New business models for holistic renovation solutions of single family houses

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Extended abstract

Summary

Single family houses represent the biggest potential for energy savings within residential buildings in the Nordic countries. In earlier research project [1] it highlighted that there is a missing link between the single family house owner and various segregated offers of single solutions for renovation and/or energy efficiency installations. In the two international research projects SuccessFamilies and One Stop Shop, establishment of new business models as pilots for bridging this gap are now being monitored.

Two of the pilots as “one stop shops”, a retailer chain in Finland and a daughter company of a Norwegian manufacturer of insulation, are described and discussed.

A key issue for any business model which offers an integrated service from analysis of the house and recommendations for measures is the trustworthiness of the supplier.

As a holistic energy efficient renovation project is a “new” and unknown service to single family house owner and at same time a costly investment, it is important for the suppliers to find adequate ways of communicating through each phase of the buying process. There are various challenges in each of the phases which have to be solved differently.

Keywords: holistic renovation, single family houses, business models, market strategies

1. Introduction

Two ongoing research projects both focus on how to create a one stop shop for owners of single family houses. This in order to meet the challenge the house owner faces as he is left to himself to consider what actions should be implemented to upgrade his house.

The first project which started in 2009 and will conclude by spring 2012, is “SuccessFamilies” and
is lead by VTT. Their partners are Technical University of Denmark, Mid Sweden University and the consulting company Segel AS in Norway. The second project, which started in September 2010 and will conclude by autumn 2012, is “One Stop Shop” and is lead by the Passive House Platform in Belgium. Their partners are BBRI, Belgian Building Research Institute, Technical University of Denmark, VTT and Segel AS.

This paper describes relevant strategies for a business model of one stop shop. As part of the international research cooperation different pilots are monitored. In this paper preliminary experiences from different business models will be discussed.

2. **Different business models and possible strategies**

As part of SuccessFamilies potential business models were defined [7]:
1. Joint venture of industry, retailers and contractors
2. Joint venture of construction/renovation, industry and architect/engineering companies
3. Complementary businesses (such as utilities) expand their business into renovation
4. Joint venture of type house producer, bank and home owner association
5. Energy/building consultant, real estate agent and financing institutions.

In the OneStopShop project a model for cooperation between different building and industry actors is being developed.

As delivery of the project SuccessFamilies several business models are described in “Report on business models for one-stop-shop service for sustainable renovation of single family house” [8] based on Osterwalder&Pigneur Business Model Generation [5]

In this paper two of the business models are presented and relevant strategies are formulated for one of them. Both belong to the first category above, but at same time they are quite different. As part of SuccessFamilies and One Stop Shop further models will be studied and described later.

3. **Conclusions**

So far there are no business models for holistic renovation of single family houses which have existed so long that it can verify the “avenue to success”. As the two research projects SuccessFamilies and One Stop Shop will monitor pilots until 2012 (spring and autumn respectively), lessons learned will be gathered till the end of the projects.

However, the idea has proven to be of interest for commercial actors in different parts of the value chain. This is demonstrated by their involvement in these R&D projects and their willingness to invest in developing the idea and testing it through real pilots.

A main challenge for a success of a “one stop shop” model is to have a clear understanding of the house owner needs in a broader perspective than pure energy related issues.

In the process to come it remains to see which models are profitable and at same time fulfil the house owner needs in a sustainable way.

The research will be continued within the project SuccessFamilies until Spring 2012 and the ERANET Eracobuild project “From demonstration projects towards volume market: innovations for one stop shop in sustainable renovation” until Autumn 2012. Funding was provided by IWT (Flanders); Nordic Innovation Agency (Norway and Denmark); Tekes, VTT, City of Porvoo, ARA (Finland) and Formas & Swedish Energy Agency, Jämtlands county administration, Sweden.
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Summary

To achieve international goals for combating the climate change it is necessary to reduce emissions also from the existing building stock. Single family houses represent the biggest saving potential within residential buildings in the Nordic countries. In earlier research project [1] it is highlighted that there is a missing link between the single family house owner and various segregated offers of single solutions for renovation and/or energy efficiency installations. In the two international research projects SuccessFamilies and One Stop Shop, establishment of new business models as pilots for bridging this gap are now being monitored.

Two of the pilots as “one stop shops”, a retailer chain in Finland and a daughter company of a Norwegian manufacturer of insulation, are described and discussed. Both pilots have strong owners with financial muscles to systematically and patiently develop sustainable concepts, and capable to upscale the concept to cover national markets. Even if the actors chairing the two different pilots have different positions in the value chain, the core idea for both is quite similar. The strongest deviation between these pilots is how they are organised towards their respective partners. It is also interesting to see that one has a narrower focus on market segments while the other (the retailer) has a broader scope.

A key issue for any business model which offers an integrated service from analysis of the house and recommendations for measures is the trustworthiness of the supplier.

As a holistic energy efficient renovation project is a “new” and unknown service to single family house owner and at same time a costly investment, it is important for the suppliers to find adequate ways of communicating through all each phases of the buying process. There are various challenges in each of the phases which have to be solved differently.

Keywords: holistic renovation, single family houses, Nordic countries, business models, market strategies
1. Introduction

Two ongoing research projects focus on how to create a one stop shop for owners of single family houses. This in order to meet the challenge the house owner faces as he is left to himself to consider what actions should be implemented to upgrade his house. The first project which started in 2009 and will conclude by spring 2012, is “SuccessFamilies” and is lead by VTT. Their partners are Technical University of Denmark, Mid Sweden University and the consulting company Segel AS in Norway. The second project, which started in September 2010 and will conclude by autumn 2012, is “One Stop Shop” and is lead by the Passive House Platform in Belgium. Their partners are BBRI, Belgian Building Research Institute, Technical University of Denmark, VTT and Segel AS.

This paper describes relevant strategies for a business model of one stop shop. As part of the international research cooperation different pilots are monitored. In this paper preliminary experiences from different business models will be discussed. So far six different business models are identified, and four or five of these will be monitored and experiences will be documented through the piloting phase.

Some of the issues which are addressed in the research projects are:
- How to understand and respond correctly to the house owner real needs?
- How to make the house owner capable to understand the value of a holistic approach in renovation of his home?
- How to organize and share the risk among the involved actors of “one-stop” renovation projects?
- How to include cooperation with complementary actors such as banks, real estate agents and insurance companies?

2. Methodology

2.1 Theoretical framework

As part of the above mentioned international research projects the competitive arena of newly established or potential new business models for holistic renovation of single family houses have been studied. An important tool for identifying opportunities and threats for each pilot studied, the Six-Forces model is used [2]. The model is an extension of Porter’s famous five forces model [3] (suppliers, customers, competitors, potential competitors and substitutes), as the sixth force complementary actors is added. In addition it defines the company’s offer (service and/or product) in respect to the customer’s “real needs”. For renovation of single family houses this exercise was presented in a paper to SB10 in Helsinki in 2010 [4]. The exercise is useful in order to identify potential partners for establishing a holistic service for renovation of single family houses.

Osterwalder & Pigneur [5] have through an open innovation process together with 470 practitioners from 45 countries developed a methodology for generating business models. According to them, “a business model describes the rationale of how an organization creates, delivers, and captures value”. Nine building blocks are used to describe a complete business model; 1) customer segments, 2) value propositions, 3) channels, 4) customer relationships, 5) revenue streams, 6) key resources, 7) key activities, 8) key partnerships and 9) cost structure. The first 5 are mainly market oriented while the others how the service is created, organised and supplied.

How to define relevant strategies for each business model is done through a development of Igor Ansoff classic model for strategic issue management [6], where different external and internal issues are identified and classified in respect to importance and degree of urgency. How the company should react to the important issues is answered by formulating the strategies.

The basics of this, Segel AS uses in its strategic processes in a systematic and practical way. As part of the research work in “SuccessFamilies” this practical methodology is described in the report “Possible market strategies for one stop shops of renovation of single family house”,[7].
3. Different business models and possible strategies

As part of SuccessFamilies potential business models were defined [8]:
1. Joint venture of industry, retailers and contractors
2. Joint venture of construction/renovation, industry and architect/engineering companies
3. Complementary businesses (such as utilities) expand their business into renovation
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As delivery of the project SuccessFamilies several business models are described in “Report on business models for one-stop-shop service for sustainable renovation of single family house” [9] based on Osterwalder&Pigneur Business Model Generation [5]

In this paper two of the business models are presented and relevant strategies are formulated for one of them. Both belong to the first category above, but at same time they are quite different. As part of SuccessFamilies and One Stop Shop further models will be studied and described later. The researchers in SuccessFamilies (the project started in 2009) started to search for potential existing “one stop shops” for holistic renovation solutions for single family houses. No complete existing concepts were found. It was therefore established contact with actors in the Nordic countries which shown an interest in developing concepts for complete packages for the single family house market. The two pilots presented in this paper belong to the most promising examples.

3.1 Industry actor in cooperation with retailers and constructors

The Norwegian Bolig Enøk is a newly established daughter company of one of the two major insulation actors in Norway; Glava AS. One of Bolig Enøk’s business ideas is to offer a Project Manager to owners who have a need for renovation of their single family houses.

Due to the broad competence of the Project Manager, the homeowner gets technical analysis, recommendations and project management of the renovation process served by one person. The Project Manager takes care of contacts with all involved actors such as main contractor, subcontractors, authorities and financing institutions. The homeowner will be invoiced for the complete project by Bolig Enøk, which thereby take on the full risk towards the customer.

Business Model Canvas

*Based on information from Bolig Enøk AS, researches in the SuccessFamilies project have made a proposal of description [9] of this concept within the frame of the business canvas model of Osterwalder & Pigneur [5]. The table is revised by the company.*
Table 1 A business model canvas applied to full service or one-stop-shop concept for energy efficient renovation of single-family houses in Norway Example from Bolig Enøk, Project Manager (Based on Osterwalder and Pigneur, 2010).

<table>
<thead>
<tr>
<th>KEY PARTNERS</th>
<th>KEY ACTIVITIES</th>
<th>VALUE PROPOSITIONS</th>
<th>CUSTOMER RELATIONSHIPS</th>
<th>CUSTOMER SEGMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractors</td>
<td>Identify segments Marketing Carry out analysis of the house Offer for holistic renovation including: Project management Contact/approvals from local authority Tendering process Delivery of materials (partners) Construction (partner) Follow up</td>
<td>Simplified planning and buying process. Knowledge of holistic renovation including potential extension of the house. How to “use the time window” Personal visits to the homeowner On site analysis Technical analysis with recommendations</td>
<td>Dedicated personal assistance. The Project Manager is the main (only) contact to the customer</td>
<td>Owners of single family houses from 60-80ies in selected areas in the region of Østfold, Akershus and south east of Oslo. Homeowners who have capacity to increase their mortgage loan.</td>
</tr>
<tr>
<td>Local retail stores</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Various partners with expertise in building physics and energy and heating. (Sintef, Glava, KVT)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>KEY RESOURCES</th>
<th>CUSTOMER SEGMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Project Managers Administration and marketing personnel in Bolig Enøk Partners resources</td>
<td>Owners of single family houses from 60-80ies in selected areas in the region of Østfold, Akershus and south east of Oslo. Homeowners who have capacity to increase their mortgage loan.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COST STRUCTURE</th>
<th>REVENUE STREAMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries to Project Managers counts for majority of the costs. Therefore effective use of their hours is the most critical factor for profitability.</td>
<td>Analysis and Energy Certificate: NOK 10.000 incl. VAT per analysis.</td>
</tr>
<tr>
<td>Car costs</td>
<td>Renovation: NOK 100,000-3,000,000 incl. VAT per house renovated.</td>
</tr>
<tr>
<td>Marketing costs</td>
<td></td>
</tr>
<tr>
<td>Administration and support costs</td>
<td></td>
</tr>
</tbody>
</table>
Possible Market Strategies for the Project Manager
For the above presented business model possible market strategies have been formulated [6] (for detailed description of methodology please see [7]) by the researchers in cooperation with the company. The challenges identified in the report of the stakeholder interests [8] and issues appearing with the discussion with the company have been taken into account.

1. **Target group**
   Owners of single family houses from 60- 80ies in selected areas in the region of Østfold, Akershus and Oslo.
   Homeowners who have capacity to increase their mortgage loan.

2. **Complete package through local sourcing**
   The house must be considered as a system. Our product range and knowhow offered must reflect this as well as our network and co-partners. All products and craft services are provided through local tendering. These suppliers will therefore see an interest in developing this as a new business opportunity. Unserious actors will be avoided.

3. **Trustworthiness**
   All analysis, renovation recommendations, products, solutions and service providers will be evaluated during and after renovation. The best competence possible, courses and certification will be undertaken to build credibility. These actions should be addressed to all co-partners, local authorities and customers. This service including energy efficient renovation, including specific products should be recommended by Enova (public enterprise promoting sustainability). Through certification of the Project Managers and by tendering, the homeowner should be assured he/she gets a neutral counseling.

4. **Tailor made solutions**
   Through on-site visits and analysis, the Project Managers will make the house owner aware of his/hers opportunities to renovate the house into a good energy efficient standard, with a plan of action (what to do first), how to do it (offer certified carpenters) as well as a cost plan and subvention opportunities for the renovation process. Based on the analysis, competitive offers for holistic renovation are offered the house owner. Competent project management facilitates and reduces the risk of the renovation process. Through accumulated experience from the projects, stereotypes open for replicas will be made. The service includes updated information about all available subsidies to the project. These factors will increase the attractiveness of the service for the house owner compared with the option of doing it self.

5. **Marketing mix (the four P's)**
   The Project Manager Service (Product) will be offered at competitive terms (Price) as Bolig Enøk achieves good rates through their tendering process, and thereby also secure profitable business. By distributing the idea of a holistic approach through different medias (Promotion), potential customers awake their interest to visit information evenings arranged by Bolig Enøk and there describe how the service solves the customer's needs. During such events and followed up by on site visits (Place) the personal contact and trust will be established.
3.2 Retailer cooperating with contractors and industry partners

In Finland there is now being launched (as a pilot in Espoo/Helsinki) a concept of a holistic renovation service which is offered by the two hardware store chains K-Rauta and Rautia. K-Rauta is an international specialty store for builders, renovators and interior decorators. Its operating area includes Finland, Sweden, Estonia, Latvia and Russia.

Business Model Canvas
Based on information from K-Rauta, researches in the SuccessFamilies project have made a proposal of description [9] of this concept within the frame of the business canvas model of Osterwalder & Pigneur [5].

Table 2 A business model canvas applied to full service or one-stop-shop concept for energy efficient renovation of single-family houses in Finland. Example from K-Rauta (Based on Osterwalder and Pigneur, 2010).

<table>
<thead>
<tr>
<th>KEY PARTNERS</th>
<th>KEY ACTIVITIES</th>
<th>VALUE PROPOSITIONS</th>
<th>CUSTOMER RELATIONSHIPS</th>
<th>CUSTOMER SEGMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product and material suppliers (Insulation, heat pumps, heating systems, ventilation systems, fireplaces, windows, doors, lamps, all other building materials) Renovation service providers: planning, installations, renovations, energy surveys, heat camera inspections Bank</td>
<td>Sale of all products which are needed in house renovations. Sale of most of services which are needed in house renovations: from planning, construction to QA. Flexible financing services Energy surveys Solutions are sold in easy and understandable packages/modules Energy saving renovation service centers inside the stores</td>
<td>O-S-S to all kinds of renovation services. Fixed price given before buying. Options; all installed, partly installed, just products. Flexible project schedules. All other building and housing material products and services also from same vendor. Flexible funding.</td>
<td>Personal assistance</td>
<td>People renovating their houses</td>
</tr>
<tr>
<td>KEY RESOURCES</td>
<td>VALUE PROPOSITIONS</td>
<td>COST STRUCTURE</td>
<td>REVENUE STREAMS</td>
<td></td>
</tr>
<tr>
<td>Two well-known brands Distribution network</td>
<td></td>
<td>Material and product costs Labour costs (salaries &amp; overheads) Marketing costs Travel costs Subcontracting from the other partners</td>
<td>Payment from customers from the services and products purchased To be considered: Commission from suppliers</td>
<td></td>
</tr>
</tbody>
</table>

Strategies for this business model are still under construction, and may therefore not be presented in this paper.
3.3 Similarities and differences between the two models

The two business models are quite similar on the “customer side” (the right hand) but K-Rauta has a wider customer segment. The same counts for the key activities, although there is one major difference that the retailer may focus on communication towards customer visiting the hard ware store. The project manager concept needs to identify the segments and do targeted marketing towards selected segments.

The left hand side of the business model is rather different between the two examples, as they need different types of partners to complete the requested portfolio of competence. It is still a question for both how to build credibility for such a strong integration between analysis and complete delivery.

4. Discussion of challenges

So far there are no business models for holistic renovation of single family houses which have existed so long that it can verify the “avenue to success”. As the two research projects SuccessFamilies and One Stop Shop will monitor pilots until 2012 (spring and autumn respectively), lessons learned will be gathered till the end of the projects.

Based on preliminary experiences some important challenges are identified which will be discussed below.

4.1 Organizing the supply side
To find out how to organize the supply side for holistic energy efficient renovation, it is a good starting point to see how this is done for building of new single family houses. Often there is a main contractor which coordinates the work. The house owner may either be invoiced by each supplier of services and products, or by one main contractor who takes on the complete responsibility. The latter case is the model for a one-stop-shop for holistic renovation of single family houses.

The examples of business models presented in this paper, have both strong actors (financially and competence). Each takes on a clear leading position within the business model. Both also try to make use of existing complementary actors. In the Norwegian case it is important for Bolig Enøk not to challenge their mother company Glava’s main customers; the retailers and the contractors. As a consequence they use these existing channels as alliances and thereby enforce both the marketing and supply of the service.

The main contractor takes on the complete risk towards the house owner for consequences of poor planning and/or work/products. This risk will be distributed on the respective partner through ordinary B2B contracts where each will be responsible for his part. The main contractor must however take on the “system-risk”, and take this into account when calculating his margin.

When different business models are proven viable, the organizational issue should not be the major problem for the development of this market.

4.2 Understanding of the house owner needs and the buying process
By implementing a new business model where the starting point for the main actor is to promote a holistic and very energy efficient renovation, it is a danger that the supplier is to narrow in his approach. A very critical factor for success is to understand the process seen from the house owner, who may see other issues than energy cost as more important.

Kotler defines the buying process through five stages [10]:
- Problem Recognition
- Information search
- Evaluation of alternatives
- The Purchase decision
- Post-purchase behaviour
For complex products and services which is the case for holistic renovation, the customer moves through all stages.

Problem Recognition
This is a crucial point for the supply to address thoroughly. To exemplify a wrong approach; The message from the supplier of the service is that national authorities say we have to reduce CO2 emissions, therefore you should renovate your home with energy efficient measures. In this case, the supplier narrowly tries to push his “core service” (holistic energy efficient measures).

A better approach is to start with a clear picture of the customer segments to be targeted, and focus on how to communicate in the problem recognition phase. As the customer has low knowledge about holistic renovation solutions, his problem recognition starts with specific situations as; “I need to change the windows because they are ugly and drafty”. His problem may at this stage not be perceived at all to energy use.

Both business models presented in this paper may influence the house owner to recognize his problem. Except from advertising, the communication with the customer is quite different between the two models. The retailer may reach him through exhibitions within the hardware store while he is visiting it for order purposes. By “teasing” his pains he may be aware of a broader scope of his needs than what he initially thought of. An important challenge is how to make the home owner aware of the specialties of this service. Examples of how to transform pains into happiness at this stage could be:

- Changing windows? Don’t miss the opportunity to ….
- High energy costs? Do you know all options how to solve this?
- Renovation – how to simplify the process?
- Renovation – smart and long lasting measures or sub-optimized ad-hoc actions?

The business model with the project manager does not have an exhibition where potential customer visits for other purposes. He is therefore left with advertising and other types of invitations either to information evenings or home visits. As it is limited what information is possible to communicate to the mass, the message has to trigger the house owner basic needs in this situation.

Information search
When the “problem” (or need) is identified the house owner starts more actively to search for information (the information mentioned above is sent to a person which initially is a passive mode).

Kotler [10] categorises the sources for information into four groups
- Personal sources: such as family, colleagues and friends,
- Commercial sources: advertising, salesmen, retailers, displays
- Public sources: mass media, national authorities
- Experimental sources: examining, using the product (could be a pilot)

Energy efficient holistic renovation solutions are still not well known among the broad public and personal sources will therefore at this stage play a limited role. The personal sources have however a lot of experience with simple solutions such as installing of heat pumps, which friends still strongly recommends. Therefore, for those considering energy saving measures (in the previous phase), installations of heat pump is probably one of the first options which are considered. Such single solutions are therefore a major competitor to holistic renovation solutions.

At same time the suppliers of such single solutions send the message of quick and easy ways for energy saving. In the One Stop Shop Project it also studied how existing web platforms integrate the supply and demand side for energy efficient renovation [11]. One of the main conclusions is that few webpages present a complete holistic approach for renovation of single family houses. In fact most promote only partial solutions.

Actors promoting holistic solutions have therefore to compete with these suppliers for the attention
of the potential buyers. For new products and/or services it is always a challenge to build trust. Especially is this the case when the supplier of one-stop-shop also organizes the analysis and recommendations of solutions. The buyer will naturally question the neutrality of the recommendations, as he sees the interest of the supplier to sell as much as possible. This is one of the major issues which are addressed in these two research projects.

The national authorities spend a lot of resources in increasing the public awareness of the climate change. In many countries national campaigns are run for promoting energy efficient measures. In countries where single measures are promoted, it is a barrier for “one stop shops”. In those countries where this policy is now shifted towards more holistic solutions, “one stop shops” will gain from a conscious interplay with such initiatives.

The first buyers from a one-stop-shop are indeed experimenting with this service. It is crucial that these “pilots” are managed particularly well through all phases of the process. Excellent communication between all actors, where the main focus is on the customer will increase the possibility for successful reference projects. These examples will in the next stage be mentioned among personal sources locally as well as interesting news in public sources. If both the commercial actors and authorities actively use the examples in their promotion campaigns, it is possible to start a market evolution as “rings in the water”. The strongest effect is if there are good examples locally. In particular is this the case when the house owner becomes a personal source who recommends a holistic renovation to his network.

Evaluation of alternatives
When the potential buyer has gathered information about different options for renovations, he evaluates the options towards his preferences. The situation is quite different depending if the starting point was “need to cut energy costs” or “need of a nicer façade”. Through the evaluation phase several factors will be weighted towards each other, such as investment cost, expected look, comfort, easiness of implementation, image, net operational cost, risk for not fulfilling expectations, trustworthiness of supplier, etc.

At the end it comes out if the house owner trusts the potential supplier and his recommendations. A new service from an unknown sender is not likely to be chosen if the investment cost is high. A local reputable supplier will normally be in a strong position for such an investment. If this may be combined with well established brands and in compliance with the message promoted by the authorities, the likeliness of being chosen increases.

The Purchase decision
Even after a serious evaluation of alternatives, there may be other important factors which could lead the buyer to one or other conclusion. This could be sudden changes in energy prices due to specific events, bad news about similar project, change in personal situation (examples: loss of job, divorce...). Again the attitude of authorities towards such investments may also count, especially if it is supported with financial incitements.

Post-purchase behaviour
When the conclusion is made to buy the presented service, the deal is settled but not completed. The renovation phase implies a strong interaction between supplier and customer. How the renovation phase is perceived from the house owner (including all family members) may be as important as the final result of the renovation as such. Therefore the communication must focus on preparing the family of the challenges “around the next corner”.

When the renovation project is completed the period where the owner will experience if it was successful or not starts. As negative surprises may arise after several years, it means that this phase may last for a long time. The important point is whether the customer is satisfied or not. For single item products, a very low share of disappointed customers cares to complain to the supplier. For renovation projects we would expect this share to be higher due to a higher investment cost. Most major errors will of course be complained for. But there will also be situations where there are no “real” defects with the delivery, but the final solution simply does not fulfill the expectations
which were created before the decision to buy. Some of the customers will not come back to the supplier, but will instead spread their negative experiences through their networks. If the supplier of holistic renovation includes an after-sales service package as part of his deal, three major gains will be achieved:
Extra sale (even if it is not much)
Collection of results and experiences from own projects
Keep contact with the customer in the post purchase phase and prevent distribution of negative experiences.

5. Conclusions

So far in this research project it may be concluded that there are commercial actors in different parts of the value chain which see an opportunity in developing different approaches of “one stop shops” for energy efficient holistic renovations. The concepts are still in a development phase and differ in respect to how they are organised (as supply side). Due to the complexity of a holistic renovation project, it is a prerequisite with good partnerships even in the development phase. In all identified models there is however one main actor taking the lead and ownership to the business model.

A main challenge for a success of a “one stop shop” model is to have a clear understanding of the house owner needs in a broader perspective than pure energy related issues. The buying process might start with a non energy related problem with the house, and finally end up with an advanced energy efficient renovation project.

In the process to come it remains to see which models are profitable and at same time fulfil the house owner needs in a sustainable way.

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7. References

