Save the Homes

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Deliverable: 3.2. Strategy and structure to implement the Citizen Hub concept for the two pilots

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1 Executive Summary

This report presents the implementation strategy, for the two pilots, of the outcomes of Task 3.1: the Save the Homes renovation customer journey. Therefore. the task's aim is to define and elaborate the Save the Homes renovation customer journey for the two pilot cities, Valencia (Spain) and Rotterdam (the Netherlands).

To make the customer journey realistic, this work was closely integrated and interrelated to other Save the Homes activities: establishing relevant contacts and collaboration with relevant key stakeholders in WP2, renovation and financing actions plans within WP3 as also engagement campaigns and roll-out activities within one-stop shops called Citizen Hubs within WP4 and WP6. The technical offer elements from WP2, business (and financing) model elements from WP3 and regulatory aspects assessment from municipalities themselves were used as an input during the Citizen Hub framework development. In this way, all the aspects of the service are covered when defining the pilot specific strategy.

In D3.2, the architecture of each Citizen Hub is presented. It includes an offer via the physical office and an online offer, via the local platform. A strategy and structure to implement the Citizen Hub concept defining the actions to be taken during the project duration to reach the set project objectives for each pilot is defined also as to ensure the sustainability and scalability of the concept on the EU level.

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2 Introduction

Investments in renovations of homes are vital for the environment, economy, and people's quality of life. Europe is struggling with an aging housing stock where only 10% of buildings currently have A or B class energy performance certificates. Next to that, the condition of a house is increasingly related to health due to demographic and climate change. Living in unrenovated homes can have major implications for your health while improved housing conditions may save lives, reduce health risks and increase quality of lives.

In order to limit the global warming, the carbon dioxide emissions have to be recused to zero. Buildings are responsible for more than 30% of the global energy consumption, so to reach the near zero-emissions goal, the global emissions from existing housing stock must have been decreased by 80-90% in 2050 compared to the levels of 2010. To achieve this reduction, the renovation rate of the EU existing building stock has to increase. The building stock has a large energy saving potential by i.e. improving thermal insulation, energy efficiency of technical installations. [1]

Thus, by renovating residential buildings, an opportunity presents to achieve major improvements in health, comfort and well-being, and energy savings. However, the renovation process is complicated and unattractive for citizens due to many barriers in the renovation industry, such as the fragmented construction market and lack of affordable financing.

Save the Homes wants to stimulate home renovation demand and increase the home renovation rate in the EU while simultaneously improving people's health, living comfort, and well-being. This will be done by introducing the Citizen Hub, a one-stop-shop concept which allows all the services needed for home renovation to be provided to the client from a central location. The Citizen Hub will make renovation easier, faster and more affordable by providing: Technical assessment, Technical offer, Contractual offer, Access to affordable financing options, Monitoring and verification of work, Quality assurance, and Independent support.

A customer journey framework has been created to get a complete overview of all the touchpoints during the renovation (demand, supply, onboarding etc) and to see how people go through decision making. The customer journey gives insight in the motivation and barriers of the citizens and how to assist the Citizen Hub can assist them better with the home renovation process. Deliverable D3.1 contains the methodology, the action plan and elaboration of the Save the Homes customer journey defined for the purposes of this EU H2020 project.

This Deliverable 3.2 deals with its implementation strategy in the context of the two pilot ecosystems.

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[1] IPCC, 'Summary for Urban Policy Makers: What the IPCC special report on global warming of 1.5°C means for cities', 2018

3 Save the Homes Customer Journey

The customer journey describes the experiences, behaviour, and decisions of a customer when interacting with a brand, service or company in the process towards purchasing of goods or services. The full process describes the entire journey. From the very first contact until completing the actions and being an ambassador after. The journey consists of several steps that are walked through from the customers perspective, the exact number of steps depend on the customer journey model, however when comparing different models for a renovation customer journey a general built-up can be seen[2]: For Save the Homes, we translated these steps for renovations as seen in table below:

customer journey model	Save the Homes model
1. Awareness and orientation	1. Onboarding
2. Seeking advice	2. Design
3. Selecting option	3. Elaboration
4. Execution	4. Construction
5. Experience (and inspire)	5. In-use

Table 1.- Customer journey steps

These steps are the base of the customer journey model and follow the decision-making process of the customer. The transition from one step to the next is crucial. The points of interaction between the customer and the company or brand are so-called 'touchpoints'. The touchpoints link directly to the experience of the customer in each step of the journey. Each step has its own drivers and barriers which show the reasons for the potential customer to continue or to quit the process.

One of the differences between the original proposal and practice is that step 1 of the StH model starts with the presumption that people are willing to start the journey. But before that, you have to bring them from unaware to aware. In D4.5 and in D3.7 we addressed this. However it can be argued that making people aware is not the function of the hub, but a task of the government. But in any case, in the end, the government is funding the hub, direct or indirect.

The general built-up suggests that the customer journey is a linear process. This is often true, however for market development it would be beneficial to include a feedback loop. This can mean that the journey of one customer continues in the journey of another: customers who have walked through the journey can *inspire* (last step) others by being an example and driver for customers in the first step of their journey. But also customers who have already done a home renovation could remain customer after the renovation, with after renovation services or in taking other home renovation measures at a later moment in their lives. Also it is possible to renovate your home step-by step. Only when measures are needed one will do the necessary works. That way the nuisance is smaller, but also the needed investments can eb spread over time. This ask for a 'renovation plan' over time, but often allows more input of the customer. The Component Renovation approach (D3.7 chapter 3) elaborates on that. But in that case the customer will come back in the customer journey (or doesn't leave at all).

The customer journey models suggest that the experiences of the customer have a fixed beginning and end, while in reality the building performance journey is ongoing and does not stop after a finished home renovation. It is important to keep homeowners interested in the (energy) performance of their dwelling and informed about new developments and possibilities of the energy efficiency products and services.

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[2] N. Nieboer and A. Straub, 'How do customer journeys regarding energy investments look like?' Conference papers of the European Network for Housing Research (ENHR 2018): More together, more apart: Migration, densification, segregation ENHR, 2018.

Strategy

The five stops and their sub-steps have been defined based on existing journeys[3] and one-stop shop[4] concepts. These sub-steps represent the actions in the journey where the customer actively undertakes these actions or is actively involved in them. This forms the core of the customer journey framework.

The mapping of the demand sides has shown who the target group is, this has been translated to different persona's representing the different targeted citizen groups. Knowing the target groups means knowing their needs, emotions and barriers which have been translated to possible *drivers & barriers* that are linked to the relevant sub-steps in the framework. The same has been done with the possible contact points, called *touchpoints* in the framework, between the customer and Save the Homes.

Based on the barriers in the renovation industry and the barriers of the target groups, risks have been defined. These are again linked to the relevant sub-steps in the framework. The mapping of the supply (and demand) side has been used to define the financial and renovation guidance needed in each sub-step, the guidance is also directly related to minimising the dropout risks.

Lastly, the framework also includes the Save the Homes goals for each of the five stops.

Save the Homes Customer Journey

As a conclusion from Deliverable 3.1, each step of the customer journey aims to offer support and information at the right time to smoothen the renovation process, giving a clear insight into what interactions are foreseen between the citizens and Citizen Hub facilitators and what the actions for the Citizen Hubs are per phase of the journey.

Providing the right information and support at the right moment is crucial, therefore, the required financial and technical guidance has been mapped and linked to the different steps in the customer journey. This includes clear, and meaningful information about the renovation process, financial options, energy performance, IEQ and well-being impacts. What kind of *touchpoints*, information, and guidance is needed depends on the emotions, needs and wants of the customer at that point in their journey. These aspects are included in the customer journey as *drivers and barriers*. Relevant drivers and barriers are of course very person specific, therefore several possible drivers and barriers have been included in the general Save the Homes customer journey and these can be further narrowed down and specified when considering a persona specific customer journey. Knowing the emotions and barriers of a customer means that also the risks, which are possible *dropout moments* for the customer, can be defined per phase. The insight that is gained by mapping these risks and the reasons behind them helps in optimising the journey and preventing, or minimising, the dropout risks.

The customer journey implementation strategy for each pilot will help reaching the following Save the Homes goals:

a) 4500 homeowners make contact with Citizen Hubs throughout the project and make an appointment at the OSS office (from Stop 0 to Stop 1);
b) 1800 of these homeowners do a deep renovation of their homes (from Stop 2 to Stop 3);

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[3] MaREI, 'One Stop Shop digital platform: EU H2020 Turnkey Retrofit project no 839134', *MaREI Retrofitting Homes Symposium*, 2020.

[4] J. Cicmanova, M. Eisermann and T. Maraquin, 'How to Set Up a One-stop-shop for Integrated Home Energy Renovation? A step-by-step guide for local authorities and other actors', 2020.

c)   80% of the homeowners entering Stop 3 are satisfied about the quality of the journey and the quality of the renovation (Stop 4). The success indicators defined for each customer journey phase at the pilots are met.

It would be good to discover what the conversion rates from step to step are. Until now we always had a 20-20 ratio: 20 percent of the people looking for a renovation will go on and ask advice, and 20 percent of those actually do the renovation. E.g., in another similar project (Ikwoon-De Bilt) BHG reached the following results:

•   620.000 views online (banners and ads)
•   3.000 clicks on the advertisement
•   510 views of youtube movies
•   1.700 visitors on the Ik woon webite
•   445 registrations in the app portal.

Each phase of the customer journey intends to ease the renovation process and makes the whole experience user-friendly and appealing. Each phase has its own goal where the overall aim is to drive decision-making and facilitate quicker renovation actions. The figure below represents in visual the key objective, tasks, key stakeholders and key processes of each of the customer journey phases:
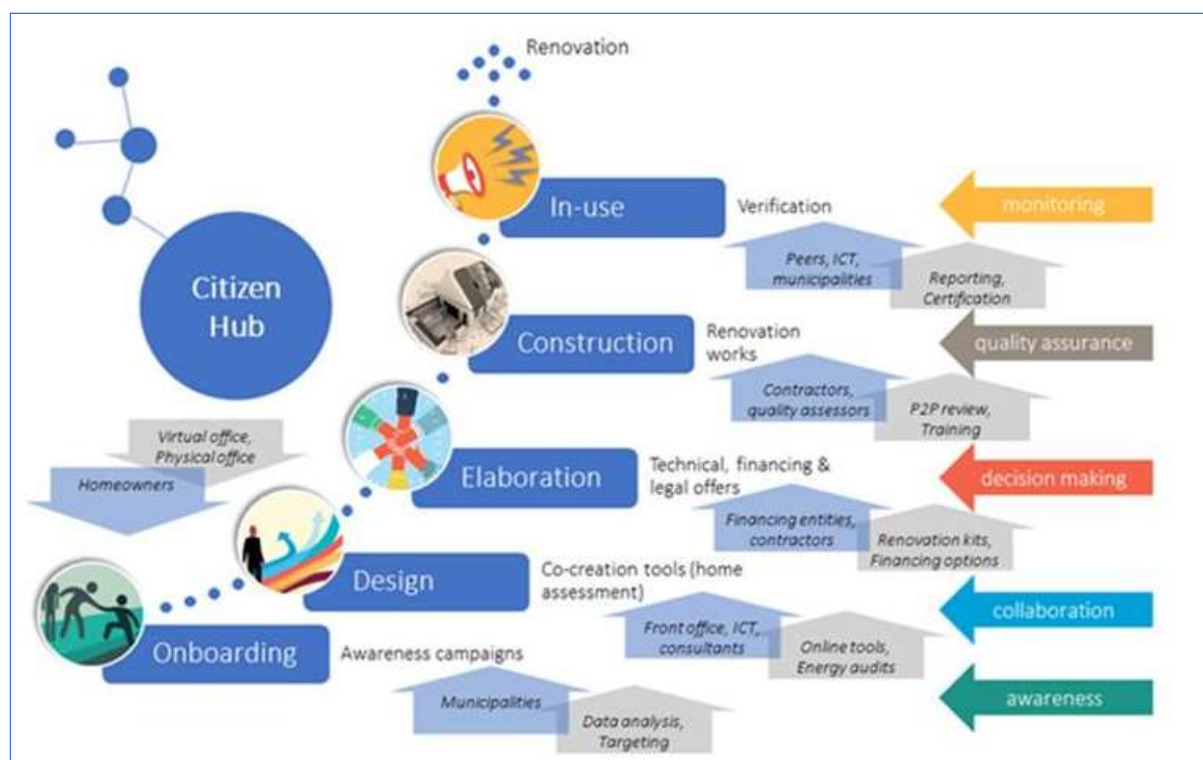

Figure 1.- Save the homes conceptual customer journey

And the table below summarized Deliverable 3.1 findings:

stop	Objective based on needs & barriers	Main goal	Potential risks	Touchpoints
0 - Onboarding	Establishing **contact** with the citizen with the aim to create an **emotional response**. Due to the COVID-19 pandemic, focus will be mainly online channels or other channels with indirect contact such as radio or newspapers. Provide **more information** to increase **interest**. When citizens take the step of getting **involved** and do their **own research** --> to stop 1.	**Raising awareness and getting people curious:** Information must be easily available and clearly show the citizen what Save the Homes is and what the benefits are as opposed to the traditional home renovation processes that people might have encountered previously.	Targeting campaigns do not reach the citizens: **channels** used not relevant for the targeted persona. Follow-up is too hard: citizens are not interested enough to look further or do not encounter the right **information**. Miscommunication or unmet expectations: **missmatch** between customer needs and StH intentions	Campaigning at popular places/**events** in the city Community meetings or **newsletters** Social **media, n**ewspapers or radio **Word of mouth**: local heros, videos or open house ... Information **sessions** **Website** with information & interactive tools Sign up for playful/simple **home assessments** ... Contact **form** Phone **call** Physical hub walk-in **visit**
1 - Design	Providing **information & tools** to citizens so they can gain more insights and **orientate themselves**: - Simplified version of a home **assessment** by themselves - Renovation **packages** tailored to building type and persona needs and drivers - **Financial** online tools (provided by different banks), and advise on suitable and available financial schemes such as loan options, subsidies, and grants. - Simple and clear **overview** available (on the website and/or in a physical brochure) Get a **personal appointment** to get **personalized advice** on renovation package to improve the performance of the home in a confidential manner.	**Increasing knowledge of the homeowner and giving them insight and trust in the process.** Educating the homeowner is making the process transparent. Another aspect is increasing the knowledge of the homeowner on technical level about to the possible renovation possibilities and the impact, not only regarding energy use and costs but also on the topic of comfort and health. The homeowner will also be informed about the process that they will walk through when joining Save the Homes; what the different steps are, what is expected of them, and what they can expect from the Citizen Hub.	Accepting action plan proposal and move to the next phase **not free** of charge: if not satisfied with the action plan offer, **drop out** of the program or too many **follow-up** meetings **Uncertainty** of homeowners in combination with the financial barrier forms a large dropout risk. Not having the right information and tools **available**, or not being able to convey the information in a way that is **suitable** for the homeowner. Issues seeking **contact** with the hub: not clear or easily, response not sufficiently fast.	**Tools** & information (on website and/or brochures) Automated **advice** by the tools **Contact** form/information **Appointment** Advice fee (first real **commitment**)
2 - Elaboration	**Organising** the financing, renovation packages, decision making and preparing for the construction of the renovation works. Real complexity of renovation, ensure sufficient **support** to citizens. Guide through process in a holistic and **understandable** way. Assist in choosing the right renovation **package**. Provide contact information of trusted **installers and contractors**. Support in obtaining the **financing**.	**Informing and guiding the customer to prepare for real works:** making it easier to obtain the required financing, and clearly communicating the renovation offer in such a way that they are comparable to other offers/possibilities. The gains in this stop are guidance and full understanding of the process for the homeowner, trusted relationships with the staff of the hub, and assured quality of the renovation professionals recommended by the hub.	High **complexity**, overwhelming the client, who reconsider their willingness to renovate. **No satisfaccion** with the design or with the offer --> dropout or it takes the process a few steps back. **Misscommunication** with the bank and renovation professionals.	Home **assessment** Meeting renovation **advice** Meeting financial **guidance** Final **plan** (= renovation advice + financial advice) **Offer**(s) Signed **contract**
3 - Construction	Renovation to be realised **according to the plan** agreed. Quality assessed during and after the renovation works (**verified parties**). Provide tools (personal project dashboard) where both the homeowner and the professional can **track** the progress. When the renovation works are finished, **final report** on the taken measures, quality evaluation and benefits.	**Transparency and trust:** renovation works with high quality and communicate it in a transparent way. The aim is to gain general trust among the homeowners with regard to the quality of the renovation works and the benefits of the renovation. This will lead to positive experiences which will be shared by homeowners, resulting in positive peer-to-peer communication.	**Quality of the process**: the contractor cannot start soon enough, the planning is not adhered to, or there are unexpected (not informed beforehand) influences on the daily life of the homeowner. **Quality delivered** not according to standards or renovation did not result in clear improvements in energy use or quality of the indoor environment. Less likely to cause a drop-outs but result in **bad experiences** and bad publicity.	Personal progress **dashboard** Satisfaction **questionnaires** (for homeowner and contractor during renovation works) (Periodic & final) **reports**
4 - In-use	**Monitoring** the performance of the dwellings. Original dwelling's performance **compared** to the performance of the improved dwelling. **Training** about the home improvement and the (optional) installing of smart meters or behavioural changes. Opportunity to **share** their opinion on the renovation works itself and the fully guided process of the hub.	**Learn and share improved building's state (energy efficiency, IEQ) and sustainable way of life in the new indoor conditions:** The experiences can be shared with other citizens to inspire them to join the movement; raising the overall awareness and acceptance of deep renovations and rebuilding trust in renovation work and its quality. The multiple measurable benefits will be highlighted (going beyond energy savings).	Improvement of the renovation works is **not measurable**, noticeable, or communicated properly to the homeowner. **Uncertainty** about results or other ad experiences resulting in bad publicity instead of the positive showcases. **Not enough feedback** so the process cannot be optimised properly based on the customer experiences.	Validation **report** (comparing before-planned-after) Information/ usage **guide** on smart monitoring or behavioural change tips Sharing **questionnaires or templates**

Table 2.- Save the Homes customer journey framework (D3.1)

4 The pilot cities ecosystems

According to Objective 1 (to make home renovation easier, faster and more affordable for homeowners by designing an economically sustainable citizen-oriented OSS model, 'Citizen Hub', to be deployed by municipalities), the 'Citizen Hub' is an OSS model endorsed by a municipality, a trustworthy entity ensuring that the process is independent, transparent and of high quality for their citizens. It is specifically focused on enhancing the homeowners' experience throughout the home renovation journey, and therefore, the Citizen Hub modules (technical renovation kits, financing offers, audits, etc.) are to be developed by relevant local experts and combined into a holistic offer endorsed by municipalities.

Sav€ the Homes will create innovative 'integrated home renovation services' within already established frameworks for OSS networks at the City of Rotterdam, the Netherlands, and Municipality of Valencia, Spain. The project builds upon the existing climate targets set by the two cities (according to the initiative of Covenant of Mayors (CoM) for Climate & Energy, 15% of the mitigation actions and 9% of the adaptation actions proposed by cities in their Sustainable Energy and Climate Action Plans address residential buildings[5]).

4.1 Comunitat Valenciana – ES

The Comunitat Valenciana (Valencia Region) is a region of Spain. With more than 5 million inhabitants, it is the fourth most populous region in the country, and its capital city, Valencia, is the third largest city and metropolitan area in Spain. It is located along the Mediterranean coast on the east side of the Iberian Peninsula.

The geographical scope for this pilot experience will be local at first instance, and then regional, as a replication phase). Therefore, cities involved are the City of Valencia (815,440 inhabitants) as front-runner and partner of the project, and the follower cities in the region: City of Elche (230,000 inhabitants), City of Gandía (74,000), Municipality of Onda (12,000 inhabitants) City of Alcoi (59,000 inhabitants), and Xarxa Xaloc network cities, supported by the Regional Government (all of them signed project Letters of Support).

The stakeholders represented on the Advisory Boards are presented in the table below:

Demand side – Private AB: Building owners and organizations (association of final users and consumers)		Demand side – Public AB: City councils, local governments, and regional/ national organizations such as Public Housing Providers or Associations of public condominium members		Supply side AB: Producers, suppliers, contractors etc. with good reputation and references on local level	
Consumers associations	Unió de Consumidors de la Comunitat Valenciana	Local government	Ajuntament d'Onda	Property Managers	VRCP – Colegio de administradores de fincas
	Asociación Valenciana de Consumidores y Usuarios (AVACU)		Ajuntament de Gandia		Consejo Valenciano de Colegios de Agentes de la Propiedad Inmobiliaria (API)
condos	N condominiums through VRCP members		Ajuntament d'Alcoi		Asociación española de Gestores Públicos de Vivienda y suelo (AVS)

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[5] Covenant of Mayors figures: https://www.covenantofmayors.eu/about/covenant-initiative/covenant-in-figures.html

Neighbours' association	N associations through VCE contacts		Diputació de València	Professionals	Colegio Oficial de Arquitectos de la Comunidad Valenciana (COACV)
Neighbours' association	N associations through IVE contacts	Regional government	Promociones e Iniciativas Municipales de Elche (PIMESA)	Professionals	Colegio Territorial de arquitectos de Castellón (CTAC)
			Federació Valenciana de Municipis i Províncies (FVMP)		Colegio Oficial Ingenieros Industriales (IICV) - contacto VCE
			Conselleria d'Habitatge i Arquitectura Bioclimàtica		COGITI - contacto VCE
			Basque Government - Environment, Territorial Planning and Housing		Unión Profesional (contacto VRCP)
Financial side AB: Banks o ant other financial entity facilitating financing of renovation works (linking demand and supply)				Companies	Asociación Valenciana de Empresas del Sector Energético (AVAESEN)
Banks	Arquia				Asociación de empresas Promotoras de Valencia (APROVA)
Banks	Triodos				Federación Valenciana de Empresarios de la construcción (FEVEC)
Banks	Caixa Popular				Asociación de Promotores Inmobiliarios de la Provincia de Alicante (PROVIA)
Banks	Banco Sabadell				
Banks	Deutsche Bank				Plataforma Tecnológica Española de Construcción (PTEC)
Aggregat.	Prodinamia				ATECYR – Spanish Technical Association of Air Conditioning and Refrigeration
Crowd sourcing	eCrowd				

Table 3.- Local Advisory Board - Valencia Region - ES

4.1.1 Stop 0 – On-boarding

The objectives of this stage related to needs and expectations are to establish contact with the citizen with the aim to create an emotional response and then provide more information to increase interest. When citizens take the step of getting involved and do their own research, they go into stop 1.

Potential touchpoints are managed through functionalities, services or tools such as campaigning at popular places/events in the city, community meetings or newsletters, social media, newspapers or radio or word of mouth (local heros, videos or open house). Next substeps are managed through Information sessions, Website with information & interactive tools or Sign up for playful/simple home assessments, while steping into next stage can de done through Contact form, Phone call or Physical hub walk-in visit.

Table below summarizes the functionalities or services to be provided in the Valencian OSS model, and the tools that can be used to offer or facilitate them:

Stop 0 - ON-BOARDING				
	RAISING AWARENESS		INTERACTION	
	Functionalities	Tools	Functionalities	Tools
ACTORS — Demand side	Repository of user-friendly material (guides, videos, etc.) to raise awareness about the benefits of retrofitting, sustainability and circularity concepts, etc.	Some of the videos in: https://www.turnkey-retrofit.eu/photos-and-videos/album-1/	Contact with technicians / other demand-side actors to solve technical doubts / ask about their experiences	LISTS OF PROFESSIONALS. Chartered architects: https://www.coacv.org/es/arquitectos/arquitectos-coacv/ Trained in retrofitting/specific areas: https://www.five.es/formacion/listados-de-profesionales/
	Single portal centralizing the regulations in force to know the legal framework	To be incorporated in a user-friendly way; REGULATIONS AT NATIONAL LEVEL: https://www.mitma.gob.es/arquitectura-vivienda-y-suelo/normativa REGULATIONS AT REGIONAL LEVEL: https://habitatge.gva.es/es/web/vivienda-y-	Direct contact with corresponding authorities to solve doubts about the legal framework	Tool for communication between demand side and OSS staff on demand
	Single portal centralizing the available subsidies for standard actions (simulator?)	SUBSIDIES AT REGIONAL LEVEL (possibility of include them in form of pre-test/simulator?):	Direct contact with corresponding authorites to solve doubts about available incentives	Tool for communication between demand side and OSS staff on demand
	Single portal centralizing financial institutions with specific products for retrofitting, also aimed at homeowners' associations (pre-test on financing options?)	LIST OF FIs AT NATIONAL LEVEL (possibility of include this in form of a pre-test/simulator?): https://www.idae.es/ayudas-y-financiacion/para-la-rehabilitacion-de-edificios/programa-pree-rehabilitacion-energetica-de/prestamos-para-complementar-	Direct contact financial entities to solve doubts about financing	Tool for communication between demand side and OSS staff on demand
Supply side	Repository of user-friendly material (guides, videos, etc.) to know demand side needs	CIRCULARITY EVALUATION. Dwelling scale: https://www.circularhomes.eu/circularity-tool-homes/ Building scale: https://www.circularhomes.eu/circularity-tool-buildings/	Direct contact with interested demand-side actors to know their profiles, needs & preferences	Forum/tool for communication between demand and supply sides organised by themes (energy consumption, dwelling/building needs, financing)
	Single portal centralizing the regulations in force to know the legal framework	Same as for the demand side	Direct contact with corresponding authorities to solve doubts on building regulations	Tool for communication between supply side and OSS staff on demand
	Single portal centralizing the available subsidies for standard actions	Same as for the demand side	Direct contact with corresponding authorities to solve doubts on available subsidies	Tool for communication between supply side and OSS staff on demand
	Single portal centralizing financial institutions with specific products for retrofitting, also aimed at homeowners' associations	Same as for the demand side	Direct contact with corresponding financial entities to solve doubts about financing products	Tool for communication between supply side and OSS staff on demand
Staff			Direct contact with interested demand-side actors to know their technical needs and the feasibility of interventions	Tool for communication between demand side and OSS staff on demand
			Direct contact with supply-side actors to know technical solutions available, innovation, feasibility, ranges of prices, etc.	Tool for communication between supply side and OSS staff on demand
			Direct contact with corresponding authorities to solve doubts on available subsidies	Tool for priority communication between OSS staff and Public Administration
			Direct contact with financial entities to solve doubts about financing products	Tool for priority communication between OSS staff and Financial Institutions

Table 4.- ES pilot functionalities, services and tools for stop 0

Many of the services aimed to provide are in place and the main gap is in the stablidhment of proper **communication bilateral channels** between stakeholders.

4.1.2   Stop 1 – Design

The objectives of this stage related to needs and expectations are to provide information & tools to citizens so they can gain more insights and orientate themselves for simplified version of a home assessment, renovation packages tailored to building type and persona needs and drivers, financial online tools (provided by different banks), and advise on suitable and available financial schemes such as loan options, subsidies, and grants, or simple and clear overview available (on the website and/or in a physical brochure). Then to get a personal appointment and personalized advice on renovation package to improve the performance of the home in a confidential manner.

Potential touchpoints are managed through functionalities, services or tools such as tools & information (on website and/or brochures), automated advice by the tools, contact form/information, appointment and finally advice fee (first real commitment).

Table below summarizes the functionalities or services to be provided in the Valencian OSS model, and the tools that can be used to offer or facilitate them:

		Stop 1 - EVALUATION			
		AUTOEVALUATION		**ASSISTED EVALUATION**	
		Functionalities	TT/SS/AAs	Functionalities	TT/SS/AAs
ACTORS	**Demand side**	On-line survey to know self-consumption	**DWELLING SCALE:** https://www.five.es/productos/herramientas-on-line/test-de-consumo-energetico/ **BUILDING SCALE:** https://app.enerfund.eu/	Virtual assistance from experts (from supply side to demand side; from staff of the OSS offices to demand side; between actors on the supply side)	**Forum/tool for communication between demand and supply sides organised by themes** (energy consumption, dwelling/building needs, financing) **Forum/tool for communication between demand and supply sides organised by themes** (energy consumption, dwelling/building needs, subsidies & financing, legal framework)? **Examples:** https://preguntas.habitissimo.es/rehabilitacion-edificios https://www.soloarquitectura.com/foros/#promotores-y-propietarios.44
		On-line user-friendly information to know dwelling basic characteristics/needs	**BUILDING SCALE:** http://webtool.building-typology.eu/#bm		
		On-line survey to know both self-consumption and dwelling basic characteristics/needs, with additional information on comfort, etc.	**DWELLING & BUILDING SCALE: Labelling wizard:** https://tar-labeling.web.app/#/ **Morphological design wizard:** https://tar-		
		On-line user friendly information to know energy efficiency potential measures & costs	**DWELLING SCALE:** http://www.five.es/espacio-ciudadano/vivienda-turistica/autoevaluacion-vt/ **DWELLING & BUILDING SCALE:** https://www.solutions4renovation.eu/es/ **BUILDING SCALE:** https://4rineu.eu/wp-		
	Supply side			Design tools based on costs	**BUILDING SCALE (accessibility):** https://www.five.es/productos/herramientas-on-line/ascensores/ **DWELLING SCALE (bathrooms & kitchens):** https://www.five.es/productos/herramientas-
				On-line survey to perform an energy calculation and a financial calculation	**BUILDING SCALE: Pro-design wizard:** https://bramo.eu/tar-lrvl-8/public/wizard-pro **Public wizard:** https://www.triple-a-reno.eu/1.1.0/public/wizard
				On-line survey / presental interview to know users consumption & behaviour	
				On-line survey / on-site evaluation to know dwelling basic characteristics/needs	
	Staff				

Table 5.-ES pilot functionalities, services and tools for stop 1

Many of the services aimed to provide are in place and the main gap is in the stablidhment of proper **communication bilateral channels** between stakeholders.

4.1.3 Stop 2 – Elaboration

The objectives of this stage related to needs and expectations are to organize the financing, renovation packages, decision making and preparing for the construction of the renovation works, where real complexity of renovation arises, ensure sufficient support to citizens; guide through process in a holistic and understandable way; assist in choosing the right renovation package; provide contact information of trusted installers and contractors, or support in obtaining the financing.

Potential touchpoints are managed through functionalities, services or tools such as Home assessment, Meeting renovation advice, Meeting financial guidance, Final plan (= renovation advice + financial advice), Offer(s) and finally Signed contract.

Table below summarizes the functionalities or services to be provided in the Valencian OSS model, and the tools that can be used to offer or facilitate them:

		DESIGN		SELECTION		FORMALIZATION	
		Functionalities	TT/SS/AAs	Functionalities	TT/SS/AAs	Functionalities	TT/SS/AAs
ACTORS	Demand side			User-friendly comparator to ask for/compare offers/quotations	https://reformanerr.com/presupuesto/ https://www.habitissimo.es/presupuestos/reformas	Tool allowing the generation of a user-friendly contract based on the previous selection, with a clear	Beyond providing a **standard contract template** (different for each type of intervention) **and/or advice**, makes it
				Directory of "neutral" technicians (just involved in assessment and certification) for external technical advice, facilitating decision-making	**As in _Stop 0 - Interaction_. LISTS OF PROFESSIONALS. Chartered architects:** https://www.coacv.org/es/arquitectos/arquitectos-coacv/ **Trained in retrofitting/specific areas:** https://www.five.es/formacio		
				Single portal centralizing the available subsidies and the corresponding requirements	**As in _Stop 0 - Raising awareness_. SUBSIDIES AT REGIONAL LEVEL (possibility of include them**		
				Simulator unifying available/combinable grants and financing options to know			
	Supply side	As a basis: platform with evaluation results (from autoevaluation / assisted evaluation)	**Associated with the previous evaluation phase**, since it is based on it			Tool allowing the generation of a user-friendly contract based on the previous design proposal, with a clear definition of the provided services	_Same as for the demand side_
		Single portal centralizing the regulations in force to know the legal framework	**REGULATIONS AT NATIONAL LEVEL:** https://www.mitma.gob.es/arquitectura-vivienda-y-suelo/normativa **REGULATIONS AT**				
		Evaluation form/check-list to check compliance with regulations	**Summary of current regulations** in the form of a checklist / **Platform to allow**				
		Information on standard solutions adapted to the local context	Sheets under development by IVE **Renovation package sheets**: https://4rineu.eu/wp-content/uploads/2021/02/4Ri				
	Staff	Methodical and standardized verification procedure (evaluation form/check-list) to	**Platform to allow verification of documentation** uploaded by			Tool allowing the generation of a document ensuring the legal compliance of the project	_Same as for the demand side_
		Evaluation tool to facilitate the corrections of errors/documentation completion in the case of non-compliance (generating user-	**Platform to allow verification of documentation** uploaded by the Supply Side				

Table 6.- ES pilot functionalities, services and tools for stop 2

Many of the services aimed to provide are in place and the main gap is in the provision of **templates**, **checklists and validation tools** for design and contrat from and with external agents.

4.1.4 Stop 3 – Construction

The objectives of this stage related to needs and expectations are to realise renovation according to the plan agreed, assess quality during and after the renovation works (verified parties), provide tools (personal project dashboard) where both the homeowner and the professional can track the progress, and, when the renovation works are finished, provide a final report on the taken measures, quality evaluation and benefits.

Potential touchpoints are managed through functionalities, services or tools such as Personal progress dashboard, Satisfaction questionnaires (for homeowner and contractor during renovation works) or (Periodic & final) reports.

Table Table 7 summarizes the functionalities or services to be provided in the Valencian OSS model, and the tools that can be used to offer or facilitate them.

In this stage many of the services aimed to provide are not in place. The main objective is to implement the **madiation strategy** between demand and supply side and the quality assurance.

4.1.5 Stop 4 – In use

The objectives of this stage related to needs and expectations are to monitor the performance of the dwellings by showing the original dwelling's performance compared to the performance of the improved dwelling, to train about the home improvement and the (optional) installing of smart meters or behavioural changes, or offer the opportunity to share their opinion on the renovation works itself and the fully guided process of the hub.

Potential touchpoints are managed through functionalities, services or tools such as Validation report (comparing before-planned-after), Information/ usage guide on smart monitoring or behavioural change tips or Sharing questionnaires or templates.

Table 8 summarizes the functionalities or services to be provided in the Valencian OSS model, and the tools that can be used to offer or facilitate them.

Many of the services aimed to provide are in place and the main gap is in the establishment of proper **communication bilateral channels** between stakeholders.

		TRAINING		ASSESSMENT		MEDIATION		QUALITY ASSURANCE	
		Stop 3 - REALIZATION							
		Functionalities	TT/SS/AAs	Functionalities	TT/SS/AAs	Functionalities	TT/SS/AAs	Functionalities	TT/SS/AAs
ACTORS — Demand side		Workshops / Guidelines/tips to reduce/optimize energy consumption based on the habits of the users	Oficina de la energia workshops and training days	Software allowing the generation of a maintenance programme for existing residential buildings.	https://www.five.es/productos/herramientas-on-line/pomees/	Directory of "neutral" technicians (just involved in assessment and certification) for extra technical support, in case of problems with contracted professionals			
						Directory of legal advisors for legal support, in case of problems (works/building permits/bureaucracy, etc.)			
						User-friendly information about the legal procedures; forms allowing direct submission of documentation			
	Supply side	To know the operation and installation of the demanded solutions: virtual classroom with video-tutorials; possibility to request face-to-face tutoring	**White-collar workers:** https://www.five.es/formacion/ **Blue-collar workers (official training/free courses):** https://www.fundacionlaboral.org/	Evaluation procedures to check progress in terms of time and quality, to quickly and effectively follow up on works	**iBRoad tools: Building Renovation Roadmap & Logbook for energy auditors**: https://ibroad-project.eu/downloads/REPORTD42 / https://ibroad-project.eu/downloads/REPORTD43	Calendar for requesting appointments (by the demand side); control of the time dedicated to mediation, to optimize the time spent on mediation with demand-side		Evaluation procedures, including steps to be followed and main elements to be checked, for external assessment to ensure the quality of works	
		To stay up to date on the latest energy renovation solutions: periodic newsletter summarizing the latest solutions available	**Newsletter** for those professionals (produced by OSSs staff) included in the lists?	Form to include information during evaluation visits and results (for authorizing payments)	http://italiainclassea.enea.it/condomini4-0/	Forms for direct contact to corresponding bodies, allowing information upload, view of the status of procedures, etc., to optimize the time spent on legal procedures		Form to include information during evaluation visits and results (quality of works) to centralize supporting documents of the work status at each stage (photos, etc.)	**BUILT2SPEC Tool: Energy Efficiency Quality Checks:** https://built2spec-project.eu/tools/energy-efficiency-quality-checks/
		To stay up to date on changes in the legislative framework/procedures: notification board including updates	**Newsletter** for those professionals (produced by OSSs staff) included in the lists?	Platform to centralize supporting documents of the work status at each stage (photos, etc.)		Tool showing in real time information on payments (status of payments, authorisations, dates of receipts, etc.)		Real-time updating of the assessment results, to offer demand side real-time information on the status of works	
				Real-time updating of the assessment results, to offer demand side real-time information on the status of works					
	Staff	To stay up to date on the latest energy renovation solutions: periodic newsletter summarizing the latest solutions available	**Newsletter** for professionals included in the lists of professionals? / **On-line training**?	Platform summarizing all the previous information provided by the supply side	OSSs staff work as external 'auditors' of the professionals performing the works	User-friendly forms, allowing direct submission of documentation, making procedures more accessible to minimise the time spent on resolving queries			
		To stay up to date on changes in the legislative framework/procedures: notification board including updates	**Newsletter** for OSSs staff directly from the public administration / **Specific training days**			Instant alerts tool for accelerating communication procedures and timeframes			
						Access to a platform centralizing all project related documentation to avoid intermediate steps and speed up error correction / documentatin submission processes			

Table 7.- ES pilot functionalities, services and tools for stop 3

		Stop 4 - VALIDATION							
		FEEDBACK		COMPARISON		MONITORING		CERTIFICATION	
		Functionalities	TT/SS/AAs	Functionalities	TT/SS/AAs	Functionalities	TT/SS/AAs	Functionalities	TT/SS/AAs
ACTORS	Demand side	Platform for complaints/notifying faults in works, with response time margins depending on the type of feedback (post-installation issues, works fixing, etc.)	**Tool for communication between demand and supply sides organised by themes** (energy consumption, dwelling/building needs, financing)	Tool allowing the graphical comparison of the consumption before/after the works	Based on **evaluation & assisted evaluation** tools form stage 1	Platform displaying real-time monitoring data in a user-friendly way allowing objective data comparison (previous step)	**MOBISTYLE RESULTS** **Dashboard (different kind of users):** https://www.mobistyle-project.eu/en/mobistyle/results/mobistyle-dashboard **Game (residential users):** https://www.mobistyle-project.eu/en/mobistyle/results/mobistyle-game	Information on quality certification system awarded to residential buildings with significant improvements over the mandatory minimums	*Information on the system employed by the supply side* **BUILDING SCALE:** https://www.five.es/certificacion-edificios/viviendas/
	Supply side			Tool allowing the comparison of the building elements behaviour before/after the works	Based on **evaluation & assisted evaluation tools** form stage 1	Platform displaying real-time monitoring data allowing objective data comparison (previous step)	**MOBISTYLE RESULTS** **Expert tool:** https://www.mobistyle-project.eu/en/mobistyle/results/mobistyle-expert-tool	Quality certification system awarded to residential buildings with significant improvements over the mandatory minimums	**BUILDING SCALE:** https://www.five.es/certificacion-edificios/viviendas/
								Tool simplifying the process by using already recorded data and including guidelines to get an official certification of the obtained improvements	
	Staff			Tool allowing the comparison of the building elements behaviour before/after the works	Based on **evaluation & assisted evaluation tools** form stage 1	Platform displaying real-time monitoring data allowing objective data comparison (previous step)	**Same as for the supply side**	Quality certification system awarded to residential buildings with significant improvements over the mandatory minimums	*Same as for the supply side*

Table 8.- ES pilot functionalities, services and tools for stop 4

4.2 Rotterdam – NL

In the Rotterdam demonstration a wide net of stakeholders is in place. It is not only about who owns the homes, but also what does the supply side offer and what does the society ask, This is a complex playing field.

Demand			Supply		Intermediair			
user	owner	Repr.	Facilities	Execution	Advice	Intermediair	Social	Institute
user	owner-occupant · housing association · owner in condominium · investor · commercial rent	association of condominium owners	owners association · building manager · network operator · energy supplier · water supplier · data / interne provider	contractor · sub contractor · specialist · supplier · umbrella organisation	desinger /architect · consultant	energy office · local initiatives (neigborhood) · subsidy provider · bank	heath and welcare · hosing immigrants Association · counseling welfare	green funds (loan) · municipality · education · certification · standard committee · social services

Figure 2: Overview of actors - Rotterdam

Within this playing field, the HUB has to fulfil a specific task. In D4.5 a definition of the HUB is stated:

Definition of a HUB

> A HUB is trustworthy place, where citizens can get information, in a digital or physical way, to get acquainted with (sustainable) renovation, the measures, the finance and the impact it has on living. Besides information, it functions as a gateway towards contractors, suppliers and intermediates, so that individual home owners can actual make the step towards execution.

The HUB will not replace actors in this network, but **facilitate** them to connect to other actors. They bring demand and supply together and even address social problems, like (energy) poverty, lack of labor potential, but also the social task to provide housing for refugees or have enough affordable housing available, in cooperation with housing associations. The issue of sustainability is another important aspect in the social housing task, where all stakeholders are involved.

The Save the Homes project distinguishes several stops, as described in chapter 3. These stops will be elaborated on in the following paragraphs.

4.2.1 Stop 0 – On-boarding

The objectives of this stage related to needs and expectations are to establish contact with the citizen with the aim to create an emotional response and then provide more information to increase interest. When citizens take the step of getting involved and do their own research, they go into stop 1.

This step is mainly about raising **awareness**. It comprises all activities done *before* people know that they are going tot do something to their home. The Dutch national government has an awareness campaign 'Iedereen doet wat'[6] (translate: everyone does something), but this is already on the level of solutions. The fact that there is a environmental problem and that the sea levels are rising if we are not going to change, is not always as clear as it should be. This makes it harder to raise the necessary awareness and make people move from step 0 to step 1.

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[6] https://www.iedereendoetwat.nl/energie

Figure 3: website national government

At this moment other problems are oppressing the **renovation ambitions**. Because of nitrogen deposition several building projects are cancelled and degasification of neighbourhoods takes up a lot of time and capacity. Therefore raising the awareness of what is needed must become clear.

When it is about informing people what they can do to their homes, to do something about the environmental challenges that are opposing us, Alex Energie can provide several **services**. Ranging from an Energy coach, energy expert or the use of Ikwoon. Alex Energie has 'Buurmannen' (neighbours), local citizens who tell their own neighbours about the possibilities to improve their homes. Also more advanced services like a heat scan or a preliminary advice can be given. But these activities are a move towards step 1. The step before is about raising awareness for energy reduction as a relevant topic. Perhaps the local government can do this, but at this moment the signal the national government is giving is not a very strong signal. This makes it harder for the municipality of Rotterdam and Alex Energy to get people involved in energy reduction.

One driver that is getting stronger are the **energy prices**. The prices of energy have risen with almost 100%, the costs of a cubic meter of gas was about € 0,70 a year ago and at this moment (Februar 2022) €1,80. The maximum allowed prices for heat (regulated by the government) was € 25,51 (2021) and is now € 53,95 (2022)[7]. That, combined with the degasification programs, and some subsidies will bring more awareness. But that is also the moment to tell people *what* they have to do, and that these measures should comprise more than just new glazing and some minor insulation.

In the past, the municipality already organised activities. In D3.7 chapter 4.2 these are described in full. Just a summary gives a short inventory of actions and initiatives of Energy Saving in the period 2014 to 2021 in Rotterdam, that relate to step 0:

1. *Neighbourhood scan with thermal imaging photo (Smart living)*
2. *Construction site + heat photo (Smart living)*
3. *Door-to-door action*
4. *Open houses*
5. *Heat scan*
6. *Sustainable homes route*
7. *Energy breakfast*
8. *Opbouwwerk*
9. *Education / raising awareness*
10. *Energy coach*
11. *Eigen Huis Coach*
12. *Pop-up store*
13. *RRE and RREW energy boxes (with KEB)*
14. *Power for your home*

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[7] https://www.acm.nl/nl/warmtetarieven

4.2.2 Stop 1 – Design

The objectives of this stage related to needs and expectations are to provide information & tools to citizens so they can gain more insights and orientate themselves for simplified version of a home assessment, renovation packages tailored to building type and persona needs and drivers, financial online tools (provided by different banks), and advise on suitable and available financial schemes such as loan options, subsidies, and grants, or simple and clear overview available (on the website and/or in a physical brochure). Then to get a personal appointment and personalized advice on renovation package to improve the performance of the home in a confidential manner.

Figure 4: screen of Ikwoon: a solution, with quality aspects and costs is illustrated

This is the stage where the most potential is in place for Alex Energie. They have people that can act as energy coach or energy expert. When upscaling is in place, this service can be hired. In this phase people know they have to do something, but they are looking what the **best solution** is for their home, and their situation. In the first part Ikwoon can function as a guide, especially when a lot of people need to be approached, a digital way that still serves your own situation is sufficient. You will get information about the measure, and what it brings you. Not only in a way of energy efficiency, but also in other qualities, like more space, a nice appearance, more comfort and so on. To make this advice complete, a price range is mentioned, so people know what to expect.

With this knowledge they can move on. They can think about **combinations of measures,** if they want to do it now or in the future, and if they want to do it on their own, or with other interested people. That is where the energy expert comes into view. They can introduce people to solutions, more information and work towards a go /no go moment for the houseowners to actual get into a renovation.

In the Business Model Canvas in D3.3 these activities are also a part of the indicators and channels. Next to the actions mentioned in Step 0 there are some initiatives that are already in place and can be added to the palette of solutions, available in Rotterdam.

1. *Purchasing campaigns*
2. *Opbouwwerk*
3. *Energy coach*
4. *Eigen Huis Coach*
5. *Power for your home*
6. *Triple A: Awareness, easy Access and Adoption*
7. *Loans from Rotterdam Energy transition funds ETF*

4.2.3 Stop 2 – Elaboration

The objectives of this stage related to needs and expectations are to organize the financing, renovation packages, decision making and preparing for the construction of the renovation works, where real complexity of renovation arises, ensure sufficient support to citizens; guide through process in a holistic and understandable way; assist in choosing the right renovation package; provide contact information of trusted installers and contractors, or support in obtaining the financing.

The HUB, by Alex Energy offers three different approaches:

A) *Single measure (stacked)*

The emphasis lies on **small renovation steps**, that people can do on their own. Because the extent is limited, there is some advice needed from the energy coach or perhaps energy expert, but in most cases the solutions are simple. I.e. replacing glass, adding roofing material, insulating the cavity wall. In most cases quotations can be derived at WoonWijzerWinkel .

B) *Collective assignment (integral)*

This trajectory tries to **bundle** several citizens, that want to do more measures. This doesn't have to be all the same measures. But because we are not dealing with one individual but with a group, is will be easier to get contractors involved, and the process of informing people, and organising a quotation round can be spread over more people, and thus cheaper. In this case HUB Alexander acts as an **organizing point**, that can do a lot themselves, and if needed can get experts involved. The pilot in Lieven de Keylaan is an example. See D3.7 for a further description of the route.

C) *Unique assignment (N=1)*

The last step occurs when an individual wants to do more measures at once, but his/her questions are so **specific** that it is not wise to combine this home with other homes. Therefore it becomes an individual task, where the HUB can fulfil the first steps, and if necessary refer to experts.

At this moment the exact tasks of HUB Alexander are getting formed, and tested at the same time in the pilot project Lieven de Key. Therefore the steps as mentioned above still can shift towards the end of the project.

4.2.4 Stop 3 – Construction

The objectives of this stage related to needs and expectations are to realise renovation according to the plan agreed, assess quality during and after the renovation works (verified parties), provide tools (personal project dashboard) where both the homeowner and the professional can track the progress, and, when the renovation works are finished, provide a final report on the taken measures, quality evaluation and benefits.

It depends on the chosen track (a, b or c) what the **role** of HUB Alexander will be. In track A) the homeowner can get an offer from the WoonWijzerWinkel, and signs the contract. HUB Alexander can guide people what to look for, and people can come with questions to the HUB as a final check. In the B) track the role of HUB Alexander is larger. They can organise the quotation round, but also organise quality insurance within the group of home owners , or even organise external quality control. This depends on the size and complexity of the project and the knowledge the owners have themselves. The C) track has a 1 on 1 approach, so work execution is also be dealt with in the same way.

4.2.5 Stop 4 – In use

The objectives of this stage related to needs and expectations are to monitor the performance of the dwellings by showing the original dwelling's performance compared to the performance of the improved dwelling, to train about the home improvement and the (optional) installing of smart meters or behavioural changes, or offer the opportunity to share their opinion on the renovation works itself and the fully guided process of the hub.

This part of a renovation are often overlooked. People are relieved that everything is dealt with and go on with every day practice. However it is good to see if everything operates according to the specs that were given. But this is also a step that people are often not willing to pay for. It can be offered in an **additional service**, like a CO_2 meter for in the house, or an external dashboard to make the pv

energy that is collected visible. One of the available (extra) solution is the use of the Sensi monitoring system[8].

Figure 5: Sensi monitoring

On the other hand for the HUB valuable information can be gathered. As well about **work execution**, as on happiness of the owner with the choices they made. This provides necessary information to put to good use in steps 0 and 1.

At this moment this step is addressed, but not fully. In an ideal situation the HUB Alexander has a pool of contractors they work with. If that is the case, these contractors can be evaluated (by the HUB as well as by the home owners) and this information is the feedback for following projects. But such a pool does not exists.

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[8] The Sensi monitoring system was also used in Triple A Reno.

5 Follower cities

According to Objective 4 (To deliver real benefits to citizens and other stakeholders in two cities as a result of the Citizen Hubs operating locally), the objective is not only to provide the integrated renovation services to the specific homeowners groups identified in the two pilot cities (Rotterdam and Valencia) but also to demonstrate the potential of the Citizen Hub concept to all relevant stakeholders in other municipalities, to regain trust and interest in building renovations and to further expand the Citizen Hub business model.

So, in order to roll out the Citizen Hub concept on a wider scale (regional, national and European), the Citizen Hub models developed for Valencia (ES) and Rotterdamm (NL) will be one-on-one assessed with the two follower cities, Sant Cugat (ES) and Ljubljana (SI).

After defining the customer journey together with the cities of Valencia and Rotterdam and StH customer journey framework in D3.1, a meeting to discuss them was wet-up with follower cities Sant Cugat and Ljubljana to find out current initiatives and lessons learned. With this in mind, both cities receive the draft methodology for building their implementation strategy (whose definitive version can be found on Annex 1 - StH Document 6**Fout! Verwijzingsbron niet gevonden.**) and assess its applicability in their context.

Sant Cugat – ES

The objective is to test the replication in the same country for Spanish pilot in Valencia and follower city Sant Cugat. The aim is to analyse all the benefits of having the structure and services developed in national language and based on national circumstances, legislation, culture and habits.

There are many tools and local initiatives already available in Sant Cugat, which are especially relevant for the onboarding, design, and elaboration phases in the customer journey. Some of these tools and initiatives come from the municipality of Sant Cugat, others are made available by private companies. Currently, the main challenge is that all these available initiatives are not linked together. One of the institutions in place is the Oficina Local d'habitatge (OLH), a local housing office, which offers advice on aspects such as the housing stock market, renting houses, municipal housing developments. It also offers aid for access to sheltered housing and rehabilitation of built houses. However, the OLH does not work in the area of energy efficiency or home renovation.

Sant Cugat Municipality is assessing the methodology and feedback will be reported during WP4 and WP5 activities for pilot experiences and replication and exploitation activities.

Ljubljana – SI

The objective is to test the replication between EU countries where the Citizen Hub mapping methodology and results for the Dutch city of Rotterdam will be replicated for the City of Ljubljana in Slovenia. The aim is to validate the effectiveness of the replication process between the different EU countries.

The current situation in Ljubljana is that public buildings are being renovated, however the renovation awareness for private building owners is lacking. The current top-down approach made that a lot of information on the supply side and mapping of dwellings is already available. A bottom-up approach would allow to create more insight in the needs of the residents of Ljubljana and to create more awareness among private homeowners. Save the Homes could help with awareness campaigns. There is an energy office present in Ljubljana; Eco Fund, which is a Slovenian environmental public fund that promotes environmental investments. Residents can visit the office to get free advice.

The city of Ljubljana is assessing the methodology and feedback will be reported during WP4 and WP5 activities for pilot experiences and replication and exploitation activities

6 Conclusions

Form **D3.1** for the definition of a StH customer journey framework, an implementation strategy has been designed for each of the pilot cities based on a combined top-down bottom-up approach, where existing local needs have been defined as sub-stops, and applicable local tools and services have been matched within them. This has highlighted the existing gaps and therefore the need for implementation in the study areas.

There is plenty of research methodologies to approach the customer journey definition and have been plenty explored in task 3.1. Here the objective was to adapt those findings to the local context and design the implementation strategy based on the StH customer journey structure. For doing so, the knowledge and learnings form WP2 activities and its deliverables findings and conclusions are capital to validate stops and sub-stops, local needs and applicable tools, services, products, solutions, ordered and structured in the StH framework, to build a coherent and smooth local customer journey and detect the need for new developments. Therefore, the challenge is to fit the utterly heterogeneous actors and stakeholders' profiles and expectations, and existing, available, applicable services in place under a harmonized schema potentially replicable, or at least adaptable to any EU context. For this purpose, the StH customer journey framework has risen as a useful tools on top of which fit existing resources and map the gaps and needs for planning an implementation strategy.

In this context, the methodology here proposed in Annex 1 - StH Document 6 derives from both Valencia and Rotterdam experiments and aims at laying the foundations for the definition of a implementation strategy based on the **local mapping** analysis and the **StH customer journey framework**.

This methodology is to be tested in **WP4** demonstrating activities and **WP5** replication and exploitation activities.

Annex 1 - StH Document 6: Implementation strategy

This document will help your Municipality or Region define your local context implementation strategy in order to design a proper long-term smooth experience customer journey harmonized with the StH validated framework. It is structured as a series of tables to be filled, in a step-by-step process that will lead to the definition of your own services menu, existing supporting tools and new developments needs. This document is completed with the corresponding spreadsheet file and both are available on the project web site.

StH - Itinerary methodology – checklist

A. Introduction

First of all, keep in mind that this methodology aims to draft a structure and strategy for implementing the Citizen Hub concept in your context. This means you need to scout your **adaptation to the StH customer journey**, fill the gaps, **and design your services menu**.

For doing so, have at hand Table 2.- Save the Homes customer journey framework (D3.1) available in Section 3 (page - 6 -) of these Deliverable 3.2, where you will find, for each stage:

- Objectives and goals
- Risks
- Touchpoints

This checklist deals therefore with the mapping of suitable tools and mechanisms that can assist you with the implementation of each step of the customer journey model and help follow the decision-making process of the customer.

B.   The customer journey framework

Please check table below and just **mark the steps** you think you need to implement for delivering a complete service to your customers and split your answer **according to the profile to whom the service is addressed**.

You can add comments that help you define the functionalities or tools that you are looking for on each of them.

Stop 0 - ON-BOARDING	
AWARENESS	INTERACTION
demand	
supply	
staff	

Stop 1 - EVALUATION	
SELF EVALUATION	ASSISTED EVALUATION
demand	
supply	
staff	

Stop 2 - DESIGN & FORMALIZATION		
DESIGN	SELECTION	FORMALIZATION
demand		
supply		
staff		

Stop 3 - REALIZATION			
TRAINING	ASSESSMENT	MEDIATION	QUALITY ASSURANCE
demand			
supply			
staff			

Stop 4 - VALIDATION			
FEEDBACK	COMPARISON	MONITORING	CERTIFICATION
demand			
supply			
staff			

C.   Your customer Journey

Now we go stop by stop, taking into account each stop objectives and goals and risks to avoid (see Table 2), and trying to understand the definition of each functionality needed for each step as a touchpoint, since the transition from one step to the next is crucial. The points of **interaction** between the customer and the Citizen Hub are the so-called 'touchpoints. The touchpoints link directly to the experience of the customer in each step of the journey. Each step has its own drivers and barriers which show the reasons for the potential customer to continue or to quit the process.

On each the next tables, fill the **functionalities** you intend to provide on each step, and, if any, describe the **existing tool or mechanism** that you can use to deliver that functionality (in blue fonts), or describe the way you would like to provide the service, when you do not have an existing tool (in red fonts). Red functionalities are your service menu **gaps**, and you will need to further work on finding out a way to deliver that service, so to prevent customers to dropout the process.

	Stop 0 - ON-BOARDING			
	AWARENESS		INTERACTION	
demand				
supply				
staff				
	Functionalities	Tools	Functionalities	Tools
	To T3.6 & T4.7 Platform functionalities definition & implementation			

For the onboarding phase you will count on the tools _____
_____
_____
_____
_____
_____
_____ to help users go to the next step.

(To T4.7 Platform functionalities implementation)

At the other end, you need to find out how to overcome the lack of resources for _____
_____
_____
_____
_____
_____
_____ and avoid users to dropout the process.

(To T3.6 Platform functionalities definition)

Now for the next stop, remember, fill the **functionalities** you intend to provide on each step, and, if any, describe the **existing tool or mechanism** that you can use to deliver that functionality (in blue fonts), or describe the way you would like to provide the service, when you do not have an existing tool (in red fonts). Red functionalities are your service menu **gaps**, and you will need to further work on finding out a way to deliver that service, so to prevent customers to dropout the process.

Stop 1 - EVALUATION				
	AUTOEVALUATION		ASSISTED EVALUATION	
demand				
supply				
staff				
	Functionalities	Tools	Functionalities	Tools
	To T3.6 & T4.7 Platform functionalities definition & implementation			

For the evaluation phase you will count on the tools _____
_____
_____
_____
_____
_____
_____ to help users go to the next step.

(To T4.7 Platform functionalities implementation)

At the other end, you need to find out how to overcome the lack of resources for _____
_____
_____
_____
_____
_____
_____ and avoid users to dropout the process.

(To T3.6 Platform functionalities definition)

Same for the next step:

Stop 2 – DESIGN & FORMALIZATION					
DESIGN		SELECTION		FORMALIZATION	
demand					
supply					
staff					
Functionalities	Tools	Functionalities	Tools	Functionalities	Tools
To T3.6 & T4.7 Platform functionalities definition & implementation					

For the design and formalization phase you will count on the tools _____ _____ _____ _____ _____ to help users go to the next step.

(To T4.7 Platform functionalities implementation)

At the other end, you need to find out how to overcome the lack of resources for _____ _____ _____ _____ _____ and avoid users to dropout the process.

(To T3.6 Platform functionalities definition)

Same for the next step:

	Stop 3 - REALIZATION							
	TRAINING		ASSESSMENT		MEDIATION		QUALITY ASSURANCE	
demand								
supply								
staff								
	Functionalities	Tools	Functionalities	Tools	Functionalities	Tools	Functionalities	Tools
	To T3.6 & T4.7 Platform functionalities definition & implementation							

For the realization phase you will count on the tools _____
_____
_____
_____
_____ to help users go to the next step.

(To T4.7 Platform functionalities implementation)

At the other end, you need to find out how to overcome the lack of resources for _____
_____
_____
_____
_____ and avoid users to dropout the process.

(To T3.6 Platform functionalities definition)

And for the final step:

	Stop 4 - VALIDATION							
	FEEDBACK		COMPARISON		MONITORING		CERTIFICATION	
demand								
supply								
staff								
	Functionalities	Tools	Functionalities	Tools	Functionalities	Tools	Functionalities	Tools
	To T3.6 & T4.7 Platform functionalities definition & implementation							

For the validation phase you will count on the tools _____
_____
_____
_____
_____ to help users go to the next step.

(To T4.7 Platform functionalities implementation)

At the other end, you need to find out how to overcome the lack of resources for _____
_____
_____
_____
_____ and avoid users to dropout the process.

(To T3.6 Platform functionalities definition)