

Foresight for Cities

Handbook

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Executive Summary

The level of complexity that cities all over the world are facing today is staggering. Challenges ranging from climate crisis, through mass migration, depopulation and overpopulation of entire regions, shrinking budgets to emerging technologies influencing the way in which people participate in co-creating their cities. In order to make responsible, strategic decisions about the future of their cities, mayors and city councilors need access to actionable intelligence that not only discusses major trends and technologies, but also gathers key insights from the local community. Only such combination of inputs allows decision-makers to discuss alternative futures for their cities. Participatory urban foresight makes it possible to generate future scenarios that should constitute the base for such deliberation and in the end allow a cross-stakeholder agreement on the vision and mission of their city and its public administration.

“Foresight for cities. Handbook.” describes participatory urban foresight as an analytical method designed for the abovementioned purpose. First, a brief definition of the method is introduced together with a broader context analysis. Second, the authors identify key users of the method, analyzing potential benefits it can bring them. This part is followed by an overview of foresight approaches as well as a step-by-step process description allowing the reader to get a grasp of how one should proceed in order to generate city’s future scenarios together with the citizens. In the next part of this document, the authors analyse potential, limitations and benefits that can be generated by applying the foresight methodology to city strategic planning and citizen engagement. Finally, a set of recommendations based on international experiences in applying this method in urban setting is listed.

This document is meant as a brief and clear guide to participatory urban foresight, dedicated to local leaders and activists, who wish to broaden the scope of discussion about the future of their city and get all key stakeholders not only in visioning but also in the implementation of the pursuant strategies and policies.

1. What is urban foresighting?

City foresight is the science of thinking about the future of a city. Our cities are extraordinarily dynamic and the future is always uncertain, so anyone looking to lead cities towards more prosperous futures must inevitably engage with many complex choices. City foresight provides these leaders with a set of intellectual, practical and political tools to enhance their decision-making capabilities.

In practice, it is a set of methods allowing decision-makers to:

- uncover new ideas for development;
- challenge existing assumptions about the future, especially the notion that there is only one, singular future that is unavoidable;
- explore the interactions between future trends and the forces driving change and how they can be influenced by policies and investments.

City foresight does not require complicated or expensive projects. Instead, it makes use of clear and straightforward activities that give high value for relatively low cost.

Cities change and their structure becomes hybrid, and their function and role indicate that cities are evolving and offering new challenges and opportunities to their residents and managers. The new model of economics functioning of its residents (gig economy, on-demand economy), re-industrialization, growing inequality, climate crisis, health concerns, and other challenges that impact day-to-day living, show how significantly citizens' expectations of their city and its management change. At this point, urban development is shifting to more decentralized and participatory forms, leading to the ideal of sustainable development. In this process, it is necessary to engage experts and all key stakeholders in order to overcome the challenges with collaborative efforts.

The essence of a modern city is defined as a shared idea that drives particular city. It creates a platform for all citizens to identify with and to develop their potential. This theory emphasizes the importance of the local context and the individual nature of the city. It exposes the fact that – contrary to the popular practice – one cannot successfully take a policy, program or a solution from one city and implement it in another one without adjusting it to the local needs. As observed during multiple urban foresights, similar or even identical sets of data can be interpreted in very different ways by residents of different cities. What is more, it is often difficult to predict the nature of these variations based solely on the socio-economic makeup of the city. Any solution or policy that is being implemented locally requires public support in order to be effective. Foresight can help better grasp the collective imagination of city's residents and thus better prepare policies and investments.

In light of such challenges, the authorities must find complex ways to engage both with the expert community as well as with their citizens to best define problems at hand and identify factors that might influence their evolution. Decision-makers must be able to identify key issues, trends and technologies that influence sustainable development of their city. Urban foresight is one of the mechanisms for preparing municipal employees for these challenges. In cities around the world, foresight has proven to be an effective tool for both grasping and shaping public imagination and for defining a structured and comprehensive route to sustainable urban development. When analyzing the specific methods used in urban foresight, it is important to clearly distinguish between the expert-based methods (involving experts

only) and participatory approaches involving all social mechanisms, including the creative approach, along with analytical and data-driven research.

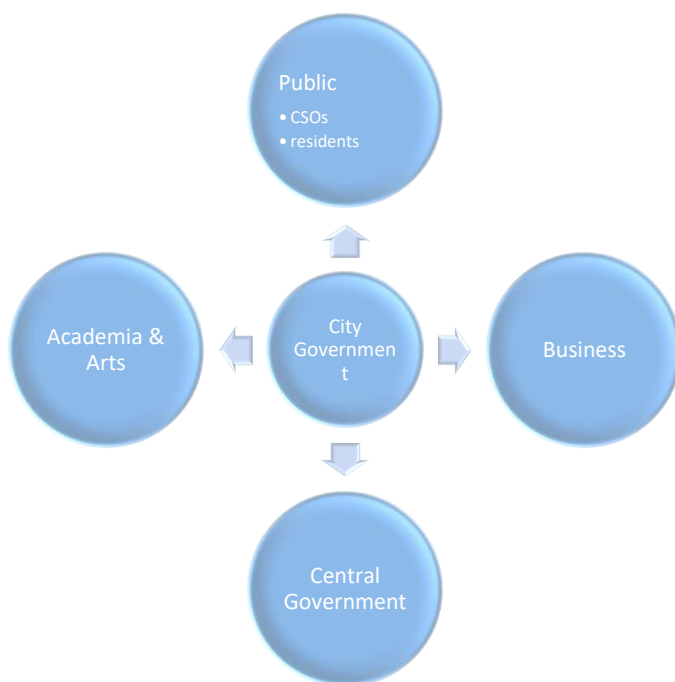
The true value of a participatory approach is in the two-way communication throughout the process. Both sides - government officials and citizens - can gather important insights, deepen their knowledge about city's functioning and identify strategic partners for the most desired projects and investments. Moreover, such democratic and open mechanisms for outlining possible urban futures provide the basis for systemic change, which feeds long-term vision-oriented discussions into the public debate.

The advantage of participatory urban foresight over other future-related research is that it combined hard data, horizon scanning and trend analysis with local community's insights and agency. It is a process that seeks to create a shared vision of the future based on alternative data-based future scenarios; a vision that stakeholders will support by the actions they take today. In this way, the urban foresight is not to predict the future, it is to create the future.

2. Who should be engaged in urban foresight?

Gathering evidence about the future of cities is no longer in the hands of a single institutional body. Many actors are responsible for delivering city-level services, including businesses, universities and other non-public bodies, which means they are also collecting valuable data about the city's functioning. Diverse participation in anticipating city's future is therefore essential for ensuring timely and effective access to a broad range of knowledge. City governments are likely to remain best placed to coordinate foresight activities and broker all necessary relationships. Even though the most active actors already communicate through various channels, urban foresight can help develop new and more effective mechanisms for cross-sector collaboration.

City foresight engages many stakeholder groups and can stimulate new forms of relationships and insight



3. Implementing Urban Foresight

3.1 Five types of thinking in urban foresight ⁱ



Visioning activities provide intelligence for setting the direction of future change. This involves articulating aspirations, constructing visions, identifying value-based goals, etc. These can be explorative or normative and underpin the desired directions and outcomes of long-term development. Their purpose is to provide context throughout the foresight journey.



Analysing activities integrate intelligence about trends, drivers of change, assets, constraints and opportunities. This can involve considering parameters that affect future supply and demand for services, including for example: physical or environmental constraints, demographic forecasts, infrastructure capacity, technological development and financial resources. Their purpose is to identify signals/key items of potential futures.



Designing activities explore future scenarios by engaging in creative imagination and construction of alternative trajectories for future change based on insights and analyses collected in the preceding stages of the process.



Testing activities test these options. This involves considering risk by exploring whether different options will cope with a range of possible future outcomes. Their purpose is to check the robustness of different designs.



Assembling activities help map key levers for affecting change. This involves considering delivery models, technological innovation, financing, institutional reform, skills investment, regulatory development, etc. Their purpose is to integrate intelligence about envisioned directions of change with intelligence from analysis, design and testing of potential futures into coherent and plausible roadmaps.

The different modes of thinking about the future are complementary and can be engaged iteratively, feeding back insights into each other.

3.2 Urban Foresight Methods and Instruments

Urban Foresight uses methods such as horizon scanning, trend analysis, interviewing, Delphi surveys, workshops, desk research.

Foresight uses combination of both quantitative and qualitative data to obtain and process valuable information.

Quantitative methods

This group corresponds to methods which carry out future predictions based on mathematical and statistical data modeling. These methods require numerical data about past and present situations, and use highly complex or simple algorithms to forecast the future of any phenomenon. These methods have considerable advantages (e.g. ability to examine rates and scales of change). They also have notable disadvantages (limited grasp of many important social and political variables, dangers of spurious precision, problems of communicating with less numerate audiences, etc.). Quantitative methods are particularly effective when there is continuity between past, present and future situations, when information is available about past and present conditions, and when short and medium-term projections are required.

Qualitative methods

Under these methods, future predictions are based on experience, intuitions and opinions of experts who possess reliable information and expertise about a specific issue. Subjectivity is their main characteristic. Methods for working systematically with qualitative data are becoming more widely available with the development of Information Technology—tools for “mind mapping” and “conversation analysis”, etc.— which can also be helpful devices for facilitating meetings and workshops with non-expert audiences. Qualitative methods are particularly appropriate when there are no past or present data, when structural changes are taking place and historical series are no longer valid, when there is great uncertainty, and when long-term predictions are required.

4. From intuitive logic to horizon scanning - a method

One of the most common approaches to formulating an urban foresight is to use trend analysis and horizon scanning early in the process and create future scenarios based on this research. Horizon scanning is a technique for detecting early signs of potentially important events through a systematic study of potential opportunities and threats.

Scenarios based on intuitive logic can support horizon scanning. In the case of cities, scanning the horizon can be a very complex process and its full implications can be difficult to understand. Launching the process by developing scenarios shows what a particular horizon scanning exercise can be focused on. Involving local community in developing scenarios and scanning the horizon will enhance the process and may yield better results for self-government strategic projects.

Process phases

Trend analysis: This preparatory phase focuses on data collection and analysis. Based on the initial desk research, the foresight team composes a list of trends and technologies that might have significant influence on the future of the city. These trends are presented to various groups of stakeholders in order to choose a short list of trends (2-3) that will be the context the rest of the process.

Intuitive logic: The initial phase of the process focuses on providing a factual basis for municipal employees, which will provide them with insight into the future and allow them to prepare initial scenarios for the city based on so called *intuitive logic*.

Outcome: Four scenarios of city development by 2050 will be prepared.

Public Consultations (Intuitive Logic + Public Consultations): The second phase involves introducing the elaborated scenarios to the local community and modifying them according to citizens' opinions; Also identifying partners who want to spend their time and resources on finding the most effective scenario for the city.

Outcome: Creating a multi-sectoral working group.

Horizon Scanning (Intuitive Logic + Public Consultations + Horizon Scanning): At the final, recurring phase, which is ideally practiced daily in public administration, the Horizon Scanning begins with all sectoral partners.

Result: Horizontal scanning database.

Based on the trends and technologies discussed at the workshop, the group should identify the issues that are most important to the development of the city. Participants should formulate their vision of what the city looks like in 2050 and answer questions in five categories: social, technological, environmental, economic and political.

The scenarios developed are live stories that should ideally become the subject of systematic public discussions and assessment based on the horizon scanning.

The main benefits of this approach

1. Local opportunities and external expertise. It is important to bring external expert knowledge to municipal structures, but it is even more important to equip city officials with the tools needed to operate independently with the local community.

2. Create the foundation for network development and constant feedback. The foresight process should be continuous, so that residents have a chance to share their insights at all times.
3. Open the governance process. Involving the local community in urban foresight formation is the best practice in urban development and inclusive decision-making process.
4. Equipping decision-makers with knowledge about long-term opportunities and challenges that might require years of investment or policy preparations in order to either make most of them or limit their backlash.

Scenarios

Frame

Two things are important for scenario planning practice:

1. Identify key internal issues affecting the future of the city.
2. External Factor Analysis.

In the working process, the group should identify trends/technologies that they believe are critical to the development of the city (both in positive and negative way). These might cover the following: tourism; industriality; green city; etc.

After defining the fields, they are prioritized, and the two selected trends (presented in their extremes) form the framework for future scenarios.

Consultations and horizon scanning

Why do we need consultations?

Even though any given trend in various cities might look very similarly in terms of numbers and key characteristics, its impact on local development as well as how it might be addressed by both public administration and residents can vary drastically. For two cities similar in size and geographic location, for example, climate-related migrations can be interpreted in two very distinct ways and while one city might carry the narrative of migrants having a positive impact on their local communities, the other city might be hostile to them. Again, numbers are the same, it is perception that is going to differ. That is why making sure that the local community voices their opinions and shares insights related to a set of key trends is a vital step in order to achieve reliable results. This is also true for the work that will follow foresight activities and that will be related to the implementation of solutions and policies that emerged throughout the process.

Consultations with young people

One of the major challenges in the regions is migration of young people to large cities or other countries, which is also related to the lack of their involvement in the current affairs in their hometowns. That is why engaging with young people in the early stages of consultations is critical.

After elaborating on the final scenarios, **horizon scanning** is initiated. Working groups are introduced to horizontal scan approaches, techniques, identifies and evaluates resources.

5. Urban Foresight – Potential, Limitations and Benefits

5.1 Potential

The development of alternative urban futures scenarios can contribute to urban policy in the following dimensions:

5.1.1 Foresights as the context for urban development plans

Urban futures scenarios can serve as broader context to urban development plans and strategies. Because of their long-term orientation, foresights can offer basic strategic insights for urban policy planning in the long run. Depending on the choice of foresight methods applied, insights can be either qualitative (e.g. “green” or “creative” city), quantitative (e.g. expected number of new companies over the next decade) or both.

5.1.2 Foresight as a basis for urban mission statements

Foresight exercises can provide strategic intelligence in multiple domains of urban policy and across them, allowing public administration to lead towards the established joint vision. In such case, these strategic insights should be codified in city’s mission statement and translate into further projects and policies.

5.1.3 Foresight as a platform for citizen engagement

Active involvement of citizens and other stakeholders in shaping the urban vision ensures a high degree of participation in the proces of implementing new urban policies and programmes.

Citizen participation can be ensured by providing an open platform for the discussion of both individual trends and future scenarios. Citizens are given an opportunity to comment on and engage in potential future developments. Such dialogue helps visualize commonly shared ideas about the future of the city. A similar approach can be used to support decision-making in strategic areas of urban development. In such a case, the dialogues around the scenarios show the public acceptance / attitude towards strategic policy options in the long run.

This aspect of foresight is particularly important in cities, which have a history of drastic changes in development approaches whenever new administration was elected. Having a broader context that also has strong public backing allows the city to develop in a more sustainable and coherent way.

5.2 Limitations

5.2.1 General availability of data

Datasets on urban level may not be available at all and so the process might require large scale surveys or data collection projects. Surveys and data collection projects are costly and do in addition only cover a single observation in time.

5.2.2 Transforming longterm vision into strategic action

While foresights are very effective and powerful in generating a shared vision and common understanding of a possible or desired future, they tend to fall short in being real input to strategic action. Several potential barriers can be identified for this phenomenon:

Election cycles

Long time horizons (i.e. 10 to 25 years) go well beyond any policy or election cycle. Thus, urban policy actors have difficulties and limited motivation to take up future challenges or opportunities that may lay ahead way past their term.

Uncertainty and fuzzyness

Long time horizons do also lead to rather broad pictures lacking the necessary granularity of information that may be needed for strategic plans. In addition, the likelihood of certain future developments might be questionable – forming no solid basis for concrete, bold decisions.

Complexity of scenarios

Urban foresights are often covering complex interactions between physical, environmental, socio-economic and cultural dimensions of a specific territory. Therefore, assigning ownership of potential strategic actions might be difficult and may require involvement of several administrative bodies and stakeholders. In addition, certain strategy options might be only available at a regional or subregional level and thus beyond the sphere of influence of urban policy makers.

5.3 Benefits of city foresight ⁱⁱ

Exposing local strengths	Creative exploration of long-term aspirations and policy options brings fresh perspectives on unique local assets, as well as the ways by which these can merge into a distinct future city brand and identity.
Enhancing resilience	Collaborative verification of assumptions about the future change leads to early identification of risks and builds relationships that enhance cities' capacities to cope with change and disruption.
Strategy refinement	Increased clarity and alignment of place-specific aspirations, local assets, opportunities, and enhanced awareness of risks yield more robust strategic 'roadmaps' towards the future.
Investor confidence	Pro-active city leadership identifying future trajectories fosters external confidence in city's capabilities to manage its assets and risk. Compelling narratives about city's long-term prospects further enhance its attractiveness to businesses and skilled workers.
Strategic partnerships	Joint identification of future business and development opportunities across wider geographies builds coalitions and leads to greater data sharing and closer alignment of urban policies across the region and beyond.
Tackling challenges	The future provides a safe space for engaging with persistent, politically charged challenges
Civic engagement	Creative engagement with the public administration generates invaluable insights and hidden resources, as well as provides opportunities to build trust and enhance civic pride.

6. Recommendations

1. **Consider the long-term future in shorter-term city decision making.** Cities can display leadership by establishing foresight processes that demonstrate to national government their individual and collective capability for driving the development of the UK's system of cities. These processes can be particularly valuable for identifying unique local factors that affect the city's long-term performance. They should be complementary to statutory planning, drawing on a broader range of evidence sources and with more distant time horizons. ⁱⁱⁱ
2. **Invest in mutual communication with the local community.** Future scenarios should never be the end of the road, but the beginning of it. Ideally, urban vision will become a daily activity of the self-government. Its effectiveness requires openness of process. Scenarios should be systematically reviewed and made topic of public discussion. Regular two-way communication in the implementation process ensures proper feedback from the community and involves different stakeholders in collaborative multi-sectoral processes. The communication platform should provide the space and opportunity for bottom-up action.
3. **Establish platforms for city foresight.** Cities can establish mechanisms for collaborations between local, city-regional and national partners to explore the future. Establishing such networks can provide timely access to valuable knowledge, and lead to wider ownership of policy issues and better capabilities to manage future risk. Local universities can contribute significantly to such networks.
4. **Re-create your vision.** Future scenarios will not work until key milestones are identified and measured. When choosing an optimal view of the city, all phases must be defined by an indicator. It is important for city managers to be able to say that what they are doing will produce the desired results if external trends and issues do not affect the chosen direction. Evaluation should be undertaken together with stakeholders so that the action plan can be jointly developed and provided with resources to achieve the objectives.
5. **Data collection and analysis.** Data collection is important for understanding the challenges on the one hand and the progress made on the other. Often quality data at the municipal level is simply unavailable. This is why it is important to collect and analyze data as quickly as possible. Since most data must be created from scratch, it is wise to collect and publish it in accordance with international standards for open data.
6. **Share lessons learnt about the practice and impact of city foresight.** Cities can learn from each other about the strengths and weaknesses of different approaches to engaging with the long-term future. Exchanging insights will provide evidence of the value added by different approaches in different contexts, and should make city foresight more effective.

7. Conclusion

The methods and tools of foresight offer new and versatile approaches to urban planning and development programmes. The experience shows that urban foresight is able to deliver long term urban visions on multidimensional scale. It provides thereby either complementary information two

urban development plans or inputs to urban mission statements. Urban foresights are very effective in providing room for participation of stakeholders and citizens in such undertakings.

Nevertheless urban foresights are no panacea for long range planning issues at the level of cities and towns. As the anecdotal evidence of the two presentend case studies shows, do foresights have also specific limitations. Firstly, they may suffer from problems with data availability or quality of existing datasets, secondly urban foresights – but this holds also true for technology foresights do suffer from strong barriers on the road form long term vision to strategic action.^{iv}

^{i i} Government Office for Science. (2016) Future of Cities: Foresight for Cities. A resource for policy-makers. Available at: shorturl.at/eipBX

ⁱⁱ Government Office for Science. (2016) Future of Cities: Foresight for Cities. A resource for policy-makers. Available at: shorturl.at/eipBX

ⁱⁱⁱ Government Office for Science. (2016) Future of Cities: Foresight for Cities. A resource for policy-makers. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/516443/gs-16-5-future-cities-foresight-for-cities.pdf

^{iv} From Urban Foresight to Urban Futures? Potentials and Limitations of Forward Looking Activities for Integrated Urban Development (2011). Available at: shorturl.at/oFLOX