



ERA-NET Eracobuild project

One Stop Shop - “From demonstration projects towards volume market: innovations for one stop shop in sustainable renovation”

(1st September 2010 - 31st August 2012)

Project Report WP 3 – Implementation Phase

Innovation in Supply Side Collaboration

Executive Summary

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The moderators of the Business Zoo

This report was written in fulfilment of the ERACOBUILD project entitled “One Stop Shop – From demonstration projects towards volume market: innovations for one stop shop in sustainable renovation”, supported by IWT - the Flemish agency for innovation by science and technology, Tekes and Nordic Innovation.

Project Website: www.one-stop-shop.org

Start date project 01-09-2010; duration: 24 months

Publication date of this report: 31st August 2012

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Project partners



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www.passiefhuisplatform.be

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1. Introduction

In theory, there is huge potential for reducing the energy consumed by existing single-family houses by thoroughly renovating them. For the successful market development of highly energy-efficient integrated renovations, supply chain collaboration is very important, while at the same time customer demand for integrated renovations has to be stimulated. A research and networking methodology was developed within the framework of the One Stop Shop project to identify and develop collaboration opportunities for various actor categories for advanced housing renovation in Belgium, Denmark, Finland and Norway. After developing an actor categorisation in each partner country, a networking event produced additional research results to defining new business opportunities related to process innovation to unburden the homeowner and to achieve less fragmented renovation processes. Ideas and methods were detected for stimulating collaboration and business model generation between different players on the renovation market, and for making innovators visible on the market.

2. Actor categories in various countries

Message: The One Stop Shop needs to guide the homeowner from one actor category to the next

The overall aim of the “One Stop Shop” project was to facilitate market uptake (volume market) of whole house renovations for single-family houses to very high energy standard while providing superior comfort and sustainability to occupants. Throughout the different studies within the project, the innovation adoption process of the homeowner was defined in different steps: **Information > Persuasion > Decision > Implementation > Confirmation**. These are five steps in innovation adoption decision processes, widely acknowledged by innovation researchers¹. We proposed that actors involved in an integrated communication channel – like a One Stop Shop - need to guide the homeowner through each step with information specific for that decision phase.

The first step in researching actor collaboration was to determine which supply-side actors need to collaborate. As part of further research, we identified important actors regarding supply chain collaboration in four different countries (Belgium, Denmark, Finland and Norway). As such we aimed to learn which actors need to cooperate and who plays what role in the innovation adoption process. For this reason, we continued the logic of the five steps in the innovation adoption process when categorising actors and defined actors for each country in actor categories as: informing, convincing, deciding, implementing, and/or confirming. The following Table 1 provides an overview of the detected actors and possible actors in various countries.

¹ See for example: E.M. Rogers, Diffusion of innovations, fifth edition, Free Press, New York, 2003.

	Belgium	Denmark	Finland	Norway
Informing actors	Various; label providers	Various; independent public organization, label providers	Various; House-owner association	Various; ENOVA
Persuading actors	Energy performance advisers, financial advisers, Flemish Energy Agency, municipalities, provincial network sustainable building, Passiefhuis-Platform, energy distribution managers, 'energy cutters', reference centres	Government, municipalities (Tupperware-model)	R&D actor, government, Regional Environment Centres	ENOVA, Norwegian State Housing Bank, municipality, savings bank, utility network supplier
Responsible actors	Homeowner, contractor, architect, project manager, consortium, renovation shop, turnkey supplier	Homeowner, educated craftsmen (energy adviser), energy consultants, architect	Traditional	House-owner, architect, building engineer, carpenter, small entrepreneur, house-owner association, Bolig Enøk, Enøksenteret
Implementing actors	Craftsmen; acknowledged craftsmen (public list), eco-cluster	Craftsmen (energy adviser or 'Green craftsman')	Complete service package providers, traditional first line services, industry	Trained craftsmen
Quality assuring actors	Cost managers, energy performance verifiers, project certifiers	ESCO light	Energy consultants, service providers, Inspecta	(warranty)

Table 1: Detected (possible) actors in various countries for the development of supply chain collaboration in One Stop Shop initiatives.

- Informing actors (information).

A very large group of possible actors in each country can be found in the informing branch. This role can be fulfilled by federations, policy supporting actors, non-profit organisations, research organisations, energy distribution net managers, manufacturers of products, and so on.

- Convincing actors (persuasion).

In all country reports, persuasion was related to financial support, since this encourages homeowners to choose thorough renovation. Persuading actors are therefore mostly those actors that provide financial support, such as governments, banks or energy distribution companies.

- Responsible actors (decision-makers).

Practically, integrated renovation needs strong coordination and well-informed decision-making. We found that in the partner countries for the market of owner-occupied single-family houses, owner-occupiers are still often responsible for their choices despite having very limited knowledge of the technical issues involved in innovations. The decisions made by the homeowners depend heavily on the advisor they choose. Occasionally, an advisor such as an architect takes over (part of) the decision process. A number of different actors were identified who provide such guidance on the subject of renovation. In the case of minor renovation work, the homeowner will rarely hire a consultant, but instead make a decision based on the advice of the contractors or craftsmen hired to carry out the renovation. In case of thorough renovation work, we found that the homeowner may hire an energy consultant to help guide the process and make the right decisions. Energy consultants were engineers, architects, turnkey suppliers or building contractors, for example. Advanced energy performance certificate advisors do not currently act as

responsible actors, although such opportunities were detected in Belgium. In Norway, emerging opportunities were detected for project managers as they were working directly for homeowners.

- Implementing actors (implementation).

In order for an energy renovation to be effective, it is important that solutions are implemented appropriately. Although many SMEs claim to have some experience with deep or integrated renovation, the previous survey showed that individual craftsmen still need to be educated on the specifics of deep renovation. There is shortage of training courses on this subject. However, all the countries studied have course material available that can be developed further in order to obtain more expertise in this field. One course of action to support the supply side would be to install a course on the specific topic of the project management of integrated renovations.

- Quality-assurance actors (confirmation).

The limited knowledge of implementing actors and the issue of consumer trust led to some concerns about processes in which actors collaborate. Thorough renovations were perceived to need some form of quality assurance. Energy performance guarantees, avoiding thermal bridges and achieving high airtightness are particularly important. In the partner countries, there is currently no general use of a specific quality assurance mechanism for integrated energy renovations. All countries rely on the applicable legal warranty period. To some extent, different voluntary labels are available in different countries. For example, the Belgian Passive House Platform offers a passive house certificate for renovated housing.

More information:

Mlecnik E., *et al.* (2012) Project Report WP 3 – Implementation Phase Innovation in Supply Side Collaboration: **Renovation Actor Categories in Partner Countries**, Available on-line: <http://www.one-stop-shop.org>.

3. Business Zoo - Innovative business models for integrated housing renovation

Message: Homeowners expect one single point of contact to take responsibility.

Further research focused on exploring opportunities for collaboration between actors from different categories as explained above. As part of the One Stop Shop project, a specific networking methodology was developed which involved clustering innovative players to detect novel business models and reduce the fragmentation of the renovation process for single-family houses. A unique international business networking event was developed, entitled "Business Zoo", and was first held in Antwerp, Belgium on 18 April 2012. This event aimed to inspire actors regarding novel forms of collaboration in the renovation chain in order to realise integrated sustainable housing renovation, using elevator pitches and problem discussions in small groups.

In group discussions, the participants were grouped into the actor categories mentioned above using animal pictograms, and were asked to brainstorm on renovating a particular house. In this exercise, the homeowner was given a central role in enforcing strict and ambitious demands, so that the supply side

actors were forced to think from the client's perspective. We used a predefined 'animal gathering' canvas (see Figure 1) to facilitate this process. At the end of the day, the participants were urged to take up the challenge of developing new business models, expanding the previous case development to the volume market. Different groups developed specific integrated business models for deep and sustainable renovation, using a business model generation canvas (see Figure 2).



Fig. 1. Impression from the Business Zoo workshop (animal gathering canvas development).

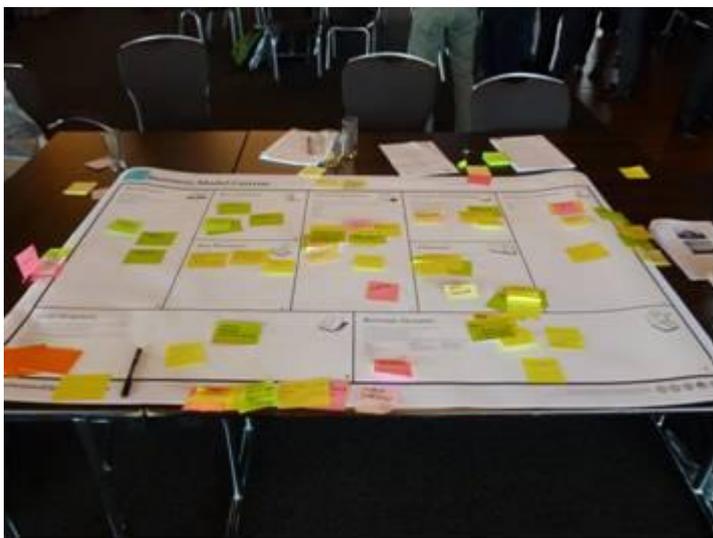


Fig. 2. Impression from the Business Zoo workshop (business model canvas² development).

The "Business Zoo" methodology – a new method of networking – allowed different market players to identify collaboration opportunities with potential national and international partners. The questions addressed during the networking event included various important issues such as how to make the cost of renovation fully transparent, how to speed up the renovation of large stocks of post-war housing with faster construction methods, how to adapt energy performance certificates – and energy performance

² Based on A. Osterwalder & Y. Pigneur, Business Model Generation, <http://www.businessmodelgeneration.com>

advisors – for integrated renovations, and so on. Furthermore, new business opportunities were explored resulting in the development of a fictitious business model for collaboration between different renovation market players, such as architects, contractors, project managers, suppliers, do-it-yourself stores, owners, financiers, city councils and communities, and so on.

During the event, we detected that substantial innovation was still needed on the supply side, especially regarding collaboration between different craftsmen and experts. In the growing market for deep renovation, homeowners can no longer be expected to coordinate the whole renovation process, to find all the information concerning deep renovation solutions and examples, to contact, contract and coordinate a range of individual craftsmen, to ensure quality while keeping costs and energy performance under control, and all the while managing the administrative burden and the uncertainty over financing the whole project. In order to prepare for a growing market, companies must be aware that the homeowners expect one single point of contact to take responsibility, act as project manager, and ensure quality and efficient, rapid execution.

More information:

Mlecnik E., *et al.* (2012) Project Report WP 3 – Implementation Phase Innovation in Supply Side Collaboration: **Business Zoo - Innovative business models for integrated housing renovation**, Available on-line: <http://www.one-stop-shop.org>.

Mlecnik E., *et al.* (2012) **Collaboration opportunities for advanced housing renovation** Paper and poster presented for the IEA SHC Conference 2012, San Francisco, USA; 9-11 July 2012; paper to be published in Energy Procedia, Elsevier.

Business Zoo - Innovative Business Models for Integrated Housing Renovation, Event information available on-line: <http://www.b2match.eu/businesszoo>.

4. Development of a public actor list for promoting sustainable housing renovation

Message: Innovators should be made visible.

An important challenge remains to shape regional supply chain collaboration to effectively increase the number of such renovations taking place. For successful market development, it will be necessary that different actors cooperate to stimulate supply and demand. Those saying that the market is not ready for this – or that homeowners are not asking for integrated renovation - are quite right if they mean the majority of the market. Any new product or service has to be adopted first by the innovators in the introduction phase and thereafter the early adopters in the growth phase before it can reach the early majority in the volume market. To fully exploit the market development potential, the innovator activities should serve as input for a strategic reflection by actors which consider taking an active part in developing the market for advanced housing renovation.

The big challenge is, how service can be kept high-quality and independent, while maintaining and developing partners' and customers' trust. Before a full integrated renovation service can be provided, one has to think of marketing and market differentiation. One possible channel that was studied in the One

Stop Shop project is using the Internet, because it is ideal for information-sharing of technologies, solutions and demonstration projects. One can also share experiences online. On the other hand, various interviews with clients and public actors showed that there is a specific need for clients and procurers to easily find experienced actors, particularly architects, contractors, consultants and installers. The research report describes in detail how such a public actor list could be organized for marketing and selection of innovators in renovation services, using the situation in Flanders, northern Belgium, as an example.

Suppliers such as contractors currently rarely offer integrated and/or sustainable renovation as a service or product. For realizing integrated renovation, usually collaboration occurs with some architect, consultant, contractor and/or installer who have previously shown experience with demonstration projects or in previous reference projects. In general, there is an urgent need to make these innovators visible on the market. A first opportunity to stimulate collaboration with innovators therefore lies in listing them and making them visible in the wider market. Particularly non-profit and customer organizations were observed to be able to influence demand by providing neutral information about the benefits of integrated and/or sustainable housing renovation and the available market players, also towards policy actors.

The Belgian partner Passiefhuis-Platform vzw (PHP) – a non-profit organization – explored the opportunity of developing a public actor list for sustainable housing renovation using available information on regional/national demonstration programmes, projects and related actors. In the end, an actor listing was published for eliminating the barrier of the difficulty for the homeowner to find appropriate and experienced actors, as step towards increasing demand for integral renovations by homeowners to which the companies should answer with service solutions, amongst which the One Stop Shop approach is one of the possibilities. The public list of actors (Flanders/Brussels) will be launched and distributed in Belgium at the Passive House 2012 Professional Day on 7th September 2012 at Tour&Taxis in Brussels, where also the final workshop of the One Stop Shop project will be held.

The growth and continuation of the listing is still a challenge. An improved coupling is needed with existing labels, energy performance certificates, customer feedback, quality assurance and development of courses for professionals.

More information:

Mlecnik E., *et al.* (2012) Project Report WP 3 – Implementation Phase Innovation in Supply Side Collaboration: **Development of a public actor list for promoting sustainable housing renovation in Flanders and Brussels**, Available on-line: <http://www.one-stop-shop.org>.

5. Conclusion

The current fragmentation – separate SMEs each doing a fraction of a supposedly integrated renovation – cost escalation, lack of knowledge and lack of project management are very important barriers to the advanced energy renovation of single-family housing. Our research has found that renovation processes need to be reformulated and better collaboration structures need to be developed to unburden the client. In order to respond better to the supply-side concerns identified, both supply- and demand-side actors need to be informed in a more targeted way. The five steps in innovation-decision processes (information, persuasion, decision, implementation, confirmation) provided an interesting basis for the further

development of various elements in a communication model, which defined in the first part of this work package.

We related different actor categories to the homeowners' innovation-decision phase in the partner countries (Belgium, Norway, Denmark, Finland) and identified a common need to develop a pool of experienced actors for implementation and quality-assurance, as well as a need for support schemes for integrated renovation. Collaboration by different actor categories would support the market development that is needed, as well as the development of a web platform. A particular challenge is to increase the flow of technical information on integrated renovation that is required, as well as project management knowledge, from the many informing actors to the many less experienced implementing actors, which are mostly SMEs.

We also gained further insights when networking different actor categories. In the single-family housing renovation market, it appears that market-proof solutions are needed when it comes to alleviating financial burdens and project management. Ideally, innovators would jump into this gap in the market and set themselves up as project coordinators who can support the homeowner throughout the decision-making process.

To fully exploit the market development potential, the innovator activities should serve as input for a strategic reflection by actors which consider taking an active part in developing the market for advanced housing renovation. A direct opportunity to make innovator activities visible was found in the development of an actor listing. Such a listing eliminates the barrier of the difficulty for the homeowner to find appropriate and experienced actors. It also serves as step towards increasing demand for integral renovations by homeowners to which the companies should answer with service solutions, amongst which the One Stop Shop approach is one of the possibilities.

Acknowledgements

Funding for this research was obtained within the ERANET Eracobuild project "From demonstration projects towards volume market: innovations for one stop shop in sustainable renovation". The Flemish partners were funded by IWT, the agency for innovation by science and technology of the Flemish Community. The Norwegian and Danish partners were funded by Nordic Innovation. The Finnish partner was funded by Tekes – the Finnish Funding Agency for Technology and Innovation, the Technical Research Centre of Finland (VTT), City of Porvoo, The Housing Finance and Development Centre of Finland (ARA).