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Developing New Sustainable Strategy: The Struggle of Small and Medium Swedish Contractors Companies to Experiment with Business Models.

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Abstract

Purpose: This paper analyses the efforts and challenges met by Small and Medium contractors to develop new business models when struggling to implement retrofit solutions for single house owners' renovation.

Design/methodology/approach: The paper builds on a four years action research project with 21 Swedish contractors from the Gothenburg region testing the business model canvas to develop energy efficient solutions. The project method includes 67 interviews with craftsmen and their customers, 18 workshops gathering the companies in two groups to develop new sustainable business models and 16 shadowing of visits to their customers.

Findings : Our study underlines how SMEs contractors concentrated on their technical core business tend to underestimate their customer relationship. Both customer segments and relationships escape from formalisation as these companies do not dare to exclude any client and are inclined to reduce customer relationship to personal interaction. Besides, these project base companies are challenged by the blocks presented by the canvas and struggle to match the model with their own organisation.

Original value: Differently to most research on business models and sustainability this paper addresses the concrete difficulties construction SMEs face when implementing business models.

Keywords: Business models, constructions SMEs, sustainability

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Introduction

The social and legislative focus on sustainability has pressed the construction sector to optimise and innovate in term of both material and business processes. As buildings represent 30% of the total energy consumption, Sweden, following EU regulation has formulated national targets regarding energy and sustainability, but is facing challenges regarding their implementation (Boverket 2020). While new built is adapting to new regulations, renovation of existing building stock is lagging behind. In particular properties built between 1950 and 1975, representing 43% of the Swedish dwelling are in need of renovation (Boverket 2015, SCB 2014). Houses of this period are outdated compared to today material efficiency, and technical components such as ventilation systems, bathrooms, laundry, drainage, windows or roofing are reaching the end of their lifetime expectancies. Whereas large real estate and contractor companies are taking care of large housing development, the responsibility of renovation scope for single-family houses is let to their owners who usually mandate small and medium sized enterprises (SMEs) to perform the work. However, the majority of these renovations aims at increasing comfort and aesthetic design to the detriment of energy efficiency solutions (Bravo et al. 2019). The situation seems to be similar to other European countries where energy renovation has still not emerged as common practice (Bartiaux et al. 2014) and SMEs contractors are failing to substantially increase sustainability awareness among their customers (Naef et al. 2019).

To account for this situation, the lack of competences regarding new technology and innovation has often been put forward. However, retrofit can be successfully achieved by using existing technology, suggesting that the lack of retrofit is not only a technical challenge related to innovation but also a problem related to the market. To explore retrofit from a market perspective, we chose to look at how craftsmen engaged in single family house renovation could increase retrofit testing the use of business models. This approach enables to map the actual practices of a company and enable changes that requires crosscutting activities, inter and extra-organisational integration and focus on the customers' needs.

Based on an action research method, financed by FORMAS; the project aimed at supporting small contractors' companies from the Gothenburg region experimenting with Osterwalder and Pigneur's (2010) business model canvas, to develop their activities towards new energy efficient solutions for their customers.

Drawing on the results of this four years project (2013-2017) gathering 21 small companies active in different trades, the purpose of the present paper is to investigate how concretely these companies could benefit from using the canvas, identify the challenges they met in doing so and assess the potential of BMC to improve these companies' offers in term of energy efficiency solutions.

The paper is organised as follows: the next section explains what characterises a BM, BMC and sustainable BM and its constituting elements as well as the specific issues related to their applications for SMEs and energy efficient solutions. Next come the method and the empirical findings. A discussion and a derived conclusion end the paper

Theoretical frame

Single house energy efficient renovation and the construction sector

So far, the absence of success encountered by retrofits for this single houses has often been explained by the focus on technical aspects. The contractor SMEs who should promote and carry these new forms of renovations are said to be inadequately prepared to develop and adapt the latest technical solutions to their current practices (Killip 2013). Not only do they lack the full set of skills and resources to deal with the technologies, but they also have problems to identify and select among the possibilities offered by these new developments and adapt them to their own businesses (Mokhlesian and Holmen 2012). Moreover, their suppliers seem to be not sufficiently supportive to promote these solutions (Kilip et al. 2020). Under pressure to deliver within tight time frames, the contractors tend to offer and repeat a set of standardized solutions to their customers (Archtnicht and Madelner 2014). So, even if a company is willing to take risks and engage in an innovative solution for a specific client, it does not imply that this solution will lead to a long-term change of practices. As the contractor moves from one project to the next, the routine is to revert to established and

conservative practices (Killip 2013). This practice is reinforced by the apparent singularity of each of the projects (Buser and Carlsson 2017).

In order to reshape the existing built environment towards EUs sustainability targets (EU action plan 2020) there is a need for innovative solutions (Geissdoerfer et al. 2018). To provide sustainable solutions construction companies need to change their practices especially towards integrating new technologies and products to their actual offers (Mokhlesian and Holmen 2012). However, the construction SMEs have not the reputation of being especially dynamic in term of innovation. Rather they demonstrate a business as usual attitude likely to miss the escalating environmental performance requirements (Hardie and Newell, 2011). These SMEs seem to be insufficiently equipped to develop and adapt to new markets and may miss the benefit from the upcoming increase of opportunities (Hardie and Newell, 2011). Researchers have highlighted the importance of clients and building standards to incite and support SMEs in their innovation process (Hardie and Newell, 2011, Håkansson and Ingemansson 2012).). Håkansson and Ingemansson (2012) identified that the collaboration with clients represents the most important driving forces for renewal in the construction industry, however the authors seems to take for granted that interested customers are available. Recent studies show that successful renovations are clearly associated so far with the rather rare proactive house owners (Risholt and Berker 2013, Galvin and Sunikka-Blank, 2014) and the result of engaged and active milieu friendly actors with a high level of knowledge (Fawcett and Killip 2014). While mainstream house owners are associated with lack of information and technical knowledge to carry out retrofit (Mortensen et al. 2014). In addition, they rather address their investments to other forms of renovation triggered by comfort, lifestyle and esthetical aspirations (Risholt and Berker 2013, Bravo et al. 2019).

The role of policies to promote CO_2 emission reduction, should not be forgotten. Hardie et al. (2013) suggest that the regulatory environment is far more important to environmental innovators than to others and that the influence of clients and end users becomes therefore less significant. So, the diffusion of EU´s energy efficient targets putting pressure on private house owners to renovate in order to comply with these energy targets should help the expansion of energy efficient renovations (Directive 2010/31/EU). However, in Sweden, these directives are regulatory and do not include financial incentives even though the latter may be more useful to influence owners of existing houses to adopt building envelope measures (Mokhlesian and Holmen 2012).

Authors (Uguru 2000, Janda 2014) have suggested that technological innovations related to retrofit have been overemphasized since many of the needed technology to achieve satisfying results are already available. They underlined instead that the retrofit issues should be considered as a market breakthrough problem instead of a technological one (Janda et al. 2014)

Business model

One strategy to develop new business is to implement business models methods. These tools serve to map the actual core aspects of an organisation and to define possibilities for future developments. Business models can be of many types, mobilising different components and configurations (see Saebi and Foss 2015, for a review), most of the authors seem nevertheless to agree on a basic understanding: business models are focusing on how a company defines a value proposition to address specific customer segments and organise itself and its networks to reach the benefits associated to this newly defined proposition. As pointed out by Teece (2010) a business model is a strategic tool "defining the manner by which the enterprise delivers value to customers, entices customers to pay for value, and converts those payments to profit" (p:172). A business model can be viewed as the conceptual glue of a business. It should be sufficiently differentiated to meet particular customer needs, no too difficult to replicate, and should lead to competitive advantage (Teece 2010). It contributes though more to change the "way you do things" rather than "what you do" and therefore should bring organisational changes for the company (Amit and Zott, 2012). However, these changes are not limited to the company but can involve larger group of actors including company customers, shareholders and key stakeholders like suppliers and are context dependant. (Zott et al. 2011). The dynamic process of BM and in particular its relation to practice is also underlined by Ahokangas and Myllykoski (2014).

Schneider and Spieth (2013) demonstrate that a contribution to studies of business model innovation

encompasses many different understandings of the prerequisites, the processes and the effects of business model innovation. They point to, for example that business models might develop as a continuous response to changes in the environment, and/or as a discovery driven trial and error process (Schneider and Spieth 2013). In this perspective, BM may serve to foster future development and include new technology. Though it is characteristic that these approaches, with their comprehensive business area coverage, do not include an appreciation of how new types of technologies would need to be integrated (see also Baden-Fueller and Haeflinger 2013).

Furthermore, the role of management of the company might need to change to support new ways of doing business and therefore also should be one of the "objects "of the business model innovation. Lindgren (2012) is thus discussing leadership when developing business models for small and medium sized enterprises (SME) and add competences to the conceptual landscape. His study shows that SMEs primarily focus on meeting needs and demands from a "predefined" customer and act rather reactively than actively.

In the construction sector, the use of business models has so far attracted little attention to the exception of the study of Pekuri et al. (2015). Their results show that for Finnish contractors the selection of project is not guided by any specific business model. The selection of tasks to be carried seems to be influenced by short term prospect such as need of work and profitability, as these are decided project by project .

Among the many business models, Osterwalder and Pigneur (2010) have developed a rather simple conceptual tool, the canvas, which should help companies to successfully generate new business models. This canvas is composed of nine blocks showing the logic of how a company intends to make money and represents the blueprint for a strategy to be implemented trough organizational structures, processes and systems (p15).

As noticed by Lund and Nielsen (2014) the model does not prescribe any particular starting point for the analysis, or any particular order of discussion. Though the 2010 canvas is designed with the company strengths and abilities on the left and moves to the customer on the right of the canvas. But Osterwalder and Pigneur's handbook starts by focusing on the customer and how to solve his/her problems and how to deliver a new solution (section 1-4). Once the revenue streams are assessed (section 5), the key resources, activities and partners are discussed (section 6-8) and end ups with the cost structure (section 9). The handbook offers consequently two contradictory lectures on how to proceed with the model. For our workshops, we exploited a third path starting with the value proposition then the customer segments followed by the building blocks "backwards" to the left in the canvas.

Business models and sustainability

The concern for sustainability has fostered interest in developing business models seeking to bridge the short-term financial interest of companies to maintain or increase economic prosperity with the longer-term focus of social, environmental and economic sustainability (Schaltegger et al. 2015). Their common purpose is to give a strategic tool to companies aspiring to integrate sustainability concerns and goals in their business (Pieroni et al.2019). Among other Geissdoerfer et al. (2018) have shown based on a literature review how BM and sustainable innovations are interrelated and have proposed normative requirements for businesses to operate towards sustainability. Furthermore, Bocken et al. (2014) have identified eight sustainable business models archetypes which together should provide guidance to integrate sustainability concerns in business purpose and support innovative practices. They aim a categorizing and explaining BM for sustainability, providing mechanisms to assist the development of sustainable BM and examples for business to de-risk the SBM innovation process, and finally to contribute

<table>
<tr><td rowspan="2">8.Key partners</td><td>7.Key activities</td><td rowspan="2">2.Value proposition</td><td>4. Customers relationship</td><td rowspan="2">1.Customers segments</td></tr>
<tr><td>6.Key resources</td><td>3.Channels</td></tr>
<tr><td colspan="3">9.Cost structure</td><td colspan="2">5.Revenue streams</td></tr>
</table>

Table 1: The business model canvas (Osterwalder & Pigneur, 2010)

to define a clearer research agenda for BM for sustainability (2014).

Regarding the development of practical tool, Joyce et al. (2015) have proposed to add two more canvas to the Osterwalder and Pigneur's initial BMC renaming the latter Economic BMC: an Environmental Life Cycle Business Models Canvas focusing on the environmental impacts of both new products and services and a Social Stakeholder Business Model Canvas assessing the social impacts and benefits of new products and services. These three models acknowledging the complexity of sustainability seems however to be rather heavy to operate in a business context.

However, the scope of the present paper is only indirectly referring to the SBM stream as the reflection towards implementing sustainable solutions to the customers has been carried in the workshops using the 2010 BMC (Osterwalder and Pigneur 2010). Our project started in 2013 where SBM were only slowly emerging. Though, by revealing the barriers that the AEC SMEs are facing when implementing BMC, we also contribute to discuss the challenges of this SBM stream.

Method

The present paper reports the findings of an action research project with small Swedish contractor companies from the Gothenburg region experimenting with business model to develop energy efficient solutions. The method is multidisciplinary and employs an interpretive approach to discuss the empirical material (Burrell and Morgan 1979, Bryman and Bell 2011). The frame of understanding is based on a selective literature review drawing on business models and sustainable business models theory, studies of sustainable renovation as well as of the particularities of the construction sector SMEs.

The empirical material has mostly be collected for a PhD (2013-2017) conducted by one of the authors whose focus is to document and analyse the integration of new energy saving solutions for the renovation of single family houses with a particular focus on the relation between the house owners and the craftsmen engaged to carry the work. Initially, 90 contractor SMEs of the Gothenburg region were contacted first by e-mail and then by phone. The enterprises were partly sought out from a map search engine using specific trade words and concepts, partly through snowballing when interacting with the enterprises. Out of the 90, we visited 24 for a first interview; 21 finally accepted to be part of the project. The trades are distributed as following 16 carpenters, 2 electricians, 5 energy solution providers, and 1 brick layer. We do not claim a representativeness in our sampling and see our study as exploratory.

This longitudinal study includes 18 workshops distributed during 24 months with a total of 21 craftsmen's companies to discuss and develop the potential of new energy saving solutions for their customers, and including twice the presence of technical experts; 13 interviews with craftsmen and enterprise representatives; nine interviews with customers and six observations of initial encounters between craftsmen and customers to design and decide the scope of the renovation. The purpose of the action project is not to develop solutions for the companies but to train the companies into using BM has tool to keep improve their business solutions and adapt to the continuous environment changes- The workshops represent the main sources for the present discussion. For the workshops the companies have been divided in three groups depending on their location. They did not have any previous business relation before meeting in the project. During the initial workshops, the different elements of the canvas (Osterwalder & Pigneur 2010) were discussed separately (customers, business proposition, key activities, value proposition etc). The complete canvas was presented in two workshops. The latest workshops have focused on potential new solutions and how to find and "get" new customers.

Out of the three groups, one, the South group, was more successful than the two others and therefore being richer in term of information will serve as a main example for the presentation of the results.

The following table gives a short description of the 9 companies participating in the South Group and underlines the diversity of the companies involved in the project but also the diversity of the services each provide to the customers. All these companies have a rather local market and tend to define their area of intervention within an hour drive from their central office.

Company	Trade	organisation	since	business
1	Energy	One main owner Nine employees	2001	Services: HVAC, Heating and plumbing
2	Insulation	Two owners 21 employees Sale department	1978	Services: Providing insulation in walls, floors, roofs and attics.
3	Electrician	Five owners 13 employees	2002	Services: Lighting, smart housing
4	Electrician	One main owner 25 employees	1992	Services: Electrical safety, lighting, renovation. Specialist expertise within e.g. control system, knx, heating and automatic heating controls
5	Carpenter	Two owners Nine employees	1984	Services: Construction, property services, snow plowing, renovations and decorations, custom installations
6	Carpenter	Two owners 14 employees	1995	Services: all types of construction work for private persons and businesses: new built, refurbishment, extensions, renovations, bricklaying and plastering etc
7	Carpenter	Two owners Seven employees	2011	Roof, new built, refurbishment, renovation
8	Carpenter	One owner Nine employees	1998	Services: New built, refurbishment of single-family houses, vacation homes etc. Renovations, kitchen renovations, carpentry. Through business partners: excavation, plumbing, electricians, tile work, expert work in wet areas, tinsmith
9	Carpenter	One owner One employee	1987	All types of construction services, new built, renovation, refurbishment, extensions. The owner owns two more businesses in transportation and warehousing.

Table 2: The 9 SMEs of the South group

Notes were taken during the workshops and the interviews were taped and transcribed. To carry our analysis, we have followed the 5 steps model of qualitative analysis suggested by Taylor-Powell & Renner (2003): knowing the data by getting over it several times; identify key questions or topics to organise the analysis; categorize information by themes and features; identify patterns and connections wihthin and between categories and finally interpretation by attaching meaning and significance to the analysis. Since the process is not rigid moving back and forth between the steps can occur. The results and interpretations of the different methods of gathering data have been triangulated by been discussed during the workshops with the participants and also between the researchers participating to the project.

Results

Challenges for the SMEs

Building on the Osterwalder Pigneur's handbook (2010), this section underlines the challenges met by the companies when dealing with most of the topics addressed by the 9 blocks of the canvas.

Customers segments

Identifying customers segment represents the first challenge for these companies. They fail to define and prioritise segments from fear of excluding any potential project. They claim their focus is on single family's house, but they also perform work for church, schools or factories. It appears that these companies are willing to take almost any jobs providing the project are assessed as low risk and can generate profit. From what should be a straightforward customers segment, these companies seem to face a rather diversified market with a very broad potential of customers. Besides, they also emphasised a need for flexibility to adjust to the building characteristics related to the periods and types of constructions they renovate.

Paradoxically, when discussing in group during the workshops, these companies tend to have rather stereotypic understanding of what their customers want and need. In particular, they argue that the costs of retrofit are too high to seduce their mainstream customers and prevent any kind of investment. This understanding of the customer appears to be more nuanced during interviews. Here the craftsmen tend to display a more open attitude towards their customers and acknowledge a large variety of situations, contexts and demands. In particular, they notice that their customers tend to be more knowledgeable about the renovation possibilities and may even challenge their expertise regarding the proposed solutions. If most of the craftsmen accept to consider these new possibilities and assess their relevance for the concrete customer's, they do not add them in their projects' portfolio. They may nevertheless reuse this new knowledge or competence if a similar case shows up. It appears clearly that the customers segments are decomposed into singular project and customer and that our companies are not willing to disregard any of them.

However, the South group did identify two new customer segments that the companies could target together. One was the new owners of houses built between 1950 and 1980 as these buildings are subject to a generation shift and in need of substantial renovation. The other segment was "the longstanding" houses owners, that might want to renovate to increase the house value before selling it.

Besides, company Four decided to create an offer for customers interested in solar panels and company Seven identified the customers lacking financial resources as a segment they could target in association with a bank. In our sample, new customers segments are added to existing ones; the companies are reluctant to select, prioritise or downsize the number of segments present in their portfolio as they may miss a project.

Value propositions

To create an explicit value proposition seems to be another challenge for our companies, not because they do not know what problems their customers are facing or which products or services to offer but because these are implicit knowledge the craftsmen mobilise project by project. They define their value propositions as depending on the specific context. There is no transparency regarding the cost or the length of the contract, as these features are modified following the type of customers or projects. As in this example, witnessed by one of the authors of a craftsman (company Five) coming to a customer house for the first time and commenting on the poor aspects of the location. The lack of maintenance of the surroundings were interpreted by the craftsman as a sign of low income and therefore the prospect of a meagre income. So, in order to avoid working for this customer he overpriced heavily his tender. To his surprise the price was accepted without discussion and he made a substantial benefit. The value for customers seems to be renegotiated for each transaction.

However unwilling to come up with defined and stable value proposition, the South group decided to create a joint service: a package gathering the different trades to simplify the task of the house owner when planning renovation. The package consists of a complete assessment of the houses' needs in term of renovation as well as several offers to carry the work in different steps. In doing so, the companies have identified the limit of their own competences and trade and decided to build on the complementarity of the services they already offer separately.

Company Four developed services regarding the choice, installation and maintenance of solar panels, to learn but also to demonstrate their expertise to their

customers, they have installed solar panels on their own houses and facilities.

Company Seven proposal with a bank shorten and simplify the house owners' process when planning the financing of their renovation.

Channels

When searching for companies to participate in the project, we were struck by the lack of information provided by the companies' websites and the difficulty to find proper description of the core business and competences these craftsmen were proposing. Their market seems to be very local and it would be a mistake to believe that all of them are willing to increase significantly their turnover. In fact, three of our companies stated explicitly that they did not want to grow unless undertaking a very substantial project.

The craftsmen described their relations to their customers as based on local and personal networks relying on personal recommendation to get new jobs. Therefore, investing in marketing is not seen as a priority. However, many of them have tried diverse marketing solutions in the past: leaflet in mailboxes, advertising in local or specialised magazines, participating in national TV broadcasts on craftsmen work or craftsmen competition, or investing in shiny websites. But none of these, they claim, have brought back much return on investment. For our companies, word to mouth is the main channel of information to attract new customers. Besides, these direct contacts allow the craftsmen to shape without delay their offers according to the specific needs of the customers.

The two new value propositions defined by the two single companies have appeared on the respective companies 'websites. The South group joint proposal has been printed as a leaflet and distributed door to door in the local area corresponding to the target groups. Using real estate's agents as medium to deliver this new value proposition has been discussed and finally discarded. The participants did not trust the agents to be fair and faithful to the proposals.

Customer relationships

As seen above, the relation to customers is personal and depends on local networks. These companies valorise face to face communication. They describe the first encounter with customers as determinant for the relation to come. This moment enables them to identify the type of client they are dealing with and define the scope of the project. They also have the possibility to refuse the collaboration. The first encounter is often carried by the owner of the company, where the tasks are later often performed by the employees. This shift of interlocutors can create misalignments and triangulation between the parts may occurs. The owner has then the responsibility to straighten the relation if needed.

The retention of customers is not as issue as such as renovation activities are seen to be a one-off event, so the companies do not aim at creating long term relationship with their customers. At the same time this relation is important for them as it should not damage the possibility of new potential customers and the quality of the services should contribute to the recommendation to new projects.

Revenues streams

Even if the companies insist on the uniqueness of the projects they perform, one way of assuring the revenue stream is to propose standardised and cheap solutions to the customers using a reduced number of materials. This repetition ensures financial profits and quality of execution. However, sustainable renovation asks for upgrade of competences, techniques and material. These companies are not opposed to such improvement providing the customers can afford it. The common understanding regarding the customers' will to invest in sustainable solution is that even if they wanted to, they would not be able to. The single houses market in the region of Gothenburg is under heavy press with more buyers than available properties and a system of open auction enabling people to bed on top of each other increasing the selling price by up to 10 to 15% (figures for 2013-2018). "*New house owners are actually "broke" when they enter their new property and go for cosmetic improvement instead for structure and sustainable renovation"(manager Company Eight).*

Another shared opinion is that *"if the customers do have money left, they would rather put them towards a new kitchen or bathroom than to put money towards energy efficiency solutions" (Manager company three).*

With the exception of the energy company providing price for heating equipment and installation, there are no cost transparency of the offered services or material. Here as well the cost of the work to be performed is estimated by the craftsmen project by project, though this is not a topic they are keen on openly discussing. Besides, none of the three new business propositions is announcing costs or prices for the work to be done.

Key Resources

They key resources for our companies are mainly human labour as they depend on the competences and skills of their employees. They do not hesitate to mobilize members of their professional network if a task requires more workforce or competences outsides of their own trade. They are also willing to broader their scope by adding new technical competences as for the solar panels or business competences as in the financial resource proposal.

The university participation to the project was also seen as a key resource for these companies– to be able to use the university logo has been a motivation to participate in the project for many of the companies. They saw this as a legitimization possibility for their company in term of knowledge and competence.

Key activities

The companies summarised their key activities as problem solving. They describe their work as defining and executing distinct solutions fitting with the customer's ambition, budget and houses' specificities. At the same time many of their current interventions do have elements of standardisation and repetitions which could justify a listing of their key activities. The appropriation of sustainable solutions requires time and funding. Our companies are not ready to prioritise these investments as long as the customers demand is not more outspoken. For the smallest companies this is especially acute as the owner is often the one delivering all the key activities of the company. They professional identity of our respondents is clearly connected to their trade: "*I am an electrician, this is what I know, this is what I am good a*t !" (manager company Three). Our participants saw activities such as customers, suppliers and partners relationships, marketing, or accounting as necessary burdens but not adding essential value to their companies.

Only one of the three business propositions, the solar panel is asking for a radical change in key activities requiring the mastering of new products, process and competences.

Key partners

Banks are mentioned as key partners by all the participants. The proposal of the company Seven for a financial solution associated to renovation project is a result of this close collaboration.

Asides of the bank, the companies possess a network of informal partners active both in their own domain and in other trades which they can mobilize when needed. They can rely on each other for specific tasks and recommend each other to their customers.

The joint proposal is building on this type of informal network where the competences are brought together to offer a common product. The modalities for the distribution of tasks and revenues are formalised.

The solar panels initiative of company Four requires a closer relation with the providers not only in term of equipment but also in term of learning and appropriation of the new technology. Apart from company Four, none of the companies participating to our research has identified new key partner it could associate with to develop new value proposition.

Cost structure

The expenses linked to the learning and time investment of new sustainable solutions is seen as one of the main barriers to their implementation. So, it is no surprise that two of three propositions are virtually cost free. By investing in solar panel for it owns house, company 4 minimises the risk and can actually carry a life size trial without investing too much from his own company.

The companies have all been very discrete about the cost structure of their running business. Investing in new solutions is certainly appealing but taking the risk of investing without being certain of the pay back is seen as too risky by these companies. Paradoxically, it is not so much the cost they worry about but the long term consequences of their intervention on the buildings.

To conclude, the experimenting of business model by a group of nine construction companies has results in the creation of three new value proposition for the companies involved. Two for single company and one engaging a network of several of these companies. Unfortunately, 6 months later they had not created new business and no customers had benefitted of any of these proposals. This situation did reinforce the participants' conviction that there were not much benefit investing in new business propositions and be proactive, ant that the market was definitely not open to .

Discussion and Conclusion

The lack of success so far of the three proposals tends to confirm the role of regulatory environment as the most influential factor to environmental innovators (Hardie et al. 2013). So far Sweden has not proposed any incentives to regulate the adoption of sustainable renovation.

Similar to previous studies (Pekuri et all. 2015, Mlecnik et al.2019) the preliminary assessment of the use of the canvas with the construction SMEs shows some difficulties for these companies to work with the blocks division as they tend to see their business as a succession of projects. The logic behind the business models' canvas does not fit with the understanding of their own organisation. The small size of these companies forces their members, often the owners, to take responsibilities for several if not all of the building blocks. The hierarchisation and prioritisation becomes difficult as they are totally immerged in all the activities. Distance to the issues and self-criticism are difficult to achieve.

Besides in order to secure their business they tend to broaden their customers segments instead of narrowing it down. But our results show that the problem for these SMEs is not unambiguously the lack of skills and knowledge to develop sustainable renovation solutions as suggested by Mokhlesian and Holmen (2012). These companies are able to deliver punctually innovative solutions when requested by the customers. What seems to miss though it the motivation to take the necessary time to translate these solutions embedded in the craftsmen head into regular business models to be accessible for other customers as long as the latter are not clearly stating their interest. So, it is not so much the conceptualisation of the solutions, but rather their formalisation and visibility which is an issue. As identified by Fawcett et al. (2014) when the contractor moves from one project to the next, the routine is to revert to established and conservative practices.

The business model followed by the companies participating to the project are going against two of the strong the propositions of the canvas as to define clear segments and specific value propositions. The proposed solutions are adding new customers segments and business proposals to the already much diversified portfolio of activities. However so far, no clear decision has been taken to substantially transform their business and invest in sustainable solutions, they strategic decisions have yet to be taken.

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