/door supplier, insulation supplier, painters, heating system suppliers
Dong Energy from Denmark is a good example here. The company has established Cleantech.

3.8.4 Joint venture of type house producer, bank and home owner association

Directly involved: Type house producer for complete package for renovation of existing houses including in-house or external consulting engineers and architects with the necessary qualifications related to existing building

Other actors: Bank and mortgage credit institute, Home owners association – impartial consultants to make plans for renovation and quality control – renovate or new house.

3.8.5 Energy/building consultant, real estate agent and financing institutions, e.g. bank

In Sweden, energy declaration of houses is legally needed when houses are sold. The real estate agent hires an energy/building consultant to carry out energy audit and issue the energy

³ Motiva Oy is an expert company promoting efficient and sustainable use of energy and materials. Motiva operates as an affiliated Government agency (an in-house unit) and is fully owned by the Finnish state.

performance certificate. The consultant also inspects the physical condition of the house and the inspection report is made available to the potential buyers. Buyers have the obligation to verify the physical condition of the house. Hence before a signing the purchase agreement, they usually contact the building inspector to know more about the building inspection report. This provides a unique opportunity for the energy/building consultant to explain the potential buyer the need for energy efficient renovation. The consultant can offer the full service energy efficiency renovation and specific prices through prearrangements with the installers, carpenters, and others involved in renovating the building. The consultant could also have contacts with bank to recognize the energy performance certificate and the building inspection report to finance the renovation work.

Directly involved: Energy/building consultant and real estate agents

Other actors: Bank, installers and carpenters.

4. SWOT ANALYSIS

In the SWOT-analysis all strategic topics which are important for development of a one-stop-shop function are summed up. In the table below the overall strengths, weaknesses, threats and opportunities are listed, and as well specifically for each joint venture pilot:

Strengths	Weaknesses
<p>General:</p> <ul style="list-style-type: none"> • If a partnership is established it can create synergies in the “production” process – being smoother <p><u>Joint venture of industry, retailers and contractors</u></p> <ul style="list-style-type: none"> • Installation workers of windows specific business (S) • Specialist studios for windows and door suppliers, system suppliers (F) • Often the first contact of house-owners seeking answers to certain problems (i.e. good possibility to offer wider solutions) • If market oriented approach (customers’ needs) this could be used as a strength <p><u>Joint venture of construction and architect/engineering companies</u></p> <ul style="list-style-type: none"> • Strong competence within technical consulting firms • Installation workers of windows specific business (S) <p><u>Complementary businesses expand their business into renovation</u></p> <ul style="list-style-type: none"> • Utilities actively looking for new opportunities (DK, N) • Real estate agents see opportunities in rising estate values <p><u>Joint venture of type house producer, bank and home owner association</u></p> <ul style="list-style-type: none"> • Type house producers possess full knowledge about the different house types, constructions, technical solutions, drawings and construction year. <p><u>Energy/building consultant, real estate agent and financing institutions, e.g. bank</u></p> <ul style="list-style-type: none"> • Direct contact with homeowners when a house is sold; issue energy performance certificate • Possess knowledge about energy issues and building installations • Do not carry out the renovation work; flexible to work with multiple actors to offer the best service and price 	<p>General:</p> <ul style="list-style-type: none"> • No actors alone possess an overall competence to supply a holistic solution • Trustworthiness of actors which want to sell • Total package versus neutral counselling • The role of each actor is unclear <p><u>Joint venture of industry, retailers and contractors</u></p> <ul style="list-style-type: none"> • Lack of competence in energy analysis • Industry has focus on selling their own products • If they focus only on their own products, this might be a weakness – product focus instead of market focus <p><u>Joint venture of construction/renovation and architect/engineering companies</u></p> <p><u>Complementary businesses expand their business into renovation</u></p> <ul style="list-style-type: none"> • Utility companies less interested (Fin, S) • No or limited relevant skills • Core focus for utilities is to sell energy <p><u>Joint venture of type house producer, bank and home owner association</u></p> <ul style="list-style-type: none"> • Type house producers have competence only on new construction • Core business of banks is far from renovation <p><u>Energy/building consultant, real estate agent and financing institutions, e.g. bank</u></p> <ul style="list-style-type: none"> • Limitations in getting loan from banks

Opportunities	Threats
<p>General: Segments with biggest potential :</p> <ul style="list-style-type: none"> • Houses built in the 1960 and 1970 • Houses built before 1940 pre-war (except Finland) • Houses in the post-war period (Finland) • Making stereotypes open for replicas • Different subsidies programs in all 4 countries • Customer needs to be filled: <ul style="list-style-type: none"> - Warmer house in winter - Reduced energy costs - Reduced draft - Improved physical condition of a house - Improved indoor climate - Nicer indoor environment - Increased value of the house? • New alliances to create a complete renovation package • Smart use of governmental bodies to build credibility • Enova (N) offers free access to experts for training • Cooperation with suppliers • Energy labelling <p><u>Joint venture of industry, retailers and contractors</u></p> <ul style="list-style-type: none"> • Develop a market which is less volatile to economic cycles <p><u>Joint venture of renovation/construction and architect/engineering companies</u></p> <ul style="list-style-type: none"> • Possibilities for networked business based on existing networks from new construction <p><u>Complementary businesses expand their business into renovation</u></p> <ul style="list-style-type: none"> • Use existing market position to expand product range • The bank is neutral part in this type of business • Insurance company possess also technical in-house competence (LEIF) on via networking <p><u>Joint venture of type house producer, bank and home owner association</u></p> <ul style="list-style-type: none"> • Offer renovation as an alternative to build a completely new house? <p><u>Energy/building consultant, real estate agent and financing institutions, e.g. bank</u></p> <ul style="list-style-type: none"> • Use their existing network with other actors, e.g. real estate agents, to target houses sold in the market 	<p>General:</p> <ul style="list-style-type: none"> • Lack of interest in the market • Possible conflict of cooperation between private and public actors? • Fragmented solutions as competitors • Cowboys – unserious companies • Cost focus leads to limited renovation • Strong DIY tradition in some countries <p><u>Joint venture of industry, retailers and contractors</u></p> <ul style="list-style-type: none"> • Perceived as not trustworthy? <p><u>Joint venture of construction and architect/engineering companies</u></p> <ul style="list-style-type: none"> • Perceived as very expensive? <p><u>Complementary businesses expand their business into renovation</u></p> <ul style="list-style-type: none"> • Enter into wrong alliances as they are not qualified to assess technical skills of partners, resulting in bad examples. <p><u>Joint venture of type house producer, bank and home owner association</u></p> <ul style="list-style-type: none"> • Perceived that will only sell a new house • Small business compared to sell a new house <p><u>Energy/building consultant, real estate agent and financing institutions, e.g. bank</u></p> <ul style="list-style-type: none"> • Trustworthiness: Customers may consider that the recommended measures in the energy declaration are meant to suite business interest of the energy consultant

5. CONCLUSIONS

In the SWOT-analysis all the important factors influencing the renovation market of single family housing today are listed up.

The most important strength seems to be the fact that establishing partnerships can create synergies in the “production process” and make the way to energy efficient renovation smoother. This leads to the most important weakness; no actors alone possess an overall competence to supply a holistic solution. Trustworthiness of the actors and total package versus neutral counselling also represents a challenge. The overall threat is the fact that a simple cost focus leads to limited renovation and reduce interest in the market.

But the opportunities in this market are several, and the most interesting segments are the houses built in the 1960s and 70s as well as houses built before 1940 and the post-war period. These building types seem to have the biggest energy saving potential.

All the factors represent opportunities and barriers which the future marketing strategies for sustainable renovation concepts have to take into consideration. All the general barriers and opportunities will be covered in these strategies, but as there will be established different types of joint-venture solutions, there might be special strategies connected to the different types of one-stop-shop solutions.

All steps of the business chain are addressed to find out how to best promote the use of energy efficient solutions: how to get the service providers to sell these products and how to make the customers to buy them.

The strategies will be defined in deliverable D2.2.

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