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HOW DO CUSTOMER JOURNEYS REGARDING ENERGY INVESTMENTS LOOK LIKE?

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Abstract

It is generally acknowledged that the existing housing stock plays a vital role in attaining national and international energy efficiency targets. As for new building, mandatory regulations can be (and are) developed to attain energy-efficient homes, but energy improvements in the existing stock are, because of property rights, strongly dependent on the voluntary cooperation and participation of the owners.

For many years, governments have been developing instruments for stimulating energy investments among homeowners. This is a subject of persistent concern, as many regulations and policy initiatives are not very successful, and good examples are scarce.

Particularly regarding the owner-occupied sector, the term 'customer journey' is frequently used to denote the decision-making process from an initial interest in a good or service towards the purchase of it. The process is rarely straightforward and can have many pitfalls; there is a high risk that a willingness to invest is eventually not materialised in actual investments.

On the basis of literature review, this paper outlines what the notion of a 'customer journey' includes. How can be process be described and analysed? What are the 'stops' in this journey, where critical decisions are taken? What kind of decisions are these? Which types of journeys can be distinguished? The paper reviews models and designs for customer journeys and addresses some implications for the supply side of the market.

Keywords: homeowner, energy investment, decision-making, customer journey, the Netherlands

1. Introduction

In the last one or two decades, improving the energy performance of the building stock has gained priority in international, national and local policies. The European Union, for instance, has set mandatory obligations for member states to implement norms for nearly Zero Energy Buildings by 2020, and strives for an energy-neutral building stock by 2050. Obviously, a crucial element regarding the success of these policies in the housing sector is to which extent homeowners and other housing providers respond to government policies in this field. It is often stated that energy investments in the owner-occupied sector are lagging behind and are insufficient to attain a considerable improvement of the energy performance. Retrofits by homeowners are characterised by small steps, in which mostly one or two measures are included (e.g. Stieß and Dunkelberg, 2013; Fawcett, 2014).

As for the way in which homeowners make their decisions on energy investments, the term 'customer journey' is regularly used to denote that this decision-making is not fixed at one moment in time, but is rather a process ranging from an initial interest in or awareness of energy improvement possibilities on the one hand to a concrete purchase or even the evaluation of the delivered goods, services or related experiences on the other. Norton and Pine (2013), for instance, state that customer journey "means the sequence of events – whether designed or not – that customers go through to learn about, purchase and interact with company offerings – including commodities, goods, services or experiences" (p. 12). This process includes several steps that a homeowner has to pass before the final investment decision is taken. In their literature review of customer journeys, Følstad and Kvale (2018) state that "the term addresses the processual and experiential aspects of service processes as seen from the customer's viewpoint" (p. 197). The words 'series of touchpoints' can also be found in several definitions, with 'touchpoints' meaning the interactions between the customer and one or more service providers. We agree, however, with Følstad and Kvale (2018) that "customer journeys as a series of steps and/or touchpoints does not explicitly address a key characteristic of customer journeys: the strong link to customer experience" (p. 213). This means that a customer journey can also, and maybe even better, be seen as an ongoing process rather than a series of individual, separate events.

Problematic for the pace of energy improvement is that the potential customer encounters several barriers on his journey that may prevent him to continue. However, it is generally assumed that tailored services can help to overcome such pitfalls. Crucial for these services to be successful is that they adequately identify these pitfalls. For this, in turn, an adequate description of the customer journey is essential. This is the central subject of this paper. On the basis of literature review, this paper outlines what the notion of a 'customer journey' includes. How can be process be described and analysed? What are the 'stops' in this journey, where critical decisions are taken? What kind of decisions are these? Which types of journeys can be distinguished? The paper reviews models and designs for customer journeys. It also deals with some types of services to facilitate customer journeys, in which the potential pitfalls are addressed.

The paper is structured as follows. First, we go into the main barriers for energy investments by homeowners. Then, we address the existing customer journey models, illustrated by some examples mainly from the Netherlands. After this, several services that aim to facilitate customer journeys are dealt with. Finally we discuss the usefulness of the models for addressing the pace of energy improvement in the owner-occupied sector.

2. Barriers for energy investments

In the existing literature on the uptake of energy investments by homeowners, various explanations are given on the sectorial level and the individual level. As for the sectorial level, Van Bueren and Priemus (2002), for example, mentioned the strongly fragmented decision-making structure of the building sector,

which increases the risk that investments are abandoned if any party does not cooperate. Crabtree and Hes (2009) stated that the disaggregation and piecemeal nature of innovation within the building industry is underpinned by unfamiliarity with new technologies, a lack of consistent legislation and pricing and unclear channels of communication – thus leading to the application of conventional measures. Also regarding the supply side, Gooding and Gul (2016) add several barriers at the business level. First they mention hidden costs or transaction costs, which result from issues in the project preparation, such as finance searching, construction supply chain formation, and from post-project issues such as monitoring. Second, they mention business organisational barriers. Because many businesses are relatively small, it is important for them to identify niches and to predict downstream capacity and potential future competition. This turns out to be not an easy task for many suppliers.

Explanations at the individual level (at the demand side) often refer to financial issues such as costs and payback times (e.g. Baek and Park, 2012; Stieß and Dunkelberg, 2013; Friege and Chappin, 2014), and the availability and reliability of information (Wilson *et al.*, 2014, p. 5). Sorrell *et al.* (2004, p. 10) distinguish several other, mainly economic barriers to energy efficiency projects, namely financial risk (for example, uncertainty about the financial savings and thus also about the payback time), hidden costs (again!) and limited access to capital.

Next to these economic factors, the households' practices in which such decisions are embedded can be an influential factor. This embeddedness can be illustrated at different levels. Palm (2013) shows, not surprisingly, that energy is for homeowners only one factor in their purchase decisions, and not always the most decisive one; for instance, when buying a home, price and location are much more important (p. 764). Several scholars (e.g. Aune, 2007 in Organ *et al.*, 2013) stress the importance of the combination of energy performance with other quality aspects, such as comfort, which may be an even more important driving force for the respective household. This is confirmed by Simpson et al. (2016), who argue that energy efficiency is often improved as a side-effect of home improvements, but rarely the main incentive to change. They have found that significant life events and access to funding had strong influence on the work people undertook at their own home. In addition, Shove (2003), Aune (2007) and Ellsworth-Krebs (2015; 2016) show the embeddedness of energy-related decisions in daily household practices, such as decorating the home, doing the laundry and bathing.

On a macro, government policy level, Jensen (2012) uses the term 'regimes' to denote the importance of a policy environment that facilitates or hampers the development and implementation of energy policies. Stephenson *et al.* (2010) include various levels in their so-called Energy Cultures framework, in which practices, material culture and cognitive norms are linked. Quoting Seyfang and Smith (2007, p. 588) they state that "entrenched cognitive, social, economic, institutional and technological processes lock us into trajectories and lock out sustainable alternatives" (p. 6121).

3. Customer journey models

As is stated in the introduction, customer journeys reflect a process from an initial interest in or awareness of energy improvement possibilities to a concrete purchase or even the evaluation of the delivered goods, services or experiences. In this process several steps are taken, which form the basis of current customer journey models. In their proper forms, the models are based on, and follow the decision-making process of the potential investor. These stepwise models can also contain the 'gates' that have to be 'opened' before the customer moves forward to the following step. If these gates remain closed, the journey is interrupted, meaning that no energy investments will follow.

Next to the demand-based models, supply-based models can be distinguished as well. These models are conceived from potential suppliers of energy goods and services. Central in these models are the service

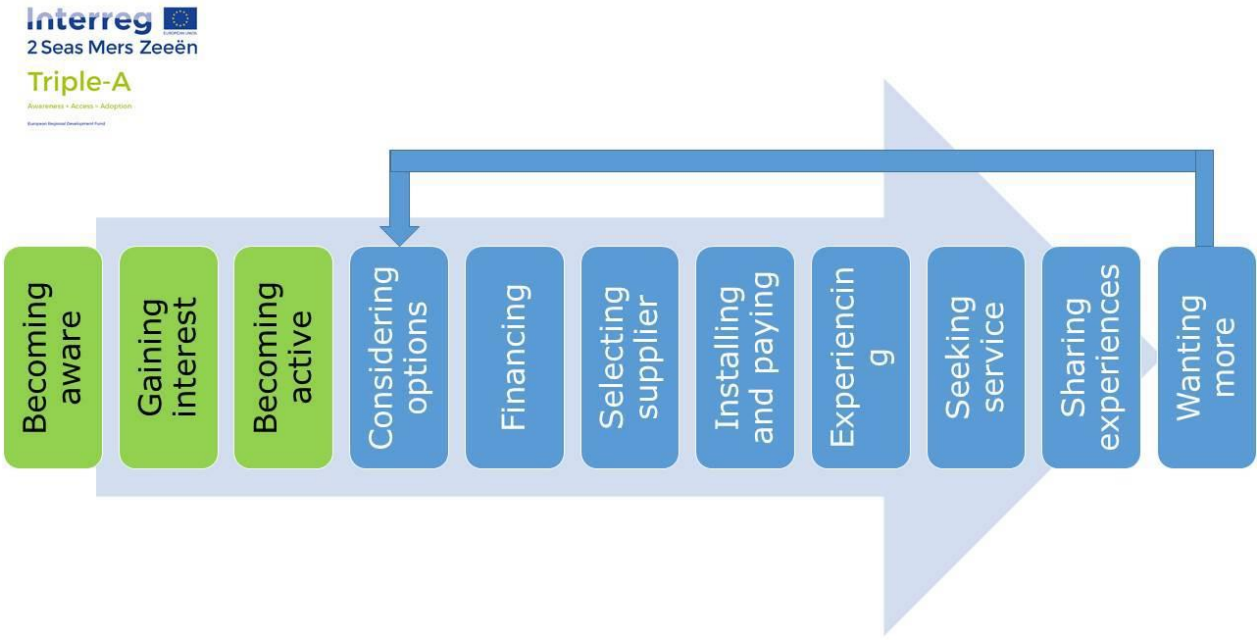
delivery moments or ‘touchpoints’, being the opportunities at which a potential customer is in contact with a supplier, someone acting on behalf of him or anyone else who communicates about the energy efficiency of homes.

It is worthwhile to note that customer journeys can take years. Unlike the purchase of daily goods, energy investments take place at irregular times, and usually not often. Moreover, many types of energy investments are still seen as innovations, which must gain a position among other, more traditional issues and considerations (cf. Mlecnik, 2013). As a consequence, the mental ‘preparation’ time before the actual investment decision can be long.

Departing from the well-known triplet knowledge-attitude-behaviour, demand-based customer journeys usually start with raising awareness in a certain subject. This awareness causes interest, which in turn causes an increased motivation or even eager to know more about the subject. In a customer journey regarding energy investments, this could be materialised in a comparison and assessment of products, services and parties that supply these. After this a purchase decision, followed by experiences during the execution of the investment and, finally sharing experiences with others.

These stages can, for example, be found in a customer journey model developed by the Association of Dutch Municipalities (*Vereniging van Nederlandse Gemeenten* - VNG), together with consultancy bureau PwC (see Figure 1).

Figure 1. Example of demand-side customer journey model



Source: Meijer *et al.* (2018), p. 13, after VNG (2015)

Apart from the stages already mentioned above, the model also includes stages regarding financing and experiencing the purchase. It also distinguishes the purchase/sale itself and the aftersales service. Finally, an arrow back to an earlier stage is added to denote the possibility that the customer intends to do a further investment. The VNG model does not only include a sequence of stages, but also, per stage, a list of potential experiences (not depicted in Figure 1), which can be either positive or negative. It is obvious that

positive experiences stimulate the respective customer to continue with his 'journey', whereas negative experiences ('pain points') can form a serious obstacle. Examples of positive experiences are "I understand the advantages that energy saving can bring in my home situation" (in the stage of 'gaining interest') and "I have confidence in the brand and the promise of the suppliers" (in the stage of 'selecting supplier'). Examples of negative experiences or 'pain points' are: lack of "someone who advises me which measure fits best in my situation" (in the stage of 'considering options') and the absence of someone "to turn to with my questions" (in the stage of 'seeking service') (VNG, 2015).

Two other examples are not purely demand-side models, as they also include relationships with potential services offered by suppliers. The first example, also taken from a publication of the EU-funded project 'Triple A' (Mlecnik *et al.*, 2018a, p. 13), identifies some stages in which web platforms can be involved. This process model is derived from Rogers' (2003) innovation adoption process and therefore called by the authors as such, but it also represents a customer journey.

Figure 2. Example of demand-side customer journey related to innovation diffusion

Source: Mlecnik *et al.* (2018a), p. 13, after Rogers (2003) and Mlecnik (2013)

The second example originated in a project called *Slim Wonen met Energie* ('Smart living with energy'), abbreviated to SLIM. This has taken the form of an association, consisting of consortia of companies for energy saving measures (around 100 companies in the three initiating provinces in 2016). Each consortium is able to offer a one-stop shop solution to homeowners. Municipalities have a facilitating role. SLIM has been initiated by three provinces, which played a directive role in 2011-2013. The province of Groningen was lead partner among these provinces. Since 2014, the main responsibility is in the hands of the above-mentioned association consisting of consortia (Kunnasvirta *et al.*, 2016, p. 164). The customer journey plays a central in SLIM's approach. SLIM distinguishes seven steps in this journey, each of which is connected to a certain form of service (Uyterlinde, 2015, pp. 12-13). The steps and services are presented in Table 1.

Table 1. Customer journey models as used in SLIM project, with associated services

Steps in customer journey	**Associated service**
1) orientation	assisting customers to gain insight
2) advice on possible measures	assisting with tailored advice
3) inviting and selecting offers	assisting with inviting offers and making a choice between them
4) financing	assisting customers with acquiring possible subsidies and loans
5) execution	assisting customers during execution
6) evaluation	assisting customers in evaluating the investment
7) inspiration	stimulating customers to continue investing or to inspire others

Source: Uyterlinde, 2015, pp. 12-13.

The third example is taken from Voorhees *et al.* (2017), who emphasise the importance of the stages before and after the actual delivery of the goods and services. They distinguish the pre-core service encounter, core service encounter and post-core encounter as periods within a service experience. Similarly, Lemon and Verhoef (2016) present a customer journey model in which they distinguish the

prepurchase stage, the purchase stage and the postpurchase stage. They label these stages together as a customer experience at time t, which is preceded by an earlier experience at time t-1, which can also be divided into the same three stages. In similar way, a future experience at time t+1 can be depicted. In this way, the authors present a customer journey as a series of consecutive experiences, in which one experience is (partly) influenced by earlier experiences. Unlike in other models presented in this paper, various types of touchpoints are distinguished:

- brand-owned touchpoints: interactions between customer and suppliers "that are designed and managed by the firm and under the firm's control" (*ibid*., p. 76), such as websites, advertisements and loyalty programs;
- partner-owned touchpoints: interactions between customer and suppliers "that are jointly designed, managed, or controlled by the firm and one or more of its partners" (*ibid.*, p. 77), such as marketing agencies and multichannel distribution channels;
- customer-owned touchpoints: "customer actions that are part of the overall customer experience but that the firm, its partners, or others do not influence or control" (*ibid.*, p. 78), such as developing thoughts by the customer himself about his needs and desires;
- social/external touchpoints: these refer to the "external touch points (e.g., other customers, peer influences, independent information sources, environments) that may influence the process" (*ibid*., p. 78).

Finally, we present a supply-based customer journey model described by De Wilde and Spaargaren (2018), which consists of six "basic" touchpoints. Successively, these touchpoints are (pp. 4-5):

- Sentisize: catching the attention of homeowners;
- Advice, tailored to the personal wishes of the customers, particularly energy usages and the physical properties of their dwelling;
- Tender, for selected retrofit measures;
- Installation of retrofit measures;
- Evaluate: check the retrofit process, including the implementation of the measures;
- Inspire: sharing experiences with peers, so that they might become inspired to retrofit their homes as well.

4. Service delivery networks: engaging in customer journeys

As has been indicated earlier in this paper, the stages in the customer journey can be used (notably by suppliers) to define what kind of products or services can be offered or delivered to the potential customer. It is therefore not surprising that many authors (e.g. Tax *et al.*, 2013; Voss and Zomerdijk, 2007) have taken the customer journey as a point of departure for designing services. Table 1 in the previous section already presented examples of relationships between (stages in) the customer journey and types of services. The vast majority of the approaches are market-oriented and therefore include goods and services that are usually delivered by market organisations, such as sale and installation of products for heating, ventilation, insulation and home energy management systems (HEMS). However, one can also think of services that are delivered or also delivered by governments, other public bodies, such as information desks, energy ambassadors, subsidies and services as 'loft clearance schemes' (to mitigate hassle) and energy service companies (for risk transfer) (see e.g. Murphy *et al.*, 2012; Hamilton *et al.*, 2010; Wilson *et al.*, 2014).

Service design does not only include the type of products and services that are delivered, but also how these products are delivered. For instance, Zomerdijk and Voss (2010) studied the popularity of six "contextual elements that influence customer service experiences" (p. 68), which aspects can be included in the design of services. From a selection of 17 companies, they found that three elements were

particularly popular, namely designing of customer journeys and touchpoints, sensory design (creating strong impressions), and the designing of the dramatic structure of events (maximizing the emotional impact). Although we recognise the importance of these aspects in the success or failure of customer journeys, it would go beyond the scope of this paper to extensively deal with these aspects. Instead, we concentrate on types of services to facilitate customer journeys.

It is obvious that the first stages of the customer journey, in the prepurchase phase, are more related to developing a favourable attitude towards investment, whereas the stages in the purchase phase are predominantly geared towards executing the investment. This difference, plus the fact that a customer journey can extend over years, entails different services and also different suppliers. The multiplicity of suppliers is a strong argument for Tax *et al.* (2013) to focus on what they call "service delivery networks". They reject the implicit underlying assumption in many studies that "the service encounter is dyadic in nature and that the customer assesses the firm in isolation" (p. 454). Like Lemon and Verhoef (2016), they advocate a customer experience approach, which assumes that the customer satisfaction is not only dependent on the supply of one provider, but on a combination of supplies by various providers. Although each provider may interact separately with the customers, it is the network that guides him through the whole process. Rawson *et al.* (2013, p. 1) put it in a different way: "Touchpoints matter, but it's the full journey that really counts."

Given the importance of the 'full journey', it is not only crucial what individual suppliers offer, but also what these suppliers offer collectively. In order to reduce the fragmentation among the suppliers, concepts of one-stop shops have emerged, in which several suppliers act collectively, as a group, towards the potential customers. We conclude this section with an example of such collaboration.

> ***Huizenaanpak -***
> The *Huizenaanpak* (literally: home intervention), formerly known as the *Haarlemse Huizenaanpak* (Mlecnik *et al*., 2018b), after the Dutch city of Haarlem in which this collaboration originated, is a service delivery network of energy consultants, architects and contractors; the network is a trust, including 20 members, and is supported by municipalities in the region and the province.
> The aim of *Huizenaanpak* is to improve the energy efficiency and comfort of private dwellings, with an emphasis on dwellings built before 1970. Customer relationships form a crucial part of the business model. Mostly, this relationship starts at the information stage of the customer journey, more precisely when the homeowner becomes active, making an appointment for a consult at home and a quick scan of the house. The front-office of *Huizenaanpak* is in the first place a digital energy counter, to be reached by phone or by e-mail. Energy advisers can make a renovation plan. Next, *Huizenaanpak* can help during the whole customer journey by inviting and assessing offers of contracts being part of the service delivery network and other companies and quality control during and after the implementation of measures.
> A SWOT analysis of the existing collaboration structure in 2015 identified as a weak point the long customer journey from the first contact with the homeowner and the commission and execution of measures. Customer channels to contact homeowners were also weak, meaning that the network was not very successful in creating awareness and gaining interest. After this analysis, some members of *Huizenaanpak* took the initiative to demonstrate energy efficient solutions in showrooms or showroom-like environments.

5. Discussion and conclusion

The customer journeys presented in the previous sections generally show a picture of the stages that a customer goes through when purchasing goods or services. The models differ in what they regard as the beginning of the journey. Some models include a phase in which awareness is raised (e.g. VNG model), whereas other models start with orientation (e.g. SLIM model) or with collecting information (see

Mlecnik *et al.*'s (2018a) innovation adoption process). Some models mention relatively abstract stages (e.g. prepurchase stage), while other models are much more specific in this respect (e.g. VNG model). Activities and mind-sets are mostly treated as if they were similar, equal entities, although it is obvious that a certain mind-set of the customer (for instance, being aware and having interest) is necessary to start activities such as collecting information and selecting suppliers.

All presented models suggest a linear process, but the VNG model and, in some sense, also the SLIM model include a feedback loop, in which other customers are motivated to invest in energy efficiency. In this context, Mlecnik *et al*. (2018) rightly note that a feedback from later to earlier stages in the model is important; in their words: " 'closing the loop' is important for market development: experienced homeowners are an important source of information for homeowners aspiring to renovate" (p. 13). This argument suggests a continuation of the journey from one customer to another. We can, however, also think of a customer who remains customer, also after a purchase. This is very relevant in the field of energy performance improvement, which is mostly not a matter of one measure taken at one moment in time, but a matter of a series of measures taken at different moments. In this context, we agree with Voorhees *et al.* (2017), that customer journey models could falsely suggest that customer experiences have a fixed beginning and a fixed end (as in a 'real' journey), whereas it is also conceivable that (unlike in a 'real' journey) such experiences, in this case with energy products and services, are principally endless. The frequency and intensity of experiences may differ from time to time, but the journey is ongoing and does not stop – unless, as we noted in the introduction, an obstacle is encountered that cannot be overcome. For an energy neutrality policy to succeed, it is vital to keep homeowners, once interested in the energy performance of their dwellings, in the 'loop' of successive investments. Initiatives such as 'one-stop shops', as illustrated in the previous section, and so-called 'renovation passports', in which successive investments are planned and agreed (e.g. Fabbri *et al.*, 2018), could be helpful instruments.

A point of improvement for the models is that, despite their overview of overall decision process, it is still unclear what the pitfalls are, and where they can be found. An exception is the VNG model, which does not only depict a sequence of stages, but also an overview of potential experiences per stage. These experiences can be positive, neutral or negative, but when formulated in a negative way, each of these experiences could be seen as a potential pitfall, after which the customer is unable or unwilling to continue his 'journey'. Obviously, a potential pitfall need not be a pitfall in reality. Regarding these pitfalls, there is a whole field of research that can be further explored.

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