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1. Executive Summary

The purpose of this deliverable is to provide a guideline to assist interested parties, either public or private organizations, in setting up a citizen hub for home renovations based on the standards established by the Save the Homes (StH) project. The guideline is meant to give easy to follow recommendations and insights based on the experience of StH in the pilot cities of Valencia (Spain) and Rotterdam (the Netherlands). This way, the different socio-economic contexts and regulatory frameworks entailed in each pilot city shall serve for the sake of comparison in the process of replicating the project elsewhere.

First, the concept of the Citizen Hub as deployed in the StH project will be introduced, also its fundamental character for the rollout of the StH project will be further elaborated. Next, a thorough assessment of the implementation work plan will be carried out including a market analysis, the business model definition, and the specifications of the citizen hub and its services. The guarantee of the work quality (through KPIs) and the upscaling methodology will be handled in specific sections in this guideline as well, since these are fundamental aspects for the replication of a self-sustaining citizen hub concept.

This guideline includes an insight into the implementation of the StH project in the pilot cities to serve as a comparative tool when adapting the citizen hub framework to different city cases. One major aspect is the different approach adopted by the hubs in each case to achieve the same customer journey: whilst for Valencia a top-down strategy has been carried out, a bottom-up approach was applied to the Rotterdam case. All considerations will be presented in the final recommendation section, entailing best practices that should be taken into consideration and possible risks and barriers that should be avoided for a successful replication.

2. Introduction

Investments in home renovations are deeply coupled with the environment, economy and people's quality of life. Nonetheless, Europe has been struggling with an aging housing stock with only a small share of buildings achieving upper classification in energy performance certificates through renovation. Apart from this energy-efficiency deficit which leads to higher energy bills, the conditions of a house are deeply related to the health of its dwellers. Therefore, guaranteeing well-ventilated, as well as insulated and livable homes, should be of utmost importance in the European Union for the coming years. Save the Homes aims to create innovative "integrated home renovation services" by introducing a One-Stop-Shop (OSS) based model, the Citizen Hub. The hub should cover the homeowner´s full customer journey and be self-sustaining to cater for the renovation demand and still be market competitive.

The objectives of the StH project are to provide a faster and more affordable renovation process for homeowners by designing a citizen-oriented framework backed up by the municipalities where the project will be implemented. This will be enabled through the introduction of an attractive and transparent customer journey to speed up the decision-making process involved in every renovation project. Each of the steps of the customer journey shall offer expertise and guidance at the right time to smoothen the entire process. This process includes clear information about energy performance, well-being impacts, IEQ, etc. Furthermore, StH aims at offering easy access to affordable financing of deep renovations by connecting capital markets with prospective clients and matching the common expectations and requirements. Lastly, StH will deliver real benefits to citizens and the stakeholders involved thus fostering the promotion of the concept based on actual evidence-based feedback provided by homeowners. That way, the project can be scaled up by mobilizing interested groups of stakeholders and by implementing similar procedures elsewhere in Europe. So far, the project has been implemented in two pilot cities in Europe: Valencia in Spain and Rotterdam in the Netherlands. But to cater for the rising renovation demands and the urgency of matter, a replication of the project would be highly advantageous. This is dealt with in the StH project by using follower cities, that track the progress of Valencia and Rotterdam, as well as by the participation of umbrella organizations ICLEI an UIPI. That way replication of the findings can more easily be accessed in the future.

3. Citizen Hub model implementation guideline

3.1. Citizen Hub concept

With the main aim of stimulating home renovation demand and fostering the renovation pace across Europe, StH introduces the Citizen Hub. The concept behind it is to serve as a one-stop-shop entailing all the services and assistance needed for clients interested in a home renovation project. The Citizen Hub shall be a physical venue located in a central area with easy access to prospective clients to walk in and solve their renovation-related inquiries, as well as two local digital platforms, one per pilot. These platforms will be upgraded with the Citizen Hub functionality offering the integrated home renovation services online. Homeowners, after orientating themselves and having gathered enough information, can directly arrange appointments with experts, either on-site or online, to get personalized advice on the best suiting renovation package, all in a confidential way. Follow-up meetings are also set to be organized between the hub and homeowners to ensure the expectations from both sides are being properly met. By the end of this process, the client must be aware of what to expect as outcome when pursuing the journey proposed by the StH project.

Regardless of the pilot city assessed, the Citizen Hub shall facilitate renovation projects by providing services such as technical assessment of the to-be-carried project, support in comparing the contractual offer, access to tailored and affordable financing mechanisms and quality assurance. The services provided can charge an advice fee, which shall only be charged after the decision to pursue the journey has been carefully made by the homeowner. Furthermore, the Citizen Hub will be responsible for the quality assurance and verification of all works being carried out. All in all, the concept of establishing a hub is to assess and tackle persistent barriers faced by citizens to carry out desired and much needed renovation projects. Therefore, a customer journey framework was developed to assess the decision-making process of clients and provide feedback to the hub itself to enhance its functionality. Nonetheless, the customer journey will be adapted and shaped to the socio-economic demands of each pilot city it shall be implemented. The customer journey includes five main steps of action: onboarding, design, elaboration, construction and in-use.
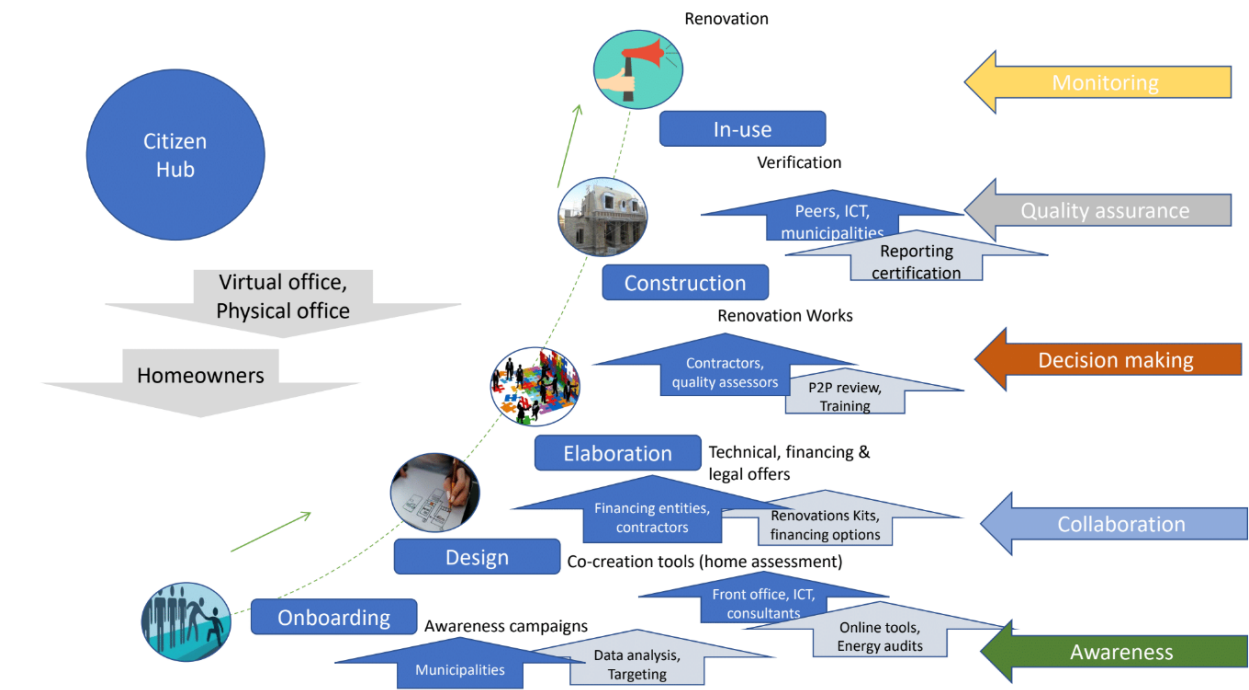
Figure 1: The five-steps Customer Journey Process

3.2. Citizen Hub implementation work plan

The sections below describe the necessary steps for the implementation of a Citizen Hub based on the framework developed in the StH project. The implementation work plan shall serve as a supportive guideline entailing important measures and specificities along the process. The sections will not only address the relevance of each step of a citizen hub execution process, but it will also provide general guidance regarding how these steps must be carried out. The implementation work plan describes nine main tasks and correspondent subtasks. The final aim of this chapter is to solve the most common doubts for prospective stakeholders. In case a further analysis and understanding of each of the following tasks wants to be achieved, we suggest readers to check the following reports (deliverables) of the Save the Home project in which each of them are explained in more detail:

	Phases of the implementation work plan	Related Save the Homes Report (Deliverables)
a	Market Analysis	D2.1 - Save the Homes demand and supply mapping
b	Business model definition	D3.3 - Citizen Hub business model for the two pilots
c	Set-up and physical office definition	D3.2 - Strategy and structure to implement the Citizen Hub concept for the two pilots
d		D2.1 - Save the Homes demand and supply mapping

	Citizen Hub's ecosystem - contractor training and verification	D2.3 - Citizen hub protocol for supply side community building and network creation
e	Services and process flow	D3.1 - Home renovation customer journey methodology
		D2.5 - Suitable renovation packages and supporting services for two pilots
f	IT tools	D3.7 - Definition of the Local Citizen Hub Platform functionalities for the two pilots and its integration within existing platforms
g	HR and staffing guide	D3.6 - Staff training programme for the two pilots
h	Communication, sales and marketing tools	D2.2 - Save the Homes guideline for long-term citizen engagement
		D4.1 - Documented engagement recruitment campaigns for the two pilots
i	KPIs and monitoring system	D2.4 - Mapped suitable protocols and methods for quality control of the renovation works and for buildings performance monitoring
		D3.8 - Data monitoring plan for the two pilots
		D4.2 - Citizen Hub model agreement including quality control system for the business model elements and monitoring protocols for evaluation of partners' activities
		D4.5 - Action plan, risk assessment and quality assurance of the renovation activities

a. Market Analysis – demand assessment

The first task of the work plan implementation corresponds to the market and demand analysis. For this analysis, it is key to focus on data gathering, market survey, market description, demand forecasting, and market planning. For the Citizen Hub, the market analysis focuses on the definition of the building stock characteristics and needs for specific interventions, whereas the demand analysis calculates the aggregate demand for a certain intervention or service. This needs a structural way to deal with ordering the building stock. A market and demand assessment enable the Citizen Hub to be designed to fit at best the market demands.

This process aims to connect the project with the needs of each city and its main target. Since the reality of each city is different, there is a need to have different approaches to develop a coherent model. Therefore, a good knowledge of the state of the buildings and a good market analysis, seeking to detect, among other things, socio-demographic information of the residents can guarantee a greater probability of success. It is essential to have a good understanding of the target audience that will be addressed to design a good communication strategy and allow higher engagement. To reach this and create an appropriate and interesting message for the customer's needs, their priorities must be evaluated. That is why the strategies in Rotterdam and Valencia are different, as the main characteristics of the buildings, the administrative situation and the socio-demographic characteristics of the homeowners are also very different.

The market analysis intends to achieve two specific tasks: i) define and prioritize the zones that will be targeted inside the city, and ii) map and contact the main local stakeholders that are

involved in the project and that can have an impact on it. To fulfill these two tasks the following subtasks should be completed on each of them. For the first task, the sub actions to execute are: i) Socioeconomic and socio-demographic study ii) Identification of the building stock iii) Inspection visit to target areas. For the second task, the stakeholder mapping, the sub actions to execute are: i) Identification of main stakeholders ii) Social actors iii) Professional associations.

Zones definition

- Study and define buildings' technical status
- Study socio-economic conditions of inhabitants
- Site-visits

Stakeholders analysis

- Stakeholder mapping
- Stakeholder matrix analysis
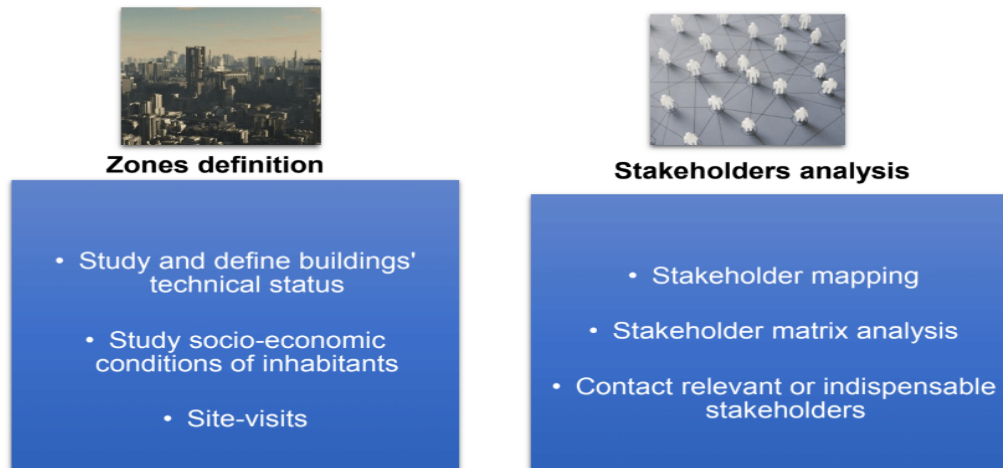- Contact relevant or indispensable stakeholders

Figure 2: Market Analysis main tasks as first step of the Citizen Hub Implementation Work Plan

The main challenges generally encountered during this first stage of implementation regard i) the collection and access to data, especially up to date data and relevant information. Fragmented or missing data negatively affect the preciseness and effectiveness of this stage analysis and thus the design of the Citizen Hub itself, and ii) for Citizen Hubs that are set up by the public sector, one major barrier consists of the Citizen Hub's lack of integration into the framework of local strategies. To ensure and enhance the Citizen Hub impact, it needs to be well-integrated into the wider strategic local context.

b. Business model definition

The second task for the work plan implementation corresponds to the business model definition, which refers to the Citizen Hub's strategy for achieving its objectives. The first sub-task consists of defining the Citizen Hub's business model canvas, building upon the co-designing of the Canvas Business Model with partners and relevant stakeholders, and the successive Model Validation. The Canvas Business Model is a strategic management tool that enables the Project Manager to visualize and evaluate the project's concept. The canvas should summarize the strategic works to develop the business product. The business case should entail a solid and integral value proposition that is able to convince prospective customers and attend to their specific needs along the whole renovation project. The involved partners should therefore revise their business plans on a regular basis to meet the demands of the market and to stay updated.

The second sub-task consists of the services definition for the OSS. This task requires developing technical, financial and administrative support services for the user as part of the defined customer journey. Specifically, at this stage it is specified products and services that the Citizen Hub intends to offer to its clients, its purpose and audience, and the estimated costs involved in the project. Given the current pilot phase of StH, there are still many challenges to be overcome before the project is upscaled. Some of the challenges involve guaranteeing a viable economic sustainability for the long term. One of the topics that need to be dealt with is to what extent the functionality of the Hub will go. Where do people onboard and when will they leave they leave the functionality of the Hub (and with what result)

The third task of the business model definition addresses the economic model of income and expenditure as part of the financial model set-up of the office. For the Valencian pilot city for instance, the recently launched Next Generation EU Funds will be implemented to the business model to better target the project development. The subsidies entailed in the funds are supposed to trigger the demand, stimulate market actors and implement a set of networks of OSSs across a target region or location. For the Rotterdam pilot case, which counts with Alex Energie as the spearhead of the project, the Hub will leverage on strategic partnerships in the short term to cater for the HOs demands in the best way possible. Additionally, the business model must address the adaptations needed for the transition from a volunteer basis to a professionalized one, which is fundamental for the upscaling of the StH project.
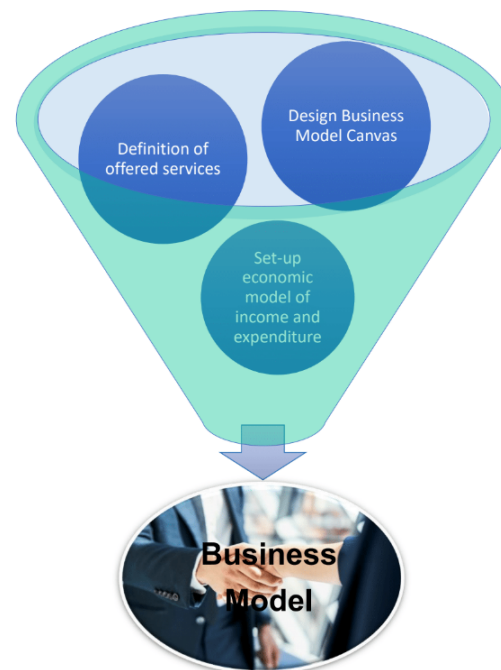

Figure 3: Components to set up a Business Model as second step of the Citizen Hub Implementation Work Plan

During the business model definition phase, the main challenge regards the definition of a solid revenue model that can guarantee the economic sustainability of the Citizen Hub on the long term. Being a key aspect of the Citizen Hub design and set-up, long-term financial feasibility needs to be contemplated, exploring the different options of monetization available and best suited for each Citizen Hub's needs.

c. Set-up and physical office definition

The third task of the work plan implementation consists of set-up and definition of the physical office. This step has to be aligned with the local proposal and its reality. Thus, to start, the first tasks regard the proposal of a location for the office, as well as a preliminary visit site. Once the location has been chosen, a budget estimation needs to be elaborated to determine the viability of having this office or not .

It is of great importance the decision as to where the office should be located. It should preferably be positioned in a strategic location that will increase the likelihood of success and draw more attention from residents. The location of the office becomes vital to attract the target audience and to ensure the right engagement for possible success. The location of the office will therefore be different in Rotterdam and Valencia. The location will have to be decided according to the social reality of each city and of those citizens who constitute our target. The objective is that the location will help to bring StH closer to the citizens and to spread the message of StH. Hence why selecting a site based on the results of the market demand assessment is critical for the implementation of StH. Setting up an office entails the procurement of several goods, including industry-specific equipment, furniture, tools, and vehicles suited for the specific project.

The objective of the Set-Up and physical office definition must be an optimal development of the activity in the office to achieve the objectives proposed in the project. For an effective outcome, pre-inspection work must be carried out and a suitability budget prepared to run the necessary adjustments of the office space. Both tasks are needed to set-up the physical office and are followed by contracting of all necessary services such as: Wi-Fi, phone network, water, electricity, etc.
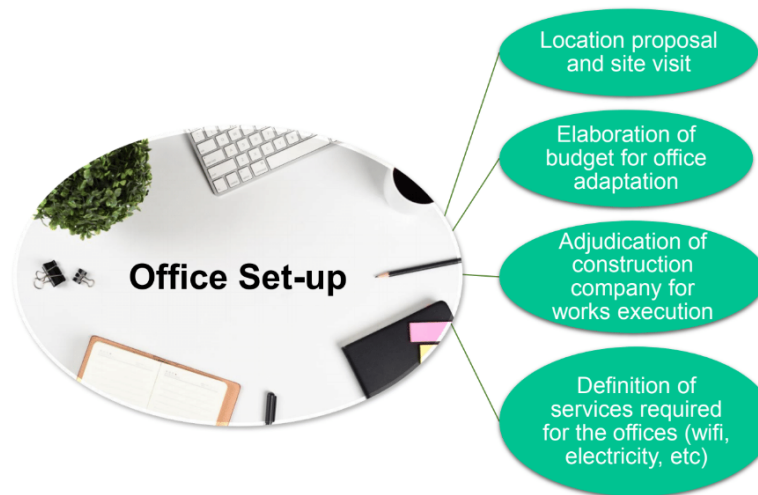
Figure 4: The four tasks for a successful office set-up

When existing local offices are already in place, it can be challenging to define the most effective strategy to follow for the Citizen Hub set up. In case of using the existing local offices for the Citizen Hub, the main challenge consists of differentiating the IHRS form other existing services.

d. Citizen Hub's ecosystem – contractor training and verification

The fourth task is about contractors training and verification in the Citizen Hub's ecosystem. This phase must be carried out in two successive stages: the first one focuses on the definition of the final contractors, the second one focuses on liaising and incorporating the selected contractors and professionals to the program ecosystem, values, and goals. To define the pool of contractors, a three-step method is recommended: i) analysis of the existing list of contractors, ii) definition of the eligibility criteria, and iii) elaboration of an excel for the eligibility matrices.

Contractor training and verification is an important part of the continuing management of contractor firms, contractor workers, and subcontractors involved in the renovation works. It entails several aspects such as verifying compliance, safety history, performance and capabilities, procedures and policies, critical engagement, safety documents, among others. But most importantly, having a pool of well-qualified contractors with expertise on energy efficiency renovations (EE renovations) is fundamental as these projects demand further know-how compared to common home renovations. The objective is to increase the number of skilled professionals along the whole construction value chain, involving designers, architects, engineers, building managers, technicians, installers, and many other professionals involved in the EE renovation value chain.

Regarding StH, the project has been facing difficulties to form a pool of qualified contractors in both pilot cities due to several reasons. Some of the skills that prospective contractors must have include knowledge on new EE materials and products entering the market with distinct physical

qualities compared to the ordinary products available. Equally important is the integration of renewable energy sources, systems, and processes to the renovated building. The use of building information modeling (BIM), data management and IoT will be common features that contractors will have to be able to integrate to renovation projects targeting energy efficiency. Technology-enhanced learning as well as digitalization will play a major importance in the way that buildings are designed, constructed, and maintained.

In this sense, the coordination and integration of contractors and hired professionals into the program is a key aspect for the OSS success. The Citizen Hub concept aims at integrating these sets of skills into its value proposition, therefore fulfilling the mission of promoting successful EE home renovations by recommending fully capacitated contractors to successfully accomplish all needs involved in the renovation projects.
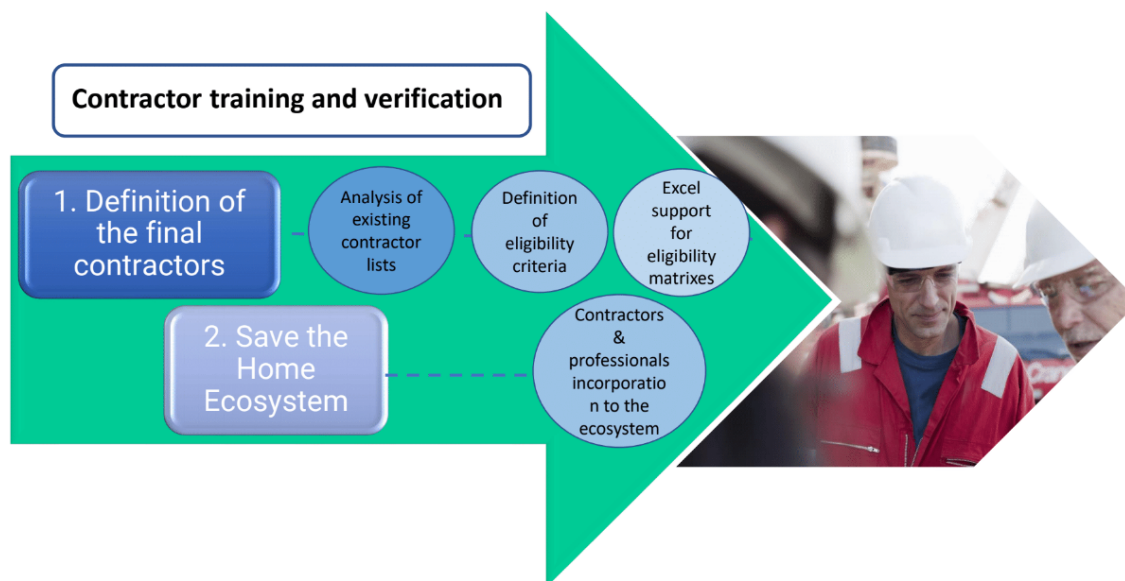
Figure 5: Contractor training and verification tasks

For public-runned Citizen Hubs, the main challenge experienced during this stage consist of creating useful lists of qualified professionals, while ensuring the quality of service. On the other hand, a key aspect to address at this stage regards the involvement of SMEs. For different reasons, SMEs usually struggle to be integrated into the Citizen Hub ecosystem, nonetheless their inclusion is advisable and can be highly beneficial the Citizen Hub's offered services.

It is worth mentioning the difficulty of standardizing the training of the different professionals, given the wide range of training available, which makes it difficult to integrate them into a "comparable" list of professionals. This could justify the basic training content available in the digital "office".

However the most important reason that a pool of contractors cannot be formed is the high demand in the market (in the Netherlands). At this moment the lack of labor is so high, that

contractors can afford te be picky. As a consequence they are less interested in a job for one Home Owner, when they can perform a job for larger clients, like housing associations. This we are trying to solve by bundling individual household into a collective. This collective (ranging from 10-25 households) organized by the Hub, creates a position for themselves so they can compete with other larger clients, hence become more attractive for contractors. In an ideal world these contractors will form a pool, but for now we are glad contractors even consider the job.

On the same level that the availability of labor is a key activity of the OSS success, it now is the most important barrier. We are able to communicate and approach people with opportunities to renovate their home. But we cannot guarantee the following step, execution.

e. Services and process flow

The fifth task for the work plan implementation regards the core of the OSS, dealing with the definition of the offered services and the expected process flow. This task involves a significant amount of work and coordination, and it can be summarized in four main topics of action: i) elaboration of the customer journey, ii) definition of the offered technical assistance service, iii) the definition of the financing service, and iv) demarcation of available grants and subsidies.

The customer journey defines the entire service offered to the customer by the Citizen Hub during the rehabilitation process. In this sense, it frames the citizen's interaction with the OSS and other related actors such as contractors. The customer journey is a process that has a beginning and an end, starting with the first iteration of the journey and finalizing with the validation of a definitive version. Part of the customer journey is the definition of financing services, including research of criteria for available grants and subsidies. In the final version, the definition of the end-to-end process of the grants and subsidies service is established.

As a successive task, the technical assistance definition deals with key points, such as: building book, basic project, executive project, and support throughout the process of hiring professionals. The technical assistance culminates with the construction monitoring.

The major purpose of this implementation step is to guarantee that the processes and services inside the citizen hub are correctly mapped and that the process flow is appropriately planned. This process flow should provide the staff in charge of managing these citizen hubs with a good outline of the many stages that must be completed, as well as all the possible outcomes for each step. Finally, the process flow should serve as a tool for making judgments and determining what actions to take in response to various consumer decisions. In this regard, the decision-making process of homeowners should be considered since it is not the same for single-family homes as it is for multi-family homes.
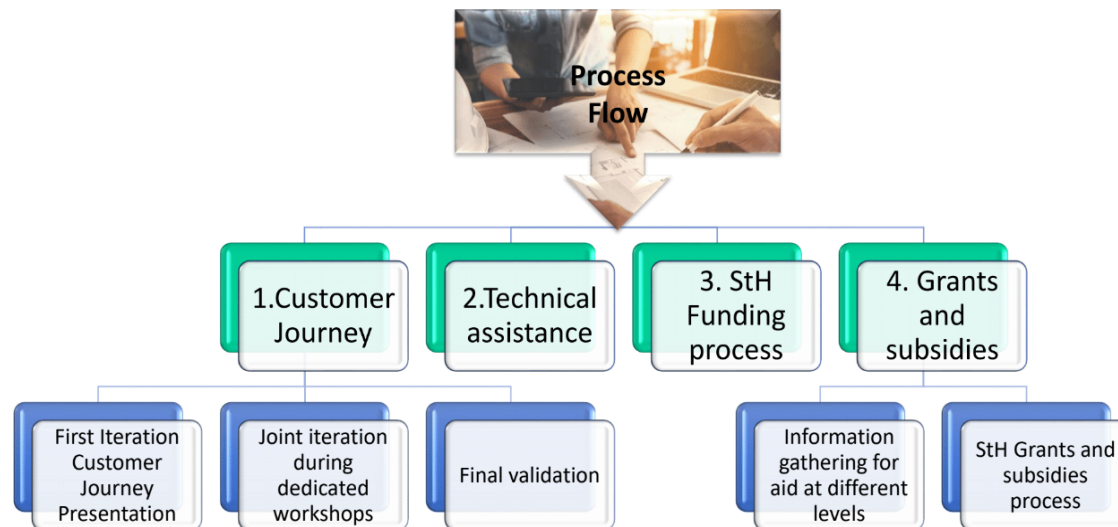
Figure 6: Services and process flow

Addressing key and complex aspects of the OSS design and set-up, this work implementation phase needs to be addressed expecting possible unforeseen challenges, delays, and other kind of issues. At this stage it is important to expect the unexpected to happen and handle such unexpected circumstances with prompt response making the necessary adjustments and iterating the operation model to achieve the expected results.

f. IT tools

The next task consists of setting-up IT tools that serve the Citizen Hub scope, including the "digital office", i.e., the on-line tools integrated in a digital platform. This step includes reviewing existing local tools and possible integrations with external tools, developing and implementing them adapted to the local context, as well as training of the personnel in charge of using the tool. These tools must be integrated into the OSS so that staff can manage each file in the building in an organized and efficient manner. The purpose of these tools is to facilitate the tasks of the OSS staff, which is why they must also be useful and easy to use for citizens or end customers. One of its functionalities could also be to allow the detection of any anomalies or delays. These IT tools have a preliminary function as a CRM system. It could even have a user interface where citizens/customers can consult their files. Nowadays IT tools are necessary in any project to implement the program objectives. Furthermore, the IT tools include the elaboration of the Aid Calculator, beginning with a generation of a database with the existing aids.

Next to the CRM function there are also IT solutions that can perform (part of) the information function. As an example the Ikwoon tool can show people, based on their building characteristics what kind of solutions might be possible for them. These solutions inform them about the quality

that can be reached, the impact on their home and CO2 reduction as well as the costs. Based on this advice they can contact the Hub for further steps.
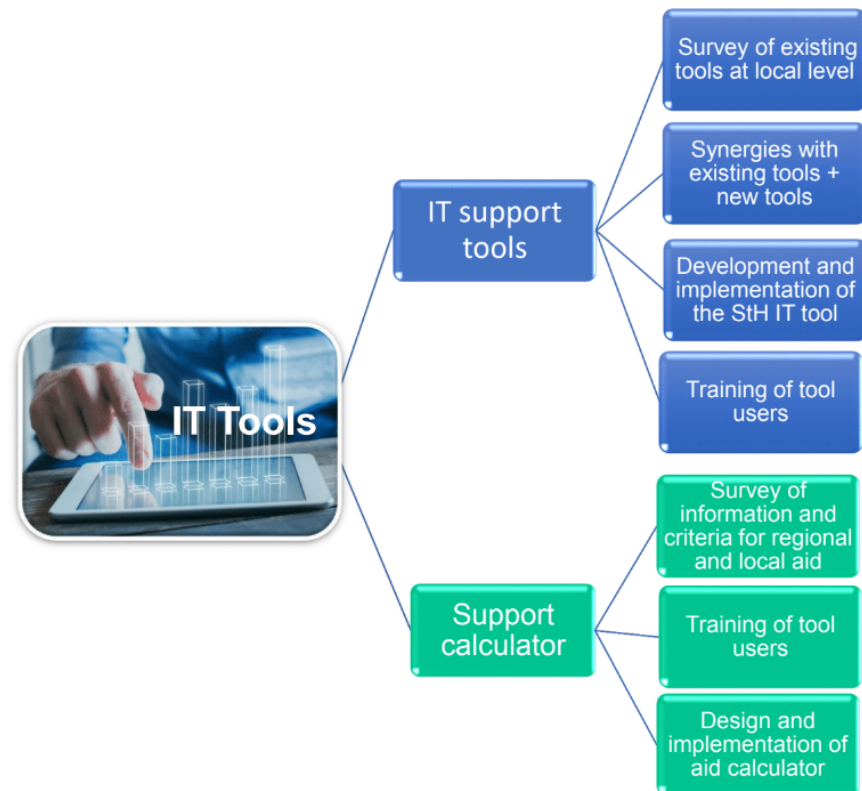
Figure 7: IT Toll set-up in a step-by-step design process

For the set-up of the IT tools to be used in the OSS, there are two main aspects to take into consideration, which are often difficult to be addressed in this phase. The first challenge concerns the integration of the existing IT tools with new ones. The adaptation of existing IT tools and the adoption of new ones may result difficult at first. On the other hand, the second most common challenge regards the selection and adoption of IT tools that can truly facilitate and improve the quality and efficiency of the services provided in the Citizen Hub.

g. HR and staffing guide

The ability of the business to source new personnel, maintain the organization operational, and improve the quality of the human capital employed is key. The seventh task of the work plan implementation consists in the hiring and training of the personnel for the OSS. When choosing the staff that will work on the OSS, it is important to consider their profile and match them with the needs of the project. For this reason, it is key to start defining the most adequate profiles of professionals for the OSS.

After the selection has been made and the staff has been hired, they need to be trained to meet the specific objectives of the Citizen Hub. Adequate technical knowledge is necessary to be able to communicate the different packages and solutions offered at the OSS in a clear way for the customer. This training should focus on how to convey the message to the Target Audience, how to identify their needs and offer the most suited options according to the customer needs.

Figure 8: HR and staffing guide steps

As illustrated in this chapter, recruiting and training of the OSS personnel are key aspects for the success of the Citizen Hub. In this phase, three major elements need to be carefully considered and can often result challenging to address. Firstly, when training the new personnel, it is important to make sure that the staff is fully aware of their role and responsibilities, as well as understanding entirely the Citizen Hub mission. Secondly, ensure to plan resources to sustain the personnel salary is a key aspect to carry out in this phase. Lastly, preexisting relations with professional should be considered so they can be leveraged inside the Citizen Hub to build new synergies.

h. Communication, sales, and marketing tools

The eighth task for implementation is the communication, sales, and marketing tools and aims to elaborate a citizen-based communication strategy. It is divided into two sub-tasks, i) Communication Strategy and ii) Strategic Dissemination Planning. The first task is divided into four activities: i) compilation of dissemination protocols at local level, ii) detailed definition of existing available communication channels and associated resources, iii) definition of B2B communication and marketing strategy, iv) elaboration of material.

The marketing, communication and sales tools are used to promote the project as well as to communicate and disseminate the project's information to the stakeholders and the public. The marketing strategy also aims to convey the importance of sustainability and to achieve the European Green Deal goals through EU funded projects such as Save the Homes. It's important to show the relevance of this project for the public and how it can improve their daily life. The

communication and marketing tools can be divided in online and offline channels. The online ones consist of online tools such as the webpage, social media channels or other online channels suitable for the project objectives and its audience. Offline channels include face to face meetings, local media, informative brochures, among others.

For StH it is essential to create a message for the homeowners who are our target audience as they have the power to decide on the home renovation. Which implies that it is critical to build strong communication campaigns capable of adequately engage the clients. You may look at studies that have been done where it is described how homeowners make decisions and what genuinely motivates their decision. The message for homeowners must be carefully structured in order to attract their attention, engage them, and get them to visit the citizen center or online resources, if available. In Valencia, for example, there are "*Renoveu"* and *"red Xaloc".* Those systems facilitate decision making for homeowners and help them to know what steps to take next. It is key that for renovation to take place, there must be a system to assist citizens, mainly to help them to initiate a sustainable renovation of their homes. Whether it is programs that indicate how they can do it, what packages are offered to them or the benefits of doing it, among others. Therefore, OSSs are essential for this to happen according to local needs.

It is necessary to consider that citizens have to be approached depending on their social and economic situation, hence Valencia's and Rotterdam's city cases differ on their approach in order to engage with their local homeowners in the best way possible. It is important to mention the impact of word of mouth among the locals and the importance of being able to obtain a "good example of a success story" to convince other neighbors to start their own renovations. It should be borne in mind that to engage with the premises and implement the project in different cities, distinct models suitable for each city will have to be followed. To achieve this, the advantages, and risks of the project in both Valencia and Rotterdam will have to be considered, as well as its impact on the local population.

Figure 9: Communication and Marketing steps

The main challenges related to developing communication and dissemination strategies regard: i) how to create awareness and effectively inform the citizens and homeowners about the Citizen Hubs, energy efficiency renovations and their benefits; and ii) ensure that the language used for communication is clear and understandable, but more important than this that clearly connects with users' needs, enabling to approach a wide range of audience and reach as many people as possible.

i. KPIs and monitoring system

The ninth task consists of developing the KPIs and monitoring system, for which the main task of defining the KPIs and the following sub-tasks are developed. Specific KPIs should be defined for each of the following points: i) economic KPIs, ii) environmental KPIs, iii) social KPIs, and iv) performance monitoring KPIs.

The KPI Monitoring System (KPI-Systems) in document and output management must be closely aligned to strategic project goals in order to be effective in controlling customer experience. The KPI Monitoring System should include details on the precise aspects of the citizen hub deployment, from the success rates of the project implementation, the satisfaction rate of the customers or homeowners to the changes that have been necessary during the implementation of the project. This monitoring and control system should consider all those indicators necessary for the completion of the project. As well as its social and economic success and possible future replication.

Key rates to monitor may include:

- Engagement with society or Target Audience, i.e., the reception of the message, fluctuation in the number of interested parties, interaction on social networks and on-site events.

- A follow-up of bureaucratic difficulties encountered.

- The relationship with private and third sector entities and their role in the project. From a financial point of view to key actions to approach the local communities.
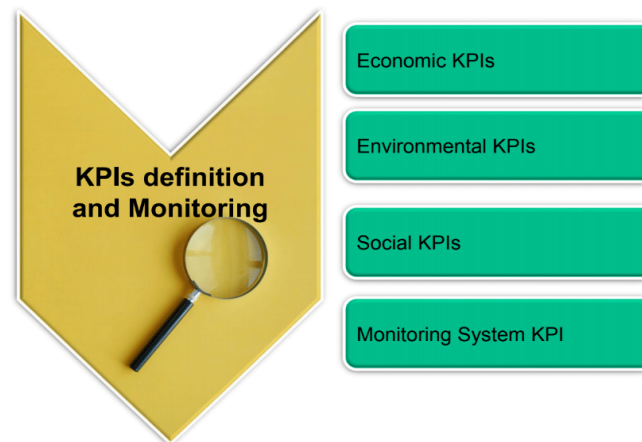
Figure 10: KPIs and monitoring system.

To set up KPI and monitory system, the main challenge that is usually encounter consist of difficulties on the collection of relevant data. This phase requires access to previous data and post-intervention data. Monitoring systems that facilitate this process are generally expensive and very technical to set up.

4. Save the Homes pilots Citizen Hubs implementation tasks

This chapter provides insight into the implementation of the Save the Homes project in the pilot cities of Valencia (Spain) and Rotterdam (the Netherlands). The specific features of each pilot city will be assessed thoroughly to evaluate the similarities and differences in deploying the StH project within different contexts. Even though the project proposes the same customer journey, the implementation of StH is carried out differently according to each pilot city's ecosystem. The project builds upon the specific climate targets set by the two cities and the pathways of achieving these.

4.1. Valencia Citizen Hub

a. Citizen Hub defined – top-down approach

The goal of the Save the Homes project is to stimulate home renovation rate in the city of Valencia, aiming at improving living standards and general wellbeing, in order to serve as an example and make use of its replicability in the Valencia region in general. For the homeowner, that means providing a frictionless access to an energy efficient, accessible and comfortable home whilst for contractors and financing entities, a candid project pipeline shall be achieved. To achieve this goal the concept of the Citizen Hub will be carried out. The one-stop-shop concept shall centralize the renovation services provided to homeowners and is fully endorsed by the municipality of Valencia and supported by the regional Government for the rest of the municipalities of the program. The Citizen Hub will facilitate the renovation processes, making it easier, faster and more affordable to homeowners to carry out renovation projects.

The Hub shall provide HOs with technical assistance, contractual offer, access to affordable and transparent financing, monitoring and verification of the work progress and quality assurance throughout the entire process. Given its strategy in raising general awareness and promoting the benefits of carrying out home renovations, the StH project in the pilot city of Valencia can be considered a top-down approach. The project focuses on generating high demand for renovations and engaging a large number of citizens through a 5-stop approach: 0- Onboarding, 1- Design, 2- Elaboration, 3- Construction, 4- In-use. "Onboarding" concerns establishing contact with citizens to create emotional response and raise interest in renovations, thus fostering the sector. "Design" entails the information and tools needed so that citizens can orientate themselves throughout the process, knowing where to find support if needed. This shall be achieved through personalized advice and tailored packages offered by the Citizen Hub. The "Elaboration" stage focuses on the decision-making process regarding financing options and the installers/ contractors involved. In the "Construction" phase, transparency and trust are the backbone of the Hub's activity. Verified partners will ensure the work quality and track the progress of the journey

for the HOs. Lastly, monitoring the performance of the delivered dwellings will be a task entailed in the "In-use" phase, seeking continuous improvements and feedback from the HOs. For the set up of the Citizen Hub, special attention to self-sustainability has been given. The potential revenue streams of the Hub were thoroughly assessed, and a financial projection for the following 3 years has been deployed aiming at reaching break-even the sooner possible.

Due to the singularities of the Valencian environment, the primary focus of the customer segment lies at the community of homeowners in multifamily buildings, as these represent the vast majority of the building stock dwellers in the municipality. Single-family homes shall remain a secondary focus of the StH project as a natural result of the dissemination of StH among the community of HOs. In order to provide citizens with the best possible service, the Valencian Citizen Hub will count with dedicated personnel, a physical operational office, key partnership and branding services. Furthermore, all-round supporting tools for the staff (e.g. customer service protocol, files management platform, and energy efficiency guides) and the customer (e.g. factsheets and leaflets, self-diagnosis tools, and comparative tables of the services) shall be integrated into the Hub. To foster reliance from the citizens and increase the impact of the Hub, online and offline channels will be deployed. The single most important offline channel is the Energy Office front-desk, serving as an informational point for citizens, but further channels include workshops and target events for the sake of project dissemination in municipal premises. The online channels on the other hand, shall enhance the outreach of the Hub through newsletters, social media interaction, paid advertising, webinars among others. All in all, the main goal of the online tools is to raise general awareness and educate citizens regarding the benefits of pursuing sustainable renovations in their dwellings.

b. Pending task

In Valencia's case raising awareness and getting people curious consists of the implementation of communication materials to create awareness as well as to take into account the available budget. A key point in this regard is how key figures in the city's reality such as "Administradores de Fincas" and "Agentes y gestores de la rehabilitación" should be involved in the awareness campaign.

As for organizing the financing and the renovation packages, settle the decision making and prepare for the construction some points need to be defined yet during the implementation phase. It's needed to define alternatives to suggest qualified constructors, although there are some legal restrictions that need to be taken into account. It's critical to define how the OSS can provide the right assistance to ensure citizens can access the available subsidies.

For those first steps to be successful, it is vital to recognize that remodeling work must be of high quality. It's important to communicate the quality of the project and its progress in a transparent way to homeowners in order to become a trustworthy project. To achieve this, it's necessary to ensure the OSS is involved in the execution of renovation works, design mediation strategy,

required training and its implementation and keep the neighbors informed via the Newsletter. Once those first steps are completed it is key to transmit and to educate homeowners about the improved building's state with the aim of adding value to buildings but also to leave a permanent positive footprint on society and to ensure that the shift towards a more sustainable Europe is continued.

4.2. Rotterdam Citizen Hub

a. Citizen Hub defined – bottom-up approach

In contrast to Valencia, the Rotterdam HUB will concentrate on single-family homes, as this is a large part of the area and in possession of individual home owners. In comparison to multi-family residents, the decision-making process for single-family owners is simpler and smoother in comparison to the case of Valencia. Unlike the top-down model applied in the latter, the bottom-up approach in Rotterdam does not have a pre-project data warehouse. Therefore specific StH data is collected to achieve a reliable and fast system.

A crucial player in the initiative is the energy community, Alex Energie. This approach is gaining hold in the Netherlands, where energy communities are acting in the energy transition through the local method that is the sense of belonging to a specific community. In Rotterdam, five energy communities are now operational. The OSS's overall customer segment in Rotterdam comprises all the residents of the city's Prins Alexander district. To be more explicit, the OSS's target audience is all single-family dwelling owners in the Prins Alexander district, with the special HUB's purpose of helping and guiding households who are experiencing energy poverty. It should also be noted that the majority of homeowners in this area are from the middle and lower classes. Alex Energy is becoming the local incarnation of the HUB inside Prins Alexander and has a real influence on the community's social network. One of Alex Energy's members launched an initiative from a local standpoint. Through avia lectures, raising awareness, and providing information to the neighborhood, a row of 16 houses is now interested in energy efficient remodeling. These people must now be guided farther along the customer journey toward knowledge, connection, preference, and conviction.

This project will be carried out following the StH's Customer Journey. This Journey is set on the assumption that individuals are eager to begin the adventure i.e. First, there must be a conscious process. The following steps consists in, Making connections with the citizen in order to induce an emotional reaction. 0. Onboarding, Raising awareness and getting people curious is key to engaging with them and getting some involved in the project. 1. Design, Providing residents with information and tools to help them get additional insights and orient themselves, ranging from a simplified version of their own home evaluation to financial online tools. Increasing the homeowner's understanding and offering them insight and trust in the process. 2. Elaboration, Consists of informing and advising the customer on how to prepare for actual work. As a result,

providing individuals with information and tools to help them obtain new insights and orient themselves is essential. The crucial step is to form a collective out of several individuals. Finally they must make individual choices on what to do in their home, but as part of a collective, so quotations can be asked for in the market. 3. Construction, It is critical to ensure that renovations are carried out in accordance with the agreed-upon plan. Provide tools that allow both the homeowner and the expert to monitor development. When the remodeling work is completed, a final report on the actions must be taken, quality evaluation, and benefits will be provided. It is critical that the pilot renovations have a high-quality rating in order to attract more homeowners and make word of mouth function. It allows local people to inform others of the advantages of the renovations. 4. In-use, Monitoring dwelling performance in order to learn and communicate better building state and sustainable way of life in the new interior settings. As a result, the performance of the original home must be compared to the performance of the modified dwelling. One of the objectives of these pilot tests is their future replication in other European cities. Therefore their operation, both advantages and disadvantages, are key to understanding their potential replication.

Online and offline methods will be employed to develop citizen dependence and improve the Hub's effect. The principal offline routes come from Alex Energie, the energy cooperative that will be responsible for operating the HUB. Their connection to the neighborhood enables them to achieve the Citizens Hub business model for both pilot cities as well as to use local channels such as pamphlets, letters, home visits, conversations with energy coaches and neighborhood meetings. Other local channels might be used like schools, sports communities and newspapers or local media distributed throughout the Prins Alexander neighborhood. This also emphasizes the necessity of the municipality's participation, since they might have the resources to contact and utilize the channels.

b. Pending task

In Rotterdam's case raising awareness and getting people curious consists of defining how the 16 dwellings' pilot should be used for the up-scaling process and to start implementing "awareness" activities as planned. As well as to evaluate the possibility to design training activities for specialized constructors and make sure, once they start attracting attention, they will be able to provide the offered services including renovation jobs. The next steps should be to focus on organizing the renovation and financing packages, settle the decision making, and prepare for all that is required to start the construction. It's substantial to monitor and collect data of the pilot execution and define the up-scale strategy - capacity.

Organizing the actual labor to execute the renovation is key. Only if enough contractors can be guaranteed, the following batch of people can be reached out to. The communication part can be organized as well as the reaching out to specific target groups. It is about the capacity in the

actual market making of collectives and the capacity available for labor that puts renovation on hold.

The current energy prices and economical downfall create an increase in interest for sustainability and renovation. That, combined with the possibility for a loan in the Rotterdam ETF should bring opportunities. But again, the lack of labor represents a major barrier for the Rotterdam's Citizen Hub.

For those first steps to be successful, it is vital to recognize that remodeling work must be of high quality. To become a trustworthy project, it is critical to convey the quality of the project and its development to homeowners in a transparent manner. To accomplish this, it is essential to be aware of the lack of qualified constructors to execute the renovation works in an up-scale scenario and the need to study the means and alternatives to overcome this issue as soon as possible.

Once those initial steps conclude, it is critical to communicate and educate residents about the improved building's condition to add value to properties while also leaving a permanent impact on society and ensuring that the move toward a more sustainable Europe is maintained. As a matter of fact, Rotterdam will need to develop a quality evaluation method to know the final outcomes.

The financial sustainability of the Citizen Hub in Rotterdam's case needs to be defined yet as well. Nevertheless, since the project will be led by Alex Energie different models and scenarios can be studied in this case to define different monetization strategies for Rotterdam's Citizen Hub.

5. Possible risks and barriers

Despite the thorough assessment of all key functions of the Citizen Hub prior to its deployment and the benchmarking analysis of successfully operating one-stop-shops, there are still several risks and barriers that both Citizen Hubs must overcome. For instance, a series of potential risks are involved in the 5 defined for the StH's Customer Journey and will be clarified in this section.

- Onboarding: In this stop, which targets the establishment of contact with prospective clients, the intrinsic risks involve the failure of the campaigns to reach out to the citizens, the impossibility to convert these awareness campaigns in real leads for the Citizen Hub, and not being able to achieve the necessary follow-up of the project.

- Design: In this stop, the ever-existing financial barriers might pose a risk of drop out from the project by prospective citizens. Special attention should be given to providing clear and effective response from the hub to the citizens' inquiries so as not to lose interest.

- Elaboration: The Elaboration stop tackles the organizational bureaucracy involved and sets ground for the subsequent construction phase. The risks involved include the high complexity of the project elaboration with minimal details to pay attention to, which might

lead to an overwhelmed client. In that case, the satisfaction of the homeowners must be of utmost importance to avoid any step-backs and clear out hesitations.

In the Rotterdam case, in this phase a collective must be formed, out of individuals. It is a risk that people do not want to participate in a collective trajectory. However, for an attractive offer a collective is necessary. On one side to be attractive to contractors, but also to make sure there is room for external advice and project management (that people cannot afford when they are operating alone). An individual course is still possible, but will cost more, and contractors will be less inclined to do the work, because it will cost them more time.

- Construction: The first risk is that there is no party willing to do the work. When it comes to this stop, the entire theory (and the resulting bureaucracy) involved in the previous stops will be put into practice. All phases of the project and the personnel involved have been clearly determined by now and the clients involved are expected to be in full consonance with the process. The potential risks involved in this phase concern the quality of the work delivered and delays that might occur throughout the realization of the renovation works. Unexpected factors are also a real feature that must be counted within every single step of the project. The quality of the renovation must match the set standards for wellbeing and energy savings that were agreed upon beforehand, which might not always be the case unfortunately. Since the StH project relies on word of mouth among others for its dissemination, bad publicity involving unsatisfied clients and unmet targets must be avoided at all costs.

- In-use: Special attention is given to monitoring the performance of the work carried out in the previous stops. But monitoring can be limited due to several factors such as lack of measurability of the improvements and uncertainty of the results (considering the relative lack of benchmarking and procedure standards in the sector existing so far). To enhance the quality of the services provided and to enable future enhancements, proper feedback from the clients is a fundamental aspect of the StH project in the Citizen Hubs. But there is always the issue if not sufficient feedback is provided, and the knowledge gap of the needed ameliorations remains.

All in all, there are several risks and barriers involved in the Citizen Hub but this can be efficiently tackled by strategic planning and foresight. The benefits involved with the home renovations and the unquestionable support of the municipality are proof of the project's feasibility. After overcoming these barriers, the Citizen Hub shall provide a bulk stimulation for home renovations either in the form of top-down (Valencia Case) or bottom-up (Rotterdam) approaches, thus involving several segments of the municipality and bringing benefits to the homeowners involved.

6. Conclusions and Recommendations

All in all, the aim of the StH project is to raise general awareness to the importance and feasibility of home renovations in the pilot cities involved and to strengthen the value-proposition offered by the Citizen Hubs. Due to the singularities of each pilot city, the project´s application might differ as seen above. The top-down and bottom-up approaches are some examples of the adaptation of StH to the socio-political environment of each city. Nonetheless, shortcomings and limitations remain, which is why recommendations could help scale up the positive results proposed by StH.

For the Valencia case, the implementation of communication material is fundamental for the project development, yet the budget constraints must be considered and managed. Key figures in the renovation process are the *"Administradores de fincas"* and *"Gestores Energéticos"*, therefore they should be involved in the awareness campaigns. The decision-making process shall be facilitated through tools such as the *"Adapta de Renoveu"* and campaigns to raise awareness to the best tools available in the market. It is also fundamental to stress the legal restrictions that are inherent to any project, so clarifying them with the homeowners will make the whole process more transparent. Further recommendations include setting up a fully-integrated monitoring process, designing a mediation service, and establishing the link between trusted contractors and citizens given the current legal restrictions of the procedure.

For the city case of Rotterdam, defining how the 16 dwellings pilot will function as a role model for upscaling of the project is a key recommendation. Also, implementing awareness activities and capacitating specialized constructors will bring advantages for the development of StH, as it will guarantee the best possible service to interested homeowners. The establishment of physical OSS requires a clear specification of its operation and staff duties. Furthermore, an up-scaling strategy is a key aspect to ensure future successful deployment of renovation works. The OSS must be sure it has overcome all limiting factors (such as lack of qualified personnel, data management constraints, quality assessment of the execution, etc.) before executing new projects. Alex Energies is the project partner currently in charge of overseeing the renovations carried out. In a planned upscaling, the role and participation of the partner must be defined beyond the current scope of the 16 dwellings pilot project. This will be crucial to the implementation of the physical Citizen Hub covering wide-scaled projects

Given that the above-mentioned factors will be carefully addressed throughout the development of the projects in each pilot city case, StH shall provide an integrative concept to tackle the barriers involving the financing of home renovations. There is also potential to upscale its value proposition beyond the currently operational Citizen Hubs and bring benefit to several homeowners across Europe.