

SMART
KALASATAMA

COOK

Recipes for agile pilots

BOOK





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Introduction

Introduction to agile piloting

The best way to speed up smart city development is by involving companies and residents in agile piloting programme, that unites all parties and creates a common understanding of its aims. The agile piloting programme was created to accelerate smart city development with the goal of forging a model to quickly achieve – in under six months – concrete examples of new smart services. Experimentation makes smart city development visible and palpable, something that citizens and stakeholders can take part in. Piloting offers a neutral space for shared development for all those involved, with their varied interests and operating cultures.

The agile piloting programme provides a model that can be used to get innovators (startups, SMEs, communities) to develop new smart solutions in an authentic environment with real users. The goal is to

maximize learning: get everyone involved, including public authorities and established companies in the field.

This cookbook shares the lessons and best practices learned from running the agile piloting programme in Smart Kalasatama. Forum Virium Helsinki's Smart Kalasatama programme developed the model and process for the agile piloting programme, which was used to speed up smart city development. In 2016–17 the Smart Kalasatama team ran 21 pilots with more than 30 companies and 1,000 residents. The format spread quickly to the rest of Helsinki and other Finnish cities. The format is developed continuously: currently in Kalasatama programmes related to education and wellbeing are running, and the cooperation and partnership model with larger companies is further explored.

Kalasatama: Smart City District to drive innovation

Smart City development is now the global mainstream as cities compete in smartness rankings. Smart city solutions mean urban digitalisation: how data and new technical solutions transform both the physical infrastructure and urban services. Though smart cities have been talked about for over 20 years, the process has proven slow for many reasons including the fact that tech providers' smart city solutions often don't meet cities' needs.

Recent waves of smart city development raise the issues of the need to re-organize urban development and innovation. The basic operating model is as follows: (tech) companies develop and propose new solutions, some of which are disruptive innovations. Public authorities, often the gatekeepers, may deny access to existing (or emerging) infrastructure. Some new solutions are piloted with academia and consumers, but to spread they would need to be integrated into everyday urban life.

NEW BUSINESS MODELS

Often, these integrations fail. Thus, smart city success stories are mainly about proprietary digital services or ecosystems owned by private players, not public ones. Companies say that their problems of doing business in the smart city field come down to three challenges: public regulation; public decision-making on integrating new digital services (especially at the city level); and the shift in consumer behaviour needed for the take-up of new business models.

As cities and public sector struggles with combatting climate change, air pollution, and rising public healthcare spending, all of which could be better addressed with transformative technology, better ways to jointly develop new solutions are needed.

A LABORATORY FOR NEW SOLUTIONS AND SERVICES

The Helsinki region is growing rapidly and expected to house an additional 490,000 people in the next 35 years. To boost new sustainable urban solutions, in 2013 Helsinki City Council decided to make one of the new neighbourhoods under construction, Kalasatama, a model of smart city development. A former harbour and industrial zone on the waterfront east of the city centre, will be home to 25,000 people, and the site of 10,000 jobs, by 2035. Currently, 3,000 people live there.

One of Kalasatama's core ambitions is to provide a laboratory for new solutions and services. The goal is a smart and sustainable urban environment, achieved through experimentation and co-creation.

In Smart Kalasatama, the entire neighbourhood works as an innovation platform, an Urban Lab where new solutions can be developed and tested.

The Living Lab environment includes the area's key infrastructure such as the Kalasatama school, the vacuum-based pipeline waste collection system, the energy network and the health and well-being centre. A co-creation space is located in the area, offering a site for meetings and networking.

INNOVATOR'S CLUB

An important part of the development platform is local networks such as the Smart Kalasatama Innovator's Club, which gathers the area's companies, organisations and residents, who take part in defining needs and as users in service experiments.

Smart Kalasatama is being developed flexibly in close cooperation with over 200 stakeholders, including residents, business, city officials and researchers. Companies operating in the

neighbourhood include developers, the local energy provider, IT companies, smart city startups and consultants. All sectors of the City of Helsinki are also involved, including city environment, social and healthcare, education and culture and leisure. All universities in the Helsinki region are research partners in the range of projects underway in the neighbourhood.

The Smart Kalasatama Programme 2014–2018 is financed by the EU Regional Development Fund. The City of Helsinki administers the programme, while Forum Virium Helsinki is responsible for coordination.

This living laboratory, bolstered by active communications, has made Kalasatama and Helsinki a unique, globally inspiring example of a smart neighbourhood co-created with residents.

Here, the vision is an easier everyday life that saves each resident at least an hour a day. This is why the Kalasatama project is all about user experience and encouraging resident participation to find ways for technology to improve urban services.

This is how Smart Kalasatama drives innovation:

- Experiment on smart services in real life and with real users
- Gather large and small companies, entrepreneurs, researchers, the public sector and citizens

- Start and conduct new projects and business development
- Run an agile startup piloting programme

Smart Kalasatama is a testing site for companies, startups, universities and many others to co-create with people, public organisations and other stakeholders. These multipurpose operations are co-ordinated as a Living Lab, a research and testing environment for companies, universities and others.

The Living Lab refers to:

- The neighbourhood and key sites for developing new services
- Networks formed by people and other stakeholders
- Open innovation platforms and environments

The Smart Kalasatama programme is running an ambitious platform with more than 30 innovative projects underway. It also hosts agile piloting programme, in which startups co-develop their smart solution prototypes with local residents. For example, several projects experimenting with smart waste management, smart grids for energy and mobility as a service (MaaS) have been conducted.



Justi Heiskanen



A brief history of Kalasatama district development

Kalasatama is a former harbour and industrial zone to the east of Helsinki city centre, in the Sörnäinen district.

Sörnäinen harbour was closed in 2008; Kalasatama was officially made into a separate Helsinki neighbourhood in 2012; at the same time the area started being developed into a residential one that also offered employment.

Home to 3,000 people, the area is growing. Completion of the entire, 175-hectare Kalasatama area is planned for 2035, when the estimated population will be 25,000, with 10,000 people working in the area. When completed, Kalasatama will have 1,200,000 m² of residential space and 400,000 m² office spaces.

Next to Kalasatama is Suvilahti and its cultural hub, host to a wide range of events and festivals. On the other side of a main road crossing the area is Teurastamo, a former abattoir, home to an urban culture community, where a dozen companies do business ranging from a book store to a pasta factory, a distillery and a coffee roastery.

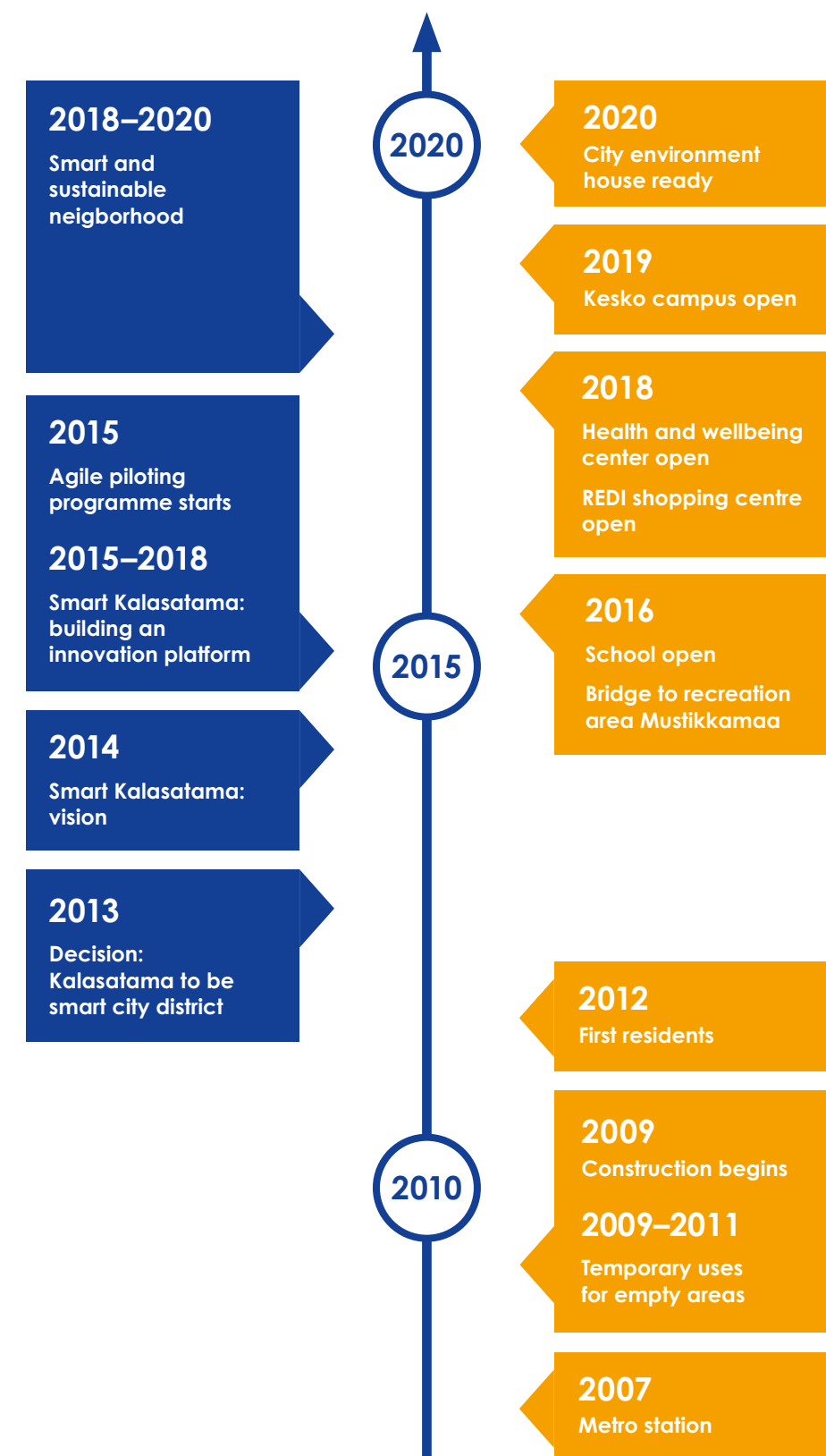
The area has been important in electricity generation. The Suvilahti power station started operating in 1909 and the Hanasaari power station is still

operational. Helsinki City Council decided in 2016 that the Hanasaari coal-fired power plant would be decommissioned by 2025, in line with the city's climate strategy. Helen, the city's energy company, along with ABB and Fingrid, are developing Kalasatama as a pilot site for smart energy solutions. With the contribution of the City of Helsinki, the neighbourhood will be the site of Finland's largest smart energy network, with a range of new services such as apartment-specific metering, advanced building automation and e-car charging. Indeed, Kalasatama can be considered an energy breakthrough, where new solutions for local energy generation and consumption will be found.

Kalasatama metro station opened in 2007 and a trip to Helsinki Central Railway Station takes 5 minutes. In future, the metro and Itäväylä dual carriageway will be covered by a wide green deck, serving as a yard area for the high-rise buildings being built here. In the 2020s, Kalasatama will be linked by a tram bridge to the surrounding areas of Hakaniemi and Kruunuvuorenranta. The robot bus line from Kalasatama to Pasila railway station, just a couple of kilometres away, is already on its way.

Smart Kalasatama

Area construction



Agile Pilots in Smart Kalasatama 2015–2017

Smart Kalasatama and its partners have procured, facilitated and been involved in running 20 pilots between 2015 and 2017. The pilots' primary goal was to speed up the development of smart services in a traditionally slow urban context. Another goal was to offer small operators the chance to test their solutions in an authentic environment. The companies had the possibility to make a name for themselves in the market, gather

genuine user feedback, and develop their services with the city and with residents.

The aim was to find and demonstrate innovative, practical solutions that were climate-positive, smart with resources and improved people's wellbeing. The pilots chosen for the programme were solutions for future challenges, and are closely linked to the City of Helsinki's goals.



GET TO KNOW THE PILOTS

Round I

Resource-wise solutions: 52 offers, 4 pilots

Tuup Oy, Smart everyday Mobility: smart mobility planning service for residents that strives to bring different transport services together in a way that is as easy as driving a car. Tuup experimented the concept of mobility as a service (MaaS) with end-users for the first time during their pilot in Kalasatama.

Kalasataman Palvelu and housing companies, smart trash bins: the pilot brought smart trash bins for Kalasatama's streets and yards, and utilized sensors to optimize waste logistics.

Yhteismaa (Nifty Neighbour and Mesenaatti.me), hyperlocal neighbourhood initiatives: Nifty Neighbor is a map- and location-based social web service. Nifty Neighbour explored how the service can help residents of Kalasatama to generate and test ideas to improve the neighbourhood and to enable initiatives by crowdfunding.

Link Design Oy, Foller: Reducing food waste by making use of new technologies and sharing food with neighbours.

Round II

Local services to boost wellbeing in cooperation with City of Helsinki Social Services and Health Care: 37 offers, 2 pilots

The Rehabilitation Foundation & Movendos, Fit Friends: the pilot developed a model for combining peer-instructed exercise with a digital service aimed at getting seniors more active in groups and everyday life, as well as to make them feel more involved.

Auntie Solutions, digital therapy: Auntie offers consumers digital therapy services with a low threshold. During the experiment, Auntie experimented on two new service concepts with users and service providers.

Helsinki Climate street, 17 tenders, 3 pilots
Co-facilitated with Smart Kalasatama:
 Sustainable Meal
 Resource Efficient Existing Buildings
 Zero Food Waste

Round III

Climate-positive pilots in cooperation with the Smart & Clean foundation: 34 offers, 5 pilots

Innogreen oy, City oasis – vertical garden solution, that handles greywater and brings butterflies and biodiversity to school yard.

Parkkisähkö Oy, Smart minigrid: the pilot combined EV charging and solar power to promote EV's for residents.

Witafi Oy, Rent-a-Park: a peer rental service for parking space that connects space providers with drivers. Parking space owners can rent their spaces to others when they don't need them.

Elwedo, solar energy service for residents and small companies: the pilot explored how the use of solar power could be optimized in residential apartments.

The Natural Step, Home carbon: the pilot combined real-time carbon footprint data, everyday choices and local sharing economy opportunities. Co-created with local households, the pilot produced climate-smart practices and incentives.

Round IV

Get moving! Programme run by Helsinki Social and Health service sector, facilitated by Smart Kalasatama: 18 offers, 2 pilots

Kalasatama Healthskills. Kisakallio and Coach 4Pro: Healthskills provided residents with tools for an active life through a digital coaching application and group meetings with a wellness mentor. Changes in motivation levels were monitored closely to see the effects of the application and group coaching.

Kalasatama On the Move, Laurea University of Applied Science: A collaboration model with Laurea University of applied science physiotherapy was introduced. The students gained practical experience with their pilot neighbourhood groups to encourage people to lead active lifestyles and test new solutions with digital training aids.

MORE PILOTING:

Kalasatama Wellbeing programme run during 2018 in partnership with Laurea University of Applied Sciences, Helsinki Social and Health service sector, SRV, Kesko and CGI Finland



What is agile piloting

Speed up urban development

Agile pilots are an effective way to speed up urban development. At their best, they can lay the foundation for wider development programmes. Experimenting is a way of learning quickly and in an iterative way. A city can get the most out of pilots by making them part of its strategic aims. For companies, they are a unique opportunity to test a product or service in real-life environment and get user feedback.

Agile pilots are called agile for a reason: they can be carried out quickly (from less than a month to half a year) and be used to bring an unfinished product or service to the right test environment and real users as early as possible, instead of testing a service that's been developed without user feedback until it is almost complete.

FOCUSING ON USERS

Unlike when testing a service at a late stage, a pilot should be expected to fail – at least in some ways. That's because the concepts are still at such an early phase that the whole point is to find precisely what works, what doesn't and why. Experimentation will also demonstrate whether the concept is interesting for users and help find the future direction. After several rounds of real-life trials and co-creation with users and other stakeholders

the idea is ready for larger scale pilots. Focusing on users and inclusive co-creation are at the heart of agile piloting.

The agile pilots should be linked to larger goals. What is the aim of the pilots and what do you want to learn from them? How are the pilots part of the city's strategy, the objectives set for the innovation platform, and other smart city goals?

LEARN AS MUCH AS POSSIBLE

The most efficient use of resources can be achieved, when agile pilots are bundled together to form a piloting programme. Activities that support piloting, such as facilitation, can be linked and scheduled together to support several pilots at the same time. During a piloting programme, pilots on the same theme can learn from one other, producing a range of synergy benefits.

Stakeholders and users are invited to co-design and co-create a new solution right from the start. Co-creation can be a part of conceptualising services, testing prototypes or developing new business models.

When agile pilots are being run, the aim is to learn as much as possible during the short period. The more fast experimentation sprints are done during a pilot, the faster the service is developed.

Key elements

Piloting programme: Way of carrying out several pilots with the same format. It includes several pilots which are run parallelly, as a piloting round. In a programme, each round is given a theme, for example energy saving, and several simultaneous but different pilots are used to find new solutions for this theme.

Piloting round: The thematic round of pilots within a piloting programme.

Innovation platform: An innovation platform (or “experimentation platform”, “living lab”) is a physical, digital or social environment where piloting happens. The organisation that runs the platform, coordinates the piloting rounds and offers support for those chosen to do the experiments. It facilitates the piloting programme and brings actors together

as a value-generating network. The pilots are typically linked to physical places or city infrastructure, such as a neighbourhood, car parks, information screens, cultural centre or school during the pilot.

Facilitation: Agile pilots demand intensive facilitation to succeed, so it's important to allocate enough resources to it when planning the programme.

The role of facilitation is to bring people together, quickly solve problems, demand decisions, search for the right contacts, simplify bureaucracy, see experimental synergies and the big picture, and share interesting topics about the pilot with the outside world. In the context of agile pilots, the facilitation means supporting the whole process – not only facilitating e.g. workshops.

Why agile piloting is worth it

Global smart city development is looking for new ways for companies and cities to work together, and for ways in which new technology can solve the problems of rapidly growing cities.

These solutions require that cities can create more agile ways of operating. In Finland, and in Helsinki in particular, the aim of the city is to be open, engaging residents in developing the smart city.

An agile piloting programme activates the innovation ecosystem and offers the whole city's infrastructure, data and services as a testing ground and urban lab. The pilots speed up smart urban development and put it into practice by offering an authentic environment with real users in which to trial service ideas in progress.

For companies, even the slightest integration into the urban space or data, as well as the chance to earn a name for themselves on the market, is invaluable. For service developers, it's important to get feedback on how the service works in an authentic environment as quickly as possible. In a piloting programme, the service in progress is often brought to a real-life environment for the first time. This is where its limitations and developmental problems become clear.

It's also possible to get feedback about the type of business partners needed, and on whether the planned business and profitability models are realistic. These are the questions that an agile piloting programme caters to.

Experimentation and small, agile pilots are needed to approach an uncertain future. Agile piloting is a good method for creating something so new in order to uncover the best solution and how users experience the service.

Agile pilots produce new understanding. When a pilot is running, the aims are to learn as much as possible, speed up the development of solutions and create new business models. Both the company carrying out the pilot and the platform facilitating it have a lot to learn. What's more, so does the city in general and other stakeholders, which is essential.

There are many by-products of pilots: stronger networks, new cooperation projects, and new practices to replace the old.

A pilot may also result in a product, service or operating model not suiting the intended purpose and having to be abandoned. Experiments have room for failure – meaning ideas that don't work can be refined into a new form.

NEW MODELS FOR OPEN INNOVATION

It's becoming increasingly rare for new innovations, products and services to be the result of one company's product development or closed-door laboratory work. The development activities between companies, users, research and the public sector needs new processes and platforms where users' needs and service designers and developers can meet.

The best innovative services are born when their intended users are involved in developing them. And that's exactly what agile piloting programme offers: an operating model that makes it possible for companies and the public sector to cooperate, and to engage residents in development.

SPEEDING UP PROTOTYPE DEVELOPMENT

Lean development, an experimental culture and permission to fail fast have become the mainstream. Agile pilots speed up the launch of new solutions by helping early prototypes reach the test phase fast.





Why build an agile piloting programme

A good way of running agile pilots is by setting up a programme. That way, several (3–8) different pilots on the same theme can be facilitated during the same piloting round. A programme brings synergy benefits for facilitating and communications. Pilots can also complement each other, and cooperation can be built between them.

An innovation platform, a living lab or similar organisation takes responsibility for leading and carrying out the agile piloting programme. It is responsible for funding, the strategic aims of the programme, embedding lessons learnt in partner organisations, and facilitating pilots and stakeholder cooperation.

The programme format supports cooperation between stakeholders. It gives city departments or larger companies the chance to be involved in a thematic piloting round that supports their developmental themes. For smaller companies, a programme offers the chance to use urban space, a certain infrastructure or environment (for example a health centre or school) or data (provided by city infrastructure, for example), experiment with

integrating into them, and get experiences from a real-life environment it can later use as a reference.

When planning a piloting programme, it's important to consider the following questions:

- Who will own the programme?
- Whose content-related aims will the programme serve?
- Who are the central cooperation partners who will participate in defining the theme, in funding the pilots and in co-development? Cooperation partners can also provide an environment or other resources for experiments.
- What are the selected themes for the agile pilots?

A piloting programme starts by an open call. Information about the call is shared in a broad range of channels and own and collaborator network's channels are used widely for communications. All the eligible providers can submit an offer. The final selection is communicated openly for all participants to the call. The results of the pilots are communicated and lessons and best practices disseminated widely.

KEEP IN MIND

- Running a piloting programme requires active communications with stakeholders about the content and progress of the experiments.
- Collaborate with partners and use actively the partners channels in communications.
- Stakeholders can take part by sharing experiences of the pilots with their networks.
- Running a piloting round requires intensive facilitation work from the platform.
- There are synergies when the various stages of instruction, facilitation and evaluation are carried out at the same time.

Selection criteria

Selection criteria in Smart Kalasatama

In Kalasatama, challenges have been assigned for the open calls in cooperation with partnering organizations. The selection criteria have been drawn up one case at a time to serve the chosen theme and the aims of the piloting round. Here are the common criteria for Kalasatama pilots:

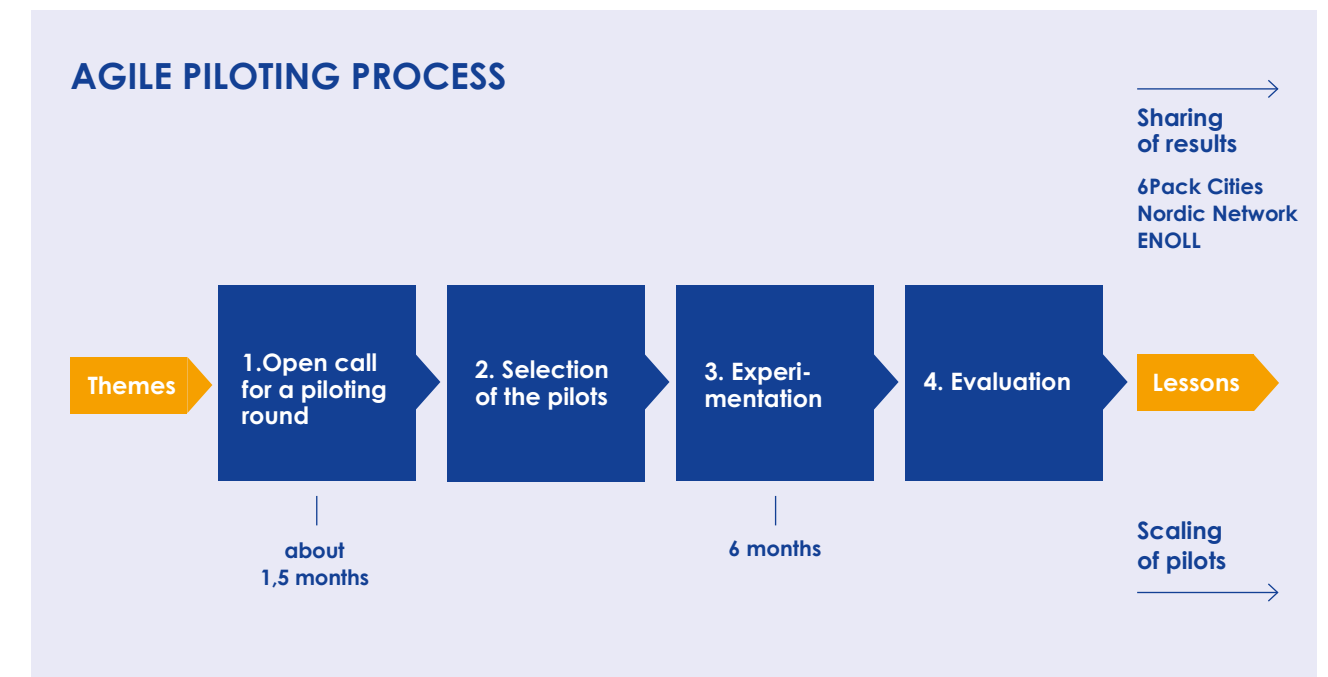
STRATEGIC COMPATIBILITY Consistent with the strategy of the City of Helsinki Supports the vision of Smart Kalasatama	
Selection criteria	Evaluated on a scale of 1–5
Innovativeness of the pilot	- Novelty and innovativeness of product or service - Experiment produces new practices/solutions/perspectives on a challenge
Scalability of the service	- Service functionality - Functionality of the service's business model - Possibility to become a permanent solution - Can be implemented in Kalasatama or Helsinki and potential to scale up
Teams and resources	- Competence of the participating team - Team's other resources (e.g. funding, cooperation) - Potential of taking the service further after the pilot - More than one organisation acting as implementer
Smart, agile and user-driven	- Service/product utilizes ICT-technology or data - Use of agile development methods - Service responds to the needs of users

Stakeholder roles and needs in agile piloting

SMART KALASATAMA Stakeholders and needs						
Stakeholders						
 Startups & SME's 100+	 Companies 25+	 Residents 1000+	 Academia	 Public Sector	 NGO's	 Innovation tourists 1700+
Innovative solutions and approaches New business	Technology platforms Business opportunities for startups and SME'S Money (sponsorship)	Needs and experiences from daily life Expertise Resident initiative	Research Collecting learnings Reflection Public sector	Platforms for experimentation Insights from cities market Opportunities Financing Networks	Support in co-creation Communi-cations Networks	Networks and new contacts Business opportunities
↓	↓	↓	Needs		↓	↓
Bypassing bureaucracy	Insights	Participation	Research interest	Collaboration with companies and other stakeholders	Network	Benchmark
First real business opportunity	Connecting with users & startups	Social aspects	Connecting with key actors in the ecosystem		Data	Learning and business opportunities
Connecting with companies, users and the city	Collaboration with the city	Learning & curiosity	Engaging with companies and startups	Understanding and developing the future market	Opportunities, thematic activities	

Running an agile piloting programme

Getting started and defining the programme



Piloting programme: step-by-step

SETTING GOALS AND CHOOSING THE PROGRAMME PARTNERS AND A THEME

Defining the objectives and theme(s) carefully is crucial for solving the right issues with agile piloting. The key questions are: what is the challenge, and how is it connected with the city strategy and the innovation platforms aims and other projects in the same field? The selection of the right strategic partners to collaborate within the programme is crucial.

The programme partners who make the call together can include, for example, city departments, larger companies and research partners. For public sector organisations, the programme offers a channel to engage with companies in a new way.

Finding the right pilots starts with planning the piloting programme and preparing the open call. The challenge for the piloting round should be defined and summarised together with the partners. That way, the theme of open call will be a frame of reference for potential pilot offers. Resources, such as data, interfaces, platforms or places, that the pilots can exploit should be identified.

OPEN CALL

During the period of open call, the aim is to communicate the challenge, aims, involvement of the programme partners and the potential resources that the pilots could use.

An ideal open call lasts 1–2 months, during which communication channels are used actively. Visibility for the open call is maximized by using a variety of channels, such as websites, social media, related events and stakeholder channels. The open call can also be communicated in national channels for procurement.

Use the relevant networks to communicate

about the call and collaborate with accelerators, business incubators, research partners, developer and innovator networks.

Open information sessions are a good way to inform companies of the experimental platform's offering in detail. These sessions can also be used to offer advice on how to fine-tune ideas.

- for example, an "experimentation clinic" before the open call closes for last-minute feedback on the pilot ideas.
- a "co-creation jam" for the 10 most potential offers to get feedback from partners and stakeholders, find potential partners to make a joint offer, and develop their ideas further.
- Think beforehand about what type of companies you want to involve and how to reach them best.

SELECTION OF THE PILOTS

The pilot offers are evaluated using the selection criteria. An expert jury, consisting of relevant stakeholders, takes part in the selection process. This is also a good way to engage the networks.

When the experimentation period starts, it is important to finetune the pilots in more detail. This is the reality check stage to define together the piloting ideas in progress. Because the aim of the pilots is to progress by means of piloting sprints, the best types of pilots do not describe progress too precisely or in too linear a way.

CLOSING THE CONTRACTS

Contract for procurement the pilot is signed with the selected teams. This contract describes the procurement as an all-round service and lays out a timetable. The intellectual property rights always remain with the organizations running the pilot. Payments can be linked to the reporting of pilots,

for example, the first half with the intermediate and second half to the final report.

KICK-OFF

The experimentation phase starts with a common kick-off for the teams. The aim of a kick-off session is to help the chosen pilots make their plans more precise and gain more detailed knowledge of what piloting means in practice, how the programme is proceeding and meet the relevant networks engaged. It's also a chance for the programme's teams to meet each other.

RECRUITING USERS

The teams define the target groups for the pilot. The facilitating team helps if needed with planning targeted recruitment and in reaching the right user groups. It's important to agree on the number of users and a timetable for recruiting them. Local contacts and networks are a great way to reach the most appropriate user groups.

Typically, 15–20 users will take part in a pilot, but it depends of the pilots. In addition to small groups that participate in co-development, larger groups can be engaged in other ways and may respond to user surveys, for example. The right number of participants depends on the pilot and its objectives.

During the pilot, it's best to aim for rich feedback from a smaller, more diverse group of respondents, rather than carrying out an approximate survey from a larger group.

When recruiting users, start by defining target groups and how to tap into them. For example, stakeholders' communications channels can be used for this. The best communication tool is the one that the target group uses, be it social media, print, or something else. The users should understand

what is expected from them and how much time is required.

Collecting feedback from the users at the end of the pilot is useful. This can be done in the form of a survey encouraging users to share feedback that will help in developing the product or service.

HOW TO INVOLVE NETWORKS IN THE PILOT

Informal gatherings: During the experimentation, aim to bring the teams and people from the key thematic networks together. Arrange informal meetings for the teams, facilitators and stakeholders organised around the mid-point of the experimental round. Facilitators can coach on how to proceed and help the teams overcome obstacles. The other network members can see how the pilots are progressing.

Co-creation workshops: Co-creation workshops are a way of engaging the network and residents in pilots more widely. They also offer a discussion forum and a place to get ideas in progress off the ground.

In Smart Kalasatama one workshop per pilot has been organized by the Living Lab. The goals for the workshop are set together with the team. An ideal workshop engages around 15 carefully selected experts, users and other relevant stakeholders. Sometimes, joint workshops for pilots can be organized if the themes overlap.

GATHERING FEEDBACK

When running agile pilots, gather feedback systematically from users and partners on how the piloting programme, individual pilots and facilitation work. The purpose of the feedback is to help you develop your piloting programme processes and evaluate the pilots.



Kuvasto Kuvio Oy



INTERMEDIATE AND FINAL REPORT

The experimental platform offers tools for documenting the pilots. A handy electronic survey at the initial, intermediate and final stage will help for pilot documentation. They can also be a starting point for reflection. What's more, the content of reports can be used in the evaluation of the programme.

EVALUATION

In the evaluations, the focus should be on what programme goals have been met, what has been learned and which individual pilots have been successful. Research cooperation can support the pilots, provide feedback and new points of view for evaluation. This will in turn help promote deeper learning and achieve greater impact.

SHARING OF THE LESSONS

Communicate about the pilots, and the lessons learnt before, during and after the piloting programme!

THE QUALITIES OF A GOOD PILOT

A good pilot is innovative and offers the chance to learn a lot – and to engage the wider network. A good piloting team wants authentic user feedback. The solution that comes out of a good experiment uses new technology or data imaginatively. It's innovative, user-centred and scalable.

Resources

An agile piloting programme requires a variety of resources from all parties: time, money, access to the platforms, infrastructure and spaces and users.

The true costs of agile piloting include running the pilots, the facilitation of the pilots, events, spaces and communications. Piloting programmes can offer a compensation for the startups and SMEs or it can be an activity provided with no compensation.

When starting to plan for a piloting programme, it's important to budget resources for carrying out the whole programme starting from opening the call. The role of facilitation is to create value for all participants, and enough time and resources must be assigned to it. Even more than money, agile piloting needs commitment from the owner of the programme. Engaging networks is a crucial part of the process.

WHO PAYS FOR A PILOT?

Piloting can be organised using a compensation model, in which companies are paid for running the agile pilots. In other words, the pilots are procured from selected startups, SMEs or other actors during an open call. Companies are asked to offer solutions to solve the city's or other provider's challenges, and the pilots are purchased from the selected companies.

Sometimes, the opportunity to pilot in a real-life environment and cooperate with programme partners can be so valuable for companies and their product and service development that they participate at their own expense. Living lab services for testing in real life environment may also be offered as a commercial service.

As well as procurement and facilitation, pilots have indirect costs: getting permission to use the

AGILE PILOTING – PROCURING PILOTS

- The piloting programme enables a "light model" for procuring pilots.
- For public sector organisations, the programme offers a channel to engage with companies in a new way.
- Pilots are made as small purchases to accelerate urban development.
- The compensation (In Kalasatama max 8000 e / pilot) is meaningful for small players and start-ups to help them invest enough time and resources in the pilot.



city platforms and data, which typically demands work by the city's civil servants. Other stakeholders also use their time and other resources when they take part in pilots or co-creation activities.

Actual piloting itself can end up requiring a surprising range of actors. Permits, communications, spaces and data of all kinds are needed. The input of city departments is seen in many ways. For example, the staff of the Kalasatama health centre have taken part in choosing the pilots, recruiting users, and co-development.

In addition, the startup teams invest a lot of time and resources. The businesses operating in the ecosystem also invest in pilots, and the pilots can redirect their practices. All stakeholders also learn from collaboration and co-creation. Lessons learned from pilots can pave the way for future services with better availability of data and interfaces, for example.

In Smart Kalasatama Agile piloting programme the startup teams have reported using about 30 days on average of expert work on pilots, and some have used considerably more than that.

Typically, the amount of work undertaken by the facilitating team on a single pilot is similar to the amount carried out by the team executing the pilot. A successful pilot demands intense participation and cooperation with all parties.

How much a piloting programme costs

Managing piloting programmes is a work-intensive service that demands resources such as time and expertise. Piloting has costs and it should be backed up by a sufficient budget. Piloting reduces the risks associated with possible larger procurements in the future, so the investment is worth its price.

Annual costs for agile piloting programme:

A year is enough time to run two half-year programmes, containing altogether about 5–10 experiments.

On a yearly basis the direct costs of running a piloting programme (2 x 6 month piloting rounds):

Personnel cost (ca. 1.5 full-time equivalents/year):	about €100,000
Research and evaluation:	at least €20,000
Workshops, communications and other operating costs:	€30,000
Procuring pilots (e.g. if 8 pilots are procured, each costing €8,000):	€64,000
Total:	€214,000

Facilitation and communication

The Living Lab team facilitates the agile piloting programme. Facilitators create the framework for the piloting programme and help the participants to find the right partners, experts, and other necessary resources. A good facilitation team has expertise on the thematic field that the pilots are linked to, and an understanding of user needs and business development.

Facilitators have a coach-like approach to their job and are able to push the piloting team forwards. Good facilitators are ready to make efforts and go beyond their job descriptions, overcoming obstacles that come up during the piloting process. As facilitation demands a wide range of skills, it is best carried out by a multidisciplinary team rather than an individual.

The facilitating and co-creation activities of the platform support teams by helping them find users, suitable test locations and establishing connections with various stakeholders. One of the platform's most important tasks is to communicate about the piloting programme to the wider audience, stakeholders and the media. The platform also links the teams to cooperate with researchers, developers and innovators. Informal ways to bring the piloting teams and stakeholders together are great tools to enhance collaboration and learning from doing together. To achieve this, co-creation workshops, info sessions and morning meet-ups can be considered.

Facilitation remains active for the duration of piloting programme. It starts with choosing the

co-operation partners and theme, and coordinating an open call. After that, it progresses to starting the pilots, coaching, contract processes and co-creation events. A facilitator also typically helps with the process of getting the permits necessary connecting to the city infrastructure, and get access to the resources in the area. The facilitator also ensures that at the end of the piloting period the pilots are documented, their lessons gathered and shared, and the programme evaluated.

TELL THEM!

Agile pilots are a means to open smart city development for wider audiences. Communications is a relevant part of the piloting programme and visibility also brings value for the startups and SMEs running the pilots. Concrete examples, stories and user experiences are also interesting for the media.

External communications are important for the piloting programme before, during and after. Spreading the message far and wide will boost the visibility of the programme and pilots, its impact as well as help to share the lessons with the right stakeholders.

User engagement

There are many ways in which users can participate in the piloting programme. “User” is a broad term: city residents, representatives of organisations, building maintenance staff, teachers and health-care employees can all be users for the services that are piloted. When the experimentation phase is up and running, it's important to take advantage of every situation that provides contact with users. This is a great chance to get feedback about users' perceptions. Do they understand the service concept? Do they have doubts about anything? The Living Lab team should encourage and support the companies and organisations who do the pilots to reach out for the users, and invest their time to gather feedback.

USERS AS CO-DEVELOPERS

Depending on the pilot and its focus, users can also act as active partners in co-developing a service. A

deeper involvement of the users typically needs a service design approach. Partnering, for example, with a service design education institution on a programme level to get support for user involvement may be considered.

Typically, participation in pilots is free for users, but in some cases setting a price can also bring understanding of the perceived value of services. Teams may consider rewarding participants with a small gift to thank them for investing their time.

A range of factors motivates citizens to join pilots. New technologies and the possibility to affect services interests users who want to be among the pioneers to influence new development in this area. Others are motivated by their values: for example, the knowledge that a service promotes an environmentally friendly way of living could motivate users to come onboard. There may also be social incentives: users get to know the neighbourhood or take part in activities, or learn something new.

Lessons learned

The city organisation and businesses of all sizes are interested in experimentation, co-development and new networks. The pilots pushed ideas in progress forward in a wider context. In the end the teams were surprised by the resources needed for pilots.

The most important part of pilots is learning. That means it's important to learn lessons systematically from all stakeholders, both during and after the pilots. Unless a pilot is documented, only memories of it remain.

Research collaboration can help in summarizing and analysing deeper lessons learned from the pilots, which can be summarized and shared effectively with networks, making the pilots more valuable.

The piloting team learns the best lessons when it actively takes advantage of the experimentation period. The platform facilitators encourage the teams to do more targeted pilots and exploit their networks. At their best, pilots proceed with startups, say, who need to bring their own service forward fast. It's hard to anticipate, for example, how much time it takes to find a place and the right resources to do the pilot. There are also human factors affecting the pilots such as drop out in test groups due to changing schedules and personal situations.

That's why it's key to start recruiting users in good time and informing participants about how much time they'll need to commit.

The agile pilots in Kalasatama have indicated that a programme is a better form for piloting than individual pilots. Running pilots in programmes has taught us these lessons:

- Pilots support each other.
- The pilots produce new understanding, and the products and services being developed make great progress.
- The co-creation workshops organised around

the pilots are a good way to involve a wider ecosystem and make progress on ideas connected with the theme.

- The pilots have communicative value: sometimes the greatest value of a pilot is the story communicated through photos and videos and by gathering comments and testimonials. Even a small example from real life can convince the right cooperation partner.
- In piloting, the facilitators' role is to remove barriers and deal with bureaucracy in order to help the piloting teams to proceed. This demands will and persistence.

NEXT STEPS

This cookbook offers a basic framework for an agile piloting programme. It's been piloted and tested in Smart Kalasatama, Helsinki.

The framework can be expanded and developed to meet specific needs.

The following considerations offer good directions for experimental programmes:

1. A business accelerator on board as a partner in the piloting programme
2. Another potential piloting programme partner is a university research group that will provide data and be responsible for evaluation of the pilots.
3. A piloting programme may end up being part of a future larger publicly-funded project. In this case, the programme should have a clear goal of creating understanding about a new field (eg smart parking), technologies, challenges and main players in the field before any procurements are made.



WHAT LESSONS CAN AGILE PILOTING TEACH ABOUT SMART CITY DEVELOPMENT?

Agile piloting enables the whole urban community to learn as much as possible during an intensive 6 month period.

Here are some key takeaways:

1. An understanding of the types of services that excite residents was gained:

- Residents' favourites were peer solutions that brought them into contact with others through a clear activity or goal (such as group exercise or reducing their carbon footprint). People were ready to make an effort for participating to this kind of pilots.
- Residents were not excited by new technical solutions that did not have a significant financial or time-related benefit or did not have a social aspect.
- People were interested in services with a clear benefit, ease of use and proximity (e.g. shared spaces nearby, online services)

2. The agile pilots showed the challenges of spreading new smart solutions:

- Most emerging smart city solutions share the same challenges: lack of business ecosystems, old legislation, lack of business models, integration of new solutions to legacy systems, interoperability between systems, the change in behaviour demanded from users takes time...
- The agile pilots give a solid understanding of the state-of-art
- Most pilots represented the state-of-art solutions in their fields
- The teams were solving the "go-to-market"

issues first time – even in global perspective

- The piloting is real future work, paving the way to new innovations and markets

3. The agile pilots help to open up the understanding of the systemic limitations and possibilities of smart city development

- System compatibility challenges: data quality and maintenance challenges; the need for data operators and other, new intermediary operators
- Slowness of systemic change that is often required by disruptive solutions.

Piloting is a good way to start anything at all, be it an action or a change. The lessons of the pilots continue living in many ways after the programme ends. All parties involved get something from the pilots and can take the learnings further in their own activities one way or another.

Some participating companies quickly expanded internationally afterwards. Other companies take some time to digest what they've learned, perhaps having realised that their concept or business model is not yet profitable. Often, these negative lessons, too, push development forwards. They produce new paths and ideas that may be scaled up in several years' time.

Agile Piloting is probably the fastest way to gain more insight into problems, make them visible and involve a range of stakeholders. Agile piloting is worth it!



Tero Pajukallio



Semcity



Riia Pihlanto



Flow Festival / Jussi Helsten

SMART KALASATAMA

What makes City smart and how to do that?
The Agile Piloting programme was created to accelerate and concretise smart city development in Smart Kalasatama district in Helsinki. 2016–2018 a total of 21 agile pilots were run together with startups, companies, City of Helsinki, researchers and residents. Many solutions experimented in Kalasatama are now scaled up, some good failures have been made and a lot has been learnt. This cookbook offers the tested recipes of experimentation for all urban innovators.

www.fiksukalasatama.fi/en
www.forumvirium.fi/en