INNOVATION PLATFORMS – WHY, HOW AND BY WHOM?

RUGGEDISED

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About the project: RUGGEDISED is a smart city project funded under the European Union's Horizon 2020 research and innovation programme. It brings together three lighthouse cities: Rotterdam, Glasgow and Umeå and three fellow cities: Brno, Gdansk and Parma to test, implement and accelerate the smart city model across Europe. Working in partnership with businesses and research centres these six cities will demonstrate how to combine ICT, e-mobility and energy solutions to design smart, resilient cities for all.

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WHAT ARE INNOVATION PLATFORMS?

Why do we need Innovation Platforms?

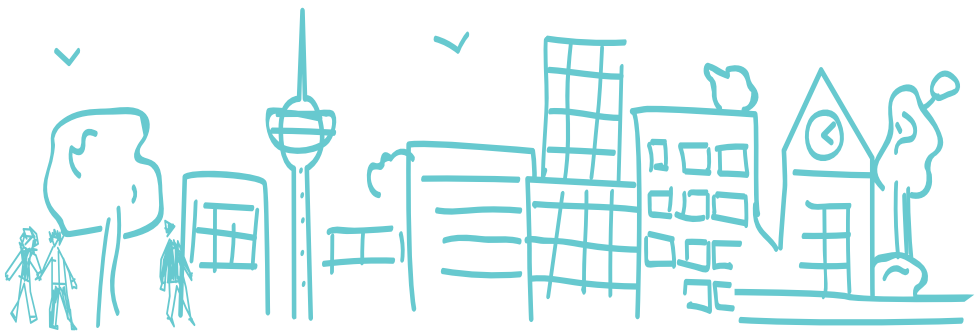
The complex challenges of today - ranging from social divisions to global warming - are difficult to handle by existing organisations, formed from a logic more suited for tasks and problems that can be clearly defined and divided. In recent years, innovation has often been emphasised as the key to managing complex societal challenges. Various forms of innovation efforts have become increasingly common. For example, investments in development and testing of new technical solutions in areas such as ICT, mobility and sustainable construction, but also solutions with social focus developed for and by the user such as more equal public space and services for sustainable lifestyles. It has become more common to work with concepts such as test beds and 'living labs', using design thinking and an experimental methodology in order to develop new solutions and innovation.

The aim of this brochure is to offer an introduction to the concept of Innovation Platforms. What is an Innovation Platform, how it can be set up and function, and what a city or municipality might gain from working this way? This brochure is based on experiences from several national projects, such as the Swedish six year-long project Innovation Platforms for Sustainable, Attractive Cities (VINNOVA, 2013-2019), with research overview from the RUGGEDISED-project and giving examples from both The Hague and Rotterdam in the Netherlands and Borås, Kiruna and Lund in Sweden.

General definition and objective of the Innovation Platform

Innovation Platforms can take many shapes, fulfil several roles, and be more or less, embedded into the ordinary organisation of a municipality. The Innovation Platforms strive for broad synergies between actors in urban development as well as formalised cooperation between stakeholders engaged in research and development. Actors involved include public organisations, private companies, universities, non-profit organisations and their users, clients, and citizens in general. As the issues dealt with and the work carried out should be based on an overall perspective on sustainable urban issues, the platform should be based on a common vision.

The Innovation Platform acts as an arena that bridges and holds together relevant actors around problem solving. Based on this approach, the Innovation Platforms can conceptually be seen as capacity-enhancing environments that handle different types of issues which for various reasons are not always managed by today's institutional landscape. The platforms are reinforcing structures that allow certain types of problems or challenges to be "caught" and "managed". The formal hierarchical organisation remains, but its capacity is increased with the help of the platform that addresses issues that today are not caught by anyone, for various reasons.



Activating the urban innovation ecosystem

The sustainability of the results of Living Labs and innovation projects is a known challenge.[1] The aim is to further exploit this activation of the urban innovation ecosystem, beyond the lifespan of individual project-based collaborations. Active urban innovation ecosystems continuously address scientific, technological or innovation objectives and contribute to the public interest and societal challenges. Based on the lessons learned from about 100 "innovation labs", field labs, and such in Europe, a number of factors for successful Open Innovation Public Private Partnerships (PPPs) have been identified.[2] Formalisation of the collaboration, involvement of the government as an actor, shared goals and a clearly defined public interest, active involvement and dedicated investments are among the key requirements for self-sustaining collaborations.

How to generate dedicated investments is among the most complex prerequisites for self-sustaining Innovation Platforms. Innovation Platforms require a detailed collaborative business and investment plan for the different phases of operation and will require careful consideration of joint activities that will generate funds for it, such as delivering innovations and services for the wider Quadruple Helix partners of the city. Such a service approach not only guides and directs the activities of an Innovation Platforms. It also stimulates to define shared goals and to collaboratively close knowledge gaps. In that sense Innovation Platforms and their activities can be seen as a dedicated strategy to 'broker' knowledge across various expertises. It also helps the perception of being part of a creative urban innovation agenda, instead of just delivering an urban development project in an efficient and effective manner.

To tackle societal challenges, being able to test and try out new ways of working and new solutions in both lab and real environments is important. However, evaluations show that many innovation projects lack the connection to political priorities, ongoing processes and established organisations (such as municipal administrations). The actors that gather in a test bed often start out from different organisational logics, where the operations are controlled in completely different ways. For example, they might be based in a business-oriented logic, which does not necessarily support what the municipality values most. Therefore, innovation initiatives often collide with existing structures and logic, and innovation also involves a large number of internal challenges for the municipal organisation, built around a management logic, and usually based on longer investigations and analyses as a basis for decisions. This makes the idea of testing, failing and further developing challenging.

Successful innovation for sustainable, attractive cities is thus largely a question of building capacity for organisation and leadership. Innovation Platforms are addressing these challenges and are creating knowledge and the necessary functioning structures. They can accommodate or collaborate with test beds and living labs, but above all, they help build the own innovation capacity of the municality or district. This capacity also needs to be linked with other actors.

When complex problems concern several parts of an organisation there is a high risk of shortcomings in the organisation's capacity to handle these problems. Deficiencies in leadership, disorientation about collaboration, unclear responsibilities and mandates, lack of communication and lack of access to relevant resources, competence or support are all common issues. The ability to address and tackle societal challenges is thus an issue that is linked to organisational and societal capacity to mobilise resources, knowledge, decisions and responsibilities.

1. Gasco, M. , Living labs: Implementing open innovation in the public sector, Government Information Quarterly 34 (2017) 90–98
2. EU-GREAT! European guide and recommendations for the combined funding of large-scale RDI initiatives, 2016, De Heide, M. The financing of fieldlabs in the Netherlands, 2016, TNO, Den Haag

Increased cross-sector collaboration and support of multi-stakeholder networks are the keys for successful implementation of Innovation Platforms. It is important to remember that the word 'platform' should not be understood literally. An Innovation Platform may not belong to a specific part or department within a municipality, a company, or an NGO. Rather, conceptually 'platform' refers to an approach or a way of working.[3]

Various governance structures of Innovation Platforms

The Swedish innovation agency VINNOVA supports the development of Innovation Platforms in several Swedish cities (Stockholm, Gothenburg, Malmö, Lund, Borås, and Kiruna). According to VINNOVA, Innovation Platforms should be based on sustainable urban issues. The innovation Platform collaboration should enable the exchange of information, knowledge, problem descriptions, as well as solutions. An active leadership for the development and a common vision of the platform has proven to be essential for providing broad synergies between actors in urban development, be it public actors, private companies, universities, non-profit sectors, or users. To create long-term stability, it is important to establish some form of structured collaboration between stakeholders. Initially, VINNOVA hoped the platforms would focus on selected geographic areas in cities. However, the Innovation Platforms could result in many different types of new solutions, thus, the Swedish platforms evolved to arenas for broader strategic discussions with a greater focus on system innovation, though based on local needs and conditions.

Within the RUGGEDISED-project, researchers have identified some characteristics of Innovation Platforms, that operationalise the term for empirical analysis, based on examples from across Europe. According to this study, a platform generally:

- consists of actors relevant to the area; such as municipalities, businesses, citizens, customers, universities and research institutes;
- aims at catalysing innovative solutions that could be based on location;
- identifies stakeholders who could form one or several Collaborative Innovative Networks (CoIN);
- establishes a holistic (cross-sectoral) and systematic approach targeted at a long-term perspective on urban transformation;
- supports and follows a mission-orientated innovation policy; and
- provides access to expertise and resources.

However, identifying examples of Innovation Platforms is not a trivial task. Some platforms show all characteristics of the Innovation Platforms but are not named as such (e.g., the 'Innovation Platform' in Glasgow and London). In addition, some examples could be seen as collaborative innovation/learning arenas but follow a different rationale (e.g., exchange between Urban Living Labs or other rather temporary networks/platforms). Therefore, researchers in RUGGEDISED have analysed the potential of innovation platforms for sustainable and resilient urban development (as this is the focus of RUGGEDISED) along several dimensions:

3. This is similar to what researchers such as Gloor (2006) and Torfing (2016) describe as a Collaborative Innovative Networks (CoIN).

- characteristics and governance of the innovation platform such as aims and topics, key actors, framework conditions, and timeframe;
- activities and innovations initiated/triggered by the platform as well as details on level of commitment, target groups, focus and spatial level, and cross-sectoral and cross-administrative characteristics; and
- embedding and success of the platform such as links to city strategy, financial resources, monitoring, and main challenges.

The project identified five types of innovation platforms, here described along the six analytical dimensions of the Innovation Platform heuristic (Table 1):

1. Global/national platforms – Network of platforms;
2. The local networking platform;
3. The supportive/financing platform;
4. The collaborative and strategic platform; and
5. The co-creation platform.

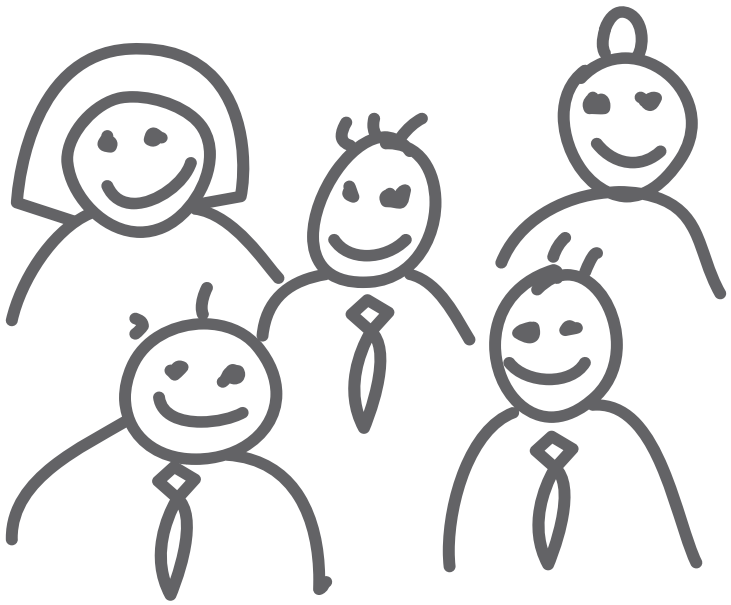


Table 1. Overview of Urban Innovation Platforms in Europe

Type	Goal	Addressed knowledge brokerage principles	Addressed actors	Activities
Network of platforms	Knowledge exchange between cities with the innovation ecosystem in the focus; connecting local initiatives to the global level	Matchmake Build capacity	Cross-sectoral Both actors from local initiatives and the global level	• Network meetings, study visits • Exchange of ideas and knowledge
Local networking platform	Build local capacity among practitioners and establish local networks, creating new ideas	• Inform • (Consult) • Matchmake • Build capacity	Local stakeholders across sectors and institutions	Knowledge exchange formats around various thematic clusters, initiating and supporting projects
Supportive/financing platform	Use or distribute financial resources/incentives to support projects	• (Inform) • Consult • Collaborate	Start-ups, SMEs	Support with different forms of funding, such as venture capital, for upscaling and diffusion
Collaborative & strategic platform	Bringing together stakeholders to implement and/or to work on urban innovation/development strategies; strong governance focus following the strategic goals of the city	• Engage • Collaborate	Different actors/stakeholders (cross-sectoral, cross-administrative, and quadruple-helix)	Meetings, working groups, establishment of strategic alliances
Co-creation platform	Provision of a specific location (e.g., 'space' and 'lab') to support a creative, experimental milieu, focused on specific local needs and urgent issues of a neighbourhood	• Consult • (Matchmake) • Engage • Collaborate • Build capacity	Bottom-up initiatives	Workshops, Living Labs, etc.

In the table 1, the emphasis on what an Innovation Platform manages or should handle can be slightly different. The conditions and the environment around municipalities and administrations vary, for example, access to skills, resources and networks. Each platform has its unique character based on identified gaps and local improvement areas. For example, it may be focusing at getting better at catching up and managing challenges; capturing innovative ideas; explore problems, build knowledge with others; create cross-border co-operation, or become better at implementing and scaling up innovations. Exactly what flows are captured and facilitate by a particular platform, varies based on the local conditions and ambitions in each Innovation Platform.

The thematic content and focus also vary. Some platforms build new interfaces between state, academy and municipality; others focus on creating new types of flows between business and the public sector; a third explores the way in which the municipality can be better at capturing ideas and problems or at working with implementation within the municipal organisation. Further below, we will see some examples of how Innovation Platforms direct their work.

Innovation projects or transition experiments?

One of the recurring problems organisations run into when working on programs facing societal challenges is the connection of individual projects to the common challenge. Often project managers are not even aware their project is part of a larger transition, they just focus on the task at hand. By recognising the project at hand as a transition experiment, new opportunities open up. When connecting transition experiments, they might learn from each other (opportunities, obstacles, management, etc.) and strengthen each other. Connecting the projects also requires a different perspective on the individual projects. They should not be conceived as regular innovation projects but as transition experiments. Table 2 describes the differences between regular innovation projects and transition experiments.

Table 2. Differences between regular innovation projects and transition experiments.[4]

	Regular innovation project	**Transition Experiment**
Starting point	Possible solution(s) (to social or technical problem)	Societal challenge (to solve persistent societal problem)
Nature of the problem	A priori defined and well-structured	Uncertain and complex
Objective	Identification of satisfactory solution (innovation)	Contributing to structural societal change (transition)
Perspective	Short and medium term	Medium and long term
Method	Testing and demonstration	Exploring, searching and learning
Learning	Mainly 1st order, single domain and individual	Mainly 2nd order (reflexive), multiple domains (broad) and collective (social learning)
Experimenters	Specialized staff	Cross-organizational and multi actor alliance
Experiment context	(partly) Controlled context	Real-life context
Management context	Classic project management (focused on project goals)	Transition management (focused on social 'transition' goals)

4. Source: Van den Bosch, S. Rotmans, J. (2008), Deepening, Broadening and Scaling up A Framework for Steering Transition Experiments.

Some examples of Innovation Platforms in Europe

There are many examples of various Innovation Platforms in Europe, following here are a few, illustrating different focusses and scale, and elaborating on the types of platforms from table 1 above. More examples can be found under the Further reading chaper, below.

CIC Rotterdam: building an innovative ecosystem

In September 2016, the Cambridge Innovation Centre (CIC) opened its doors in Rotterdam. The place acts like a hub within a hub, connecting ambitious innovators with resources, community and established businesses. It's the CIC's mission to "fix the world through innovation by developing multi-faceted communities that support changemakers on their entrepreneurial journeys".

One of the activities to connect and grow is the Venture Café. The goal of the Venture Café is to build an innovation community and to accelerate innovation and growth within the regional ecosystem. They achieve this by connecting creators, investors, co-workers and ideas within the community, and by offering a weekly programme, engagement spaces, and storytelling opportunities that are tailored to the needs of Rotterdam.

Since the opening, the Rotterdam community has grown from approximately 130 companies to more than 220. In 2018,362 innovations events with 19.977 visitors were hosted in Rotterdam.

The Venture Café can be seen as a regular innovation project but shows also some features of a transition experiment. For example:

1. They explore, search and learn together about innovations.
2. The learning process takes place in a reflexife way within multiple domains.
3. The Venture Café supports cross-organisational collaborations and multi actor allicances.
4. The collaborations and innovations are carried out in the real-life context.

To reach the full potential of the Venture Café, they offer the following activities:

- Thursday Gatherings: free weekly event for network opportunities and educational sessions.
- Talent programmes: a programme that connects students, alumni and experienced professionals with innovative companies.
- Informal investor dinner: a dinner with investors to connect, build community and advance initiatives to increase start-up investments in the Rotterdam region.
- IVB: The Innovation Visitors Bureau (IVB) connects innovators from all over the world to the innovation ecosystem of the South Holland Region.
- Captains of innovation: a cross-sector, full spectrum, corporate innovation programme.
- Rotterdam capital days: a three-day during programme to explore the diverse and wide ecosystem of capital and talent in the Rotterdam region.

The Rotterdam example show how a supportive/financing platform might function, where this specific platform use incentives to support projects and start-ups, SMEs and connect them to with different forms of funding, such as venture capital, for upscaling and diffusion.

The Hague - Geothermal energy The Hague

In 2004 a civil servant from the municipality of The Hague found himself in the "wrong" workshop. Instead of visiting a session on underground heat/cold storage he was attending a session on geothermal energy. Afterwards he teamed up with the Dutch platform on geothermal energy and investigated numerous possibilities of using Geothermal Energy in The Hague. All possibilities however failed on the business case. Only after three years of exploring and searching a feasible idea was developed with a consortium of six partners. The idea aimed to build the first housing district with a low temperature network in the Netherlands, heated by a geothermal source. One energy producer company (Aon), one energy distribution company (ENECO), three housing corporations (Vestia, Haagwonen and Staedion) and the municipality of The Hague worked together in the consortium. The project aimed at building 4000 new houses, connected with a district heating network to a geothermal well at 2300m below surface. Significant investments were required of the participating partners for the heating network, the drilling of the well, and the building of the houses. One of the main challenges of the consortium was to manage the interdependencies of the huge investments. The building of the first houses of the project started in 2009 and the geothermal well was drilled in 2010.

While being very successful in becoming the first Dutch consortium doing large investments in innovative geothermal energy, the project did not achieve its goals. Due to the global crisis starting in 2007 most of the 4000 houses were not build. Also the drilled well did not perform as predicted due to degradation of the surface of the drill hole sides. This bankrupted the special purpose energy company distributing the geothermal energy, leaving valuable lessons learned to the actors, both on the technology as on the involved business models.

This example shows the difference between innovation initiatives and regular urban energy projects. The intensive search for trust, viable open business cases and the emphasis on learning are key to working in an innovative environment.

Key success factors of the initiative where:

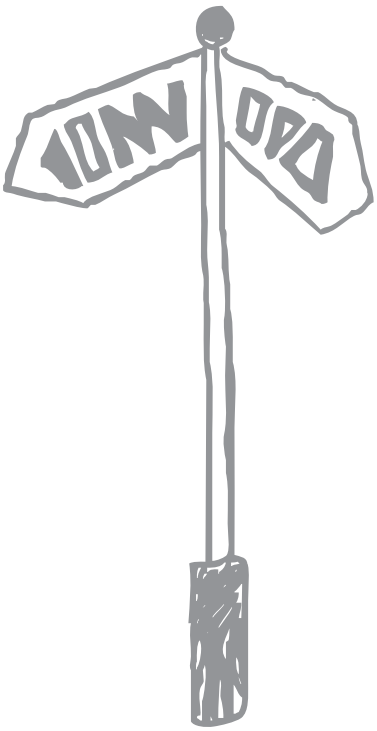
- Building a sound business case was the key to make the project finally take-off. This required a whole new approach of all the stakeholders in the consortium. They decided to work with open books to give one another insight in costs and revenues calculations.
- Patience proved to be an important asset. It took 6 years from the first initiative to the start of the drilling. The project almost froze at civil servant level.
- The involvement of municipal and business officials at CEO level. A former SIEMENS director acted as an ambassador to release the project and bind all CEO's and the elderman to the project.
- Devotion of all participants to work with a (then) new and exciting technology.
- Cooperation of the project partners was based on trust, only later was the cooperation formalised in contracts.
- Strong ambition of the elderman of The Hague to be the first with a geothermal heated district connected to the efforts of the Netherlands geothermal energy association to have a demonstration project for geothermal energy.
- National (UKR) and European (EFRO) grants played an important role in allowing companies to take the risk of investing in the project.
- The example from The Hague show the characteristics of a co-creation platform in the Table 1, joining strengths and resources to focus on a specific location to support a creative, experimental milieu, focused on specific local need.

Examples of the organisation of Swedish Innovation Platforms

The six innovation platforms in the Swedish Innovation Platform initiative have approached their tasks in different ways. Some have focused their platforms work on changing and developing internal structures in the city and on cultural change. Others have had their focus on external collaboration, working with many partners, and seeing their business networks as a hugely important assess. Yet others have linked large urban transformation processes with new ways of thinking and working, seeing innovation as the key and an absolute must to cope with transformation, business as usual and challenges from surrounding society at once.

The City of Borås, a mid-sized Swedish city and municipality with approximately 110 000 inhabitants, has worked strategically with cultural change and internal structures in the city. **The Borås Innovation Platform** has put an emphasis on the innovation platform, both through support, meetings and training, by working with visual concepts and the understanding of innovation and with new working methods, but also through a physical space - a concrete working area for the platform. Together with the University of Borås, RISE Research Institute of Sweden, and the public Energy Departement Borås Energi och Miljö, they have formed an active team, cross organisations, with a shared vision and tangible goals.
In its early days, the Borås Platform had the characteristics of a co-creation platform (see table 1 above), focussing on a specific area of the city, and its local needs and urgent issues. However, the Platform has evolved to what today might be described as a local (for the city) networking platform, where capacity building for practitioners and the establishment of local networks as well as supporting and inspiring new ideas, are all in focus.

The municipality of Lund, with its 122 000 inhabitants, located in the far south of Sweden, has a history of many strong actors connected in the city. This local history has to some extent given **the innovation platform "Future by Lund"** its focus; collaboration between many participating actors. Of the Swedish Innovation platforms, Future by Lund is the one which has had the most distinct business approach, and a close collaboration with the business sector. The core team consists of project management expertize from both public and private sector, mainly from the City of Lund. The Platform team, consistent of eight persons, is surrounded with a strong network of partners from the academia, businesses and others. With its dedicated organisation, the Innovation Platform has been able to give support to a large number of projects, mainly in their early stages, whether it has been the need of supporting project management, need of more contacts and access to the platforms big network, or business development for the innovation projects. Towards the Aademia the Innovation Platform can function as an arena for understanding of currerent research needs and for bringing research results to use. The Platform has had focus on a number of themes, for instance "Moving Things & People", Human Centric Light, Energy and Future Living and Spaces. The structure and model of the Lund Platform has been very successful, and much appreciated in the business and innovation landscape of the region. Touring the district (bringing the expertise to the potential innovation partners) as well as a well-functioning storytelling, is also part of the concept.



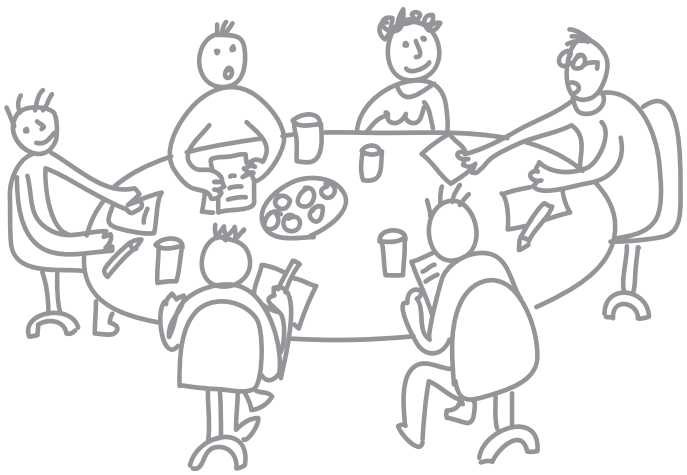
The Future by Lund Platform has had its origin from the Business Department of the city, giving it its focus on business opportunities and development. With good communication channels and short contact ways to decisionmakers, the platform has an efficient stucture.

The Lund Innovation Platform is focusing on sustainability and attractiveness of the city and is a meeting place for new and established participants. Different test environments are created (focus is on six challenges that will shape sustainable smart cities). The platform is functioning as a collaborative and strategic platform (see table 1 above), bringing together different actors/stakeholders (cross-sectoral, cross-administrative, and quadruple-helix) to implement the strategic goals of the city.

If we compare the **Kiruna Innovation Platform** to the table 1 (above) it stands out as a typical collaborative & strategic platform, bringing together stakeholders to work jointly on urban development strategies and their implementation.

The City of Kiruna in the very north of Sweden is currently undertaking a unique development journey, where large parts of the city must be moved and rebuilt. In this context, the city also tries to take a holistic approach and add a system perspective on the future city. In this case, The Kiruna Innovation Platform has been a central hub, bringing many actors together. The platform team consist of four persons, but the municipality and city government work closely with the business companies, mainly the mining company LKAB, who are responsible for the mining under the city that makes the moving of the city centre crucial - but who also are funding a great deal of the large investments in the construction of the new Kiruna. These are long term commitments, and this holistic and long-term approach is the key to all work taking place in the Kiruna Platform. Though the example of Kiruna might seem a bit specific, with a unique challenge, these strategies of the city can be applied to other large-scale challenges or development issues. Bringing together stakeholders to create and address a longterm common agenda and doing this with the Innovation Platform as a joint arena, has been successful and has led to many sustainable projects being implemented, with multiple partners both within the city's own departments, NGO's, the local businesses and others. A concrete case from the Kiruna Platform is how they develop a new energy system based primarily on energy recovery from LKAB's processes. Large amounts of energy of different quality are available and can be utilized in different ways and for different purposes.

The Kiruna Innovation Platform is run from the Municipality of Kiruna and was initiated by the strategic management group of the Municipality.



To set up and run an innovation platform

How to collaboratively develop a vision and mission

The importance of setting a joint vision and mission for the Innovation Platform cannot be overemphasised. In order to be successful when bringing multiple partners together, from different organisations (who in their turn have different perspectives and goals), and to be as efficient and free from conflicts as possible, the innovation platform should set the joint agenda early in the process. Developing the common vision can be a process of large or smaller scale, all depending on the context of the specific platform. Using a method where design thinking helps you frame your vision does not have to take more than 90 minutes, but a workshop on common vision and mission can also be a project for several day's workshops, gathering not only the platform team but all partners as well as focus groups from relevant stakeholders. Setting the scale and ambition for the vision and mission is one of the important early decisions for the Innovation Platform management team. Read more under Further reading, below.

How to establish a shared problem analysis and trust

Transition processes towards sustainable systems in the built environment show many challenges and uncertainties. Most of these challenges emerge because of the complex institutional context in which the existing boundaries between public and private organisations are fading. Traditional efforts to solve problems are no longer enough and new approaches are required. Actors and stakeholders are challenged to collaborate in new ecosystems. Knowledge is often distributed among different stakeholders, as are costs and benefits. Also, the behaviour of actors and stakeholders can be unpredictable in certain situations. Therefore, it is a complex task to predict risks, envisage the likely development of the ecosystem in the future, as well as the effects of collaboratively developed solutions.[5]

Urban challenges are often subjective and can be seen as social constructs or perceptions; consisting of a more or less coherent set with ideas, believes and opinions. These underlying non-concurring perceptions often prevent actors and stakeholders from finding a 'common ground', which can result in suboptimal solutions to tackle the urban challenges.[6] In order to find this common ground, it's recommendable to (a) share knowledge towards a shared problem definition and (b) build trust among the involved actors and stakeholders.

Knowledge sharing

The stakeholders in the system have different kinds of knowledge. Three most common types of knowledge are:[7]

- Procedural knowledge, which is knowledge about which laws and regulations are applicable, the procedural stages of these laws or regulations, and the timing of them.
- Scientific knowledge, which is the formal knowledge, most of the time encoded in reports or models, that can be used to understand and align perceptions of the problem or to find solutions.
- Local knowledge, which is tacit knowledge of the people living in the area that resembles specific knowledge about informal rules and networks as well as peculiar aspects of the civic and natural environment.

5. Koppenjan and Klijn, 2016
6. Klijn & Koppenjan, 2014
7. RUGGEDISED, D1.2

Local knowledge is especially important to create a shared understanding of the local system and problem. In the process, the following questions could help to get an overview of the knowledge involved:[8]

- What knowledge do the involved actors have?
- What expertise do the involved actors have?
- What expertise is required to succeed?

An example of a helpful method to create a shared understanding of the problem at stake, is the awareness scenario method.[9] This methodology has been tested and optimised on sustainability issues in cities, but the methodology is quite flexible and can be adjusted to specific situations. The EASW-methodology consists of the following steps: discussion in mixed stakeholder groups on a joint vision of the future, back-casting exercise and prioritisation of measures (a roadmap). The process is divided in three steps:

1. The present system: the discussion about the present system can be nourished by the joint knowledge base of the local system. The goal of this step is to gain a common understanding of the present situation and to share the knowledge with all involved stakeholders. Participants will discuss the present urban system, the interdependencies in the urban configuration and between the system actors, the roles of the system actors, and its vulnerabilities. The discussion will result in a description of the system as it is now, that is validated by all system actors.
2. The system of the future (2050): the influence of available technologies, innovations technology trajectories, laws and regulations, and availability of funding mechanisms are discussed in this step, to recognise the threats and opportunities for the future system.
3. Roadmap towards a system in 2050: the joint vision on the future system will be used for a back-casting exercise: what strategies, measures and interventions are needed to reach the future system and what kind of obstacles (law, regulations, behaviour, funding mechanisms, business models) should be removed or adjusted to smoothen the transition? The roadmap will contain technology implementation and accompanying measures to coordinate the decisions of the stakeholders.

Trust building

Stakeholders will only share their information and knowledge when there is a feeling of trust in the process. Trust is an important aspect, because trust can take away obstacles for a successful collaboration. Trust increases the abilities of stakeholders to predict each other's actions so that their insecurities and fear for opportunistic behaviour can be reduced.[10]

Important for trust building are face-to-face meetings and workshops. Face-to-face communication has both a substantive as well as a process function. It facilitates information exchange and is especially important in the exchange of tacit knowledge.[11] Furthermore, it is highly important for building trust, exchanging mutual commitment and building a group identity.[12] A combination of informal, team building events and meetings/workshops is important for enhancing understanding and developing trust.

8. MAFMETIS D.3
9. For more information, see:
https://cordis.europa.eu/news/rcn/8356/en
http://www.coastalwiki.org/wiki/European_Assessment_Scenario_Workshop_(EASW)
10. Klijn, et al., 2010
11. Asheim et al., 2007
12. Ostrom, (1998). Marzano et al. (2006)

Building trust can be very time consuming, using a tool to create trust in an early phase can therefore be helpful. A good example of a tool is the 'Profiler'. "Profiler provides participants with an in-depth insight of each other and each other's organization. By developing deeper insight at an early stage, participants are better aware of what they can and should expect from the other parties and what each individual can contribute to the coordination and cooperation processes. This results in richer knowledge of each other, shared in an easy way".[13] The steps of this process are:

1. Filling out profiles: the stakeholders fill out their own profile.
2. Short exchange and explanation of the information on the profiles.
3. Scenario with issues: for different issues the group must decide what organization and people should be involved to tackle the problem.
4. Reflection: the stakeholders reflect on step 3.
5. Formulate work agreements: the group formulates work agreements according which they will work in the future.

It must be noticed that this tool can only be used in the beginning of the process. In the rest of the process it's just a matter of time to get to know each other's goals, intentions, expertise, experience and capacities.

How to collaboratively develop services and a project portfolio, and how-to setup and run a governance structure and decision rules

Earlier it has been stated that the collaborative development of services and a project portfolio is a crucial prerequisite for Innovation Platforms to become self-sustaining, beyond the scope of individual innovation projects. But how can an urban innovation ecosystem be activated in such a way that its partners collaboratively define their added value and engage in outreaching activities to attract investments? Innovation Platforms have a key role in addressing knowledge gaps, identifying innovation opportunities, networking and upscaling/replication of success stories of individual innovation projects. Moreover, partners are frontrunners and have state-of-the-art knowledge and expertise in alternative ways of working and alternative incentive structures that are key to see innovation as learning trajectories and not just as urban development projects. From this role and expertise partners of an Innovation Platform get the legitimacy to develop services and attract funding to the platform.

In the list below examples of services that could be provided to the outside world and to the participating members are given. Nevertheless, it can be expected that income from services (and innovations) will not entirely cover the needed funding for the innovation platform. Apart from a mission plan for the short term, a long-term strategy for the funding is therefore needed.

In general, three aspects should be taken care of before Innovation Platforms can engage in delivering services to the wider community of partners within a city: (a) developing a long-term vision, (b) setting the governance structures of the platform; (c) building a consistent project portfolio.

13. Koning, et al, (2013).

Long term vision on strategy and collaboration

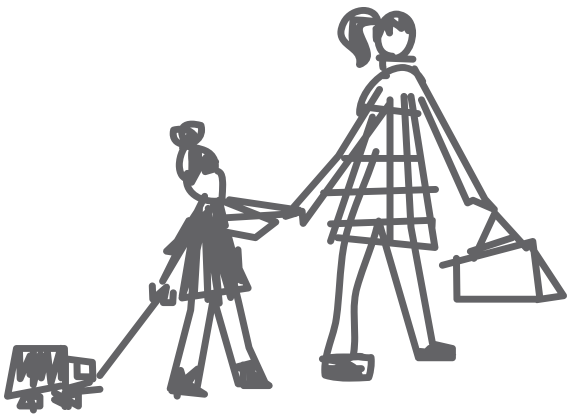
- Collaboratively develop the vision and mission of the innovation platform. It should set long term, shared goals that clarfy the role and existence of the platform. The vision should inspire the local innovation ecosystem to embark upon an innovation mindset;
- An overall assessment of the partners that can and will be partners in the Innovation Platform. Based on the synergies between partners' expertise, a mission plan and funding strategy for the long term of the Innovation Platform can be developed;
- The initial mission business models can be explored for specific services that can be delivered through the Innovation Platform.

Setting the governance structure of the Innovation Platform

- The organisational model that facilitates the creation of an agile local network that is easy to adapt to supporting the request that the Innovation Platform gets from partners within it network and outside. The governance structure of the platform includes the organisational structure, role and task of the core group, roles and tasks of participants, rules for accession and for departure, rules for engagement, rules for decision making and for conflict resolution;
- Creation of an entity and formalisation of the partnership. What kind of entity is chosen and how the partnership is formalised, however, is tailored to specific needs and contexts. Innovation Platforms might be organised as a formal structure between the city council's departments (urban planning, mobility and energy), the local innovation ecosystem, and citizens, but could also be shaped for instance as a less formal, collaborative network.

Building a consistent project portfolio

- Key to the success of an Innovation Platform delivering services is that the platform as a whole has a legitimised role in the urban innovation ecosystem. Its added value should be recognised. An important factor here is focus and consistency. Innovation Platforms, though flexible and adaptive over time, should be clear in their focus and what they can deliver.
- Projects that run within the platform should potentially benefit from the partnership as a whole. The risk of regular business-to-business projects should be avoided.
- The platform should be recognised as state-of-the-art player in addressing innovation opportunities and knowledge gaps.
- Open access to lessons learned from each project that the Innovation Platform embarks upon.



Further reading

- CIC Global (n.d.), **cicglobal.squarespace.com**
- Design Kit, by IDEO.org, **designkit.org**
- Venture Café Rotterdam (n.d.), **venturecaferotterdam.org**
- Kiruna Sustainability Center, **kiruna.se/ksc**
- Innovation Platform Borås, **innovationsplattformboras.se**

Examples of global/national platforms (Network of platforms)

The platforms focus on the connection between local initiatives and global levels, catalysing local innovation ecosystems, providing access to expertise and resources.

European Network of Living Labs

The European Network of Living Labs (ENoLL) is the international federation of benchmarked Living Labs in Europe and worldwide. ENoLL provides facilities (such as digital and face-to-face learning labs) for co-creation, user engagement, test, and experimentation to target innovation in energy, media, mobility, healthcare, agri-food, etc. As such, ENoLL is well placed to act as a platform for best practices, exchange, learning, and support, and Living Lab international project development. The platform is a non-profit organisation for all Living Labs in Europe (benchmarked Living Labs as well as fee-paying members).
https://enoll.org/network/living-labs/

Finland (Six Cities)

The primary objective of the Six City Strategy is to strengthen Finland's competitiveness by using the country's six largest cities as innovation development and experimentation environments. Six City Strategy focuses on three areas: 1) open innovation platforms, 2) open data and interfaces, and 3) open participation and customership. The innovation platforms are used to create and test new services and products in real-world conditions. The data generated and opened up by the cities serve as the raw material for developing new services. Finally, open participation and customership invites the entire urban community to design and develop service innovations.
https://6aika.fi/in-english

The local networking platform

The local network platform establishes networks among local stakeholders by providing an arena for presentation and discussion of projects and hot topics.

future.hamburg

The digital platform future.Hamburg is the point of contact to learn about the innovation landscape of the metropolitan region of Hamburg and to inspire and enable local networking opportunities and establishes new contacts between frontiers, targeting communication about new projects (ideas). The platform is administrated by a marketing company and is open for all innovation actors in the metropolitan region of Hamburg.
https://future.hamburg/

Amsterdam Smart City

Amsterdam Smart City is an open collective that brings citizens, businesses, knowledge institutions, and public authorities together to shape the city of the future. The main aims are to share knowledge and give actors the opportunity to present their topics and receive feedback/new ideas in order to develop innovative solutions for metropolitan issues of a social, economic, and ecological nature.
The platform consists of both individual and institutional actors.
https://amsterdamsmartcity.com/

The supportive/financing platform

The supportive/financing platform uses financial resources/incentives to support projects and focuses on support using different forms of funding such as venture capital for upscaling and diffusion.

Innovation Platform Gothenburg (2013-2015)

Innovation Platform Gothenburg was a temporary UIP established for transdisciplinary project development and implementation outside established city structures. The local projects were linked with international cooperation and other platforms. Furthermore, a number of PhD projects have been supported.
https://www.mistraurbanfutures.org/en/project/innovation-platform-gothenburg

Funding London

Funding London bridges the economic gap for early stage businesses and enables real opportunities for sustainable growth. The catalyst function is to manage European and UK funding for entrepreneurs. The platform is managed by an intermediary between the Mayor of London and contracted fund managers. It addresses very early stage technology and science businesses.
https://fundinglondon.co.uk/

The collaborative and strategic platform

The collaborative and strategic platform brings together different actors/stakeholders (cross-sectoral, cross-administrative, and quadruple-helix) to implement the strategic goals of the city.

Future by Lund

Future by Lund is an innovation platform focussing on sustainability and attractiveness of the city. This is a meeting place for new and established participants. Different test environments are created (focus is on six challenges that will shape sustainable smart cities).
http://futurebylund.se/

STUNS (Uppsala)

STUNS brings together decision-makers to discuss common concerns at the interface between universities, business, and the public sector. The focus lies on paving the way for growth and competitiveness in the Uppsala region through initiatives, activities, and projects in strategic focus areas.
http://www.stuns.se/en/in-english/

Urban Innovation Vienna

Urban Innovation Vienna aims at developing innovative strategies for overcoming the diverse and complex agendas of a city through dialogue with decision makers from politics, administration, and businesses, and to lead international discourse on the subject.
http://www.urbaninnovation.at/de/about

Forum Virium Helsinki

The Forum Virium Helsinki can be characterised as an innovation intermediation platform that develops needs-based and internationally competitive digital services in collaboration with private businesses, public organisations, and citizens in the Helsinki metropolitan area. It especially tries to build bridges between the public and private sectors, including the national coordination of 'Six Cities Strategy'.
https://forumvirium.fi/en/introduction

The co-creation platform

The co-creation platforms provide a specific location (space and lab) to support a creative, experimental milieu for bottom-up initiatives.

Evolab Graz

Fostering open innovation; organization of competitions, user involvement
https://www.evolaris.net/de/press/evolaris-launcht-open-innovation-plattform-evolab/

Raumpioniere Wien

Platform for Crowdfunding, Crowdsourcing, and Crowdengaging. The platform supports actors in finding supporters of their ideas in terms of finances and know-how as well as organisational issues.
https://www.raumpioniere.at/

Urban Mill Innovation Platform (Espoo)

The Urban Mill Innovation Platform defines itself as a 'Co-working and Co-creation platform prototype for urban innovations'. It brings together different research, innovation, business, and community actors involved in ICT-enabled urban services development.

Situated at the heart of the Espoo Innovation Garden at Aalto University, Urban Mill is a public-private-people partnership run by a private company, Järvelin Design Ltd, and the City of Espoo as one of the main partners.
https://urbanmillblog.files.wordpress.com/2018/04/urban-mill-presentation-icy-2018-04-04.pdf

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