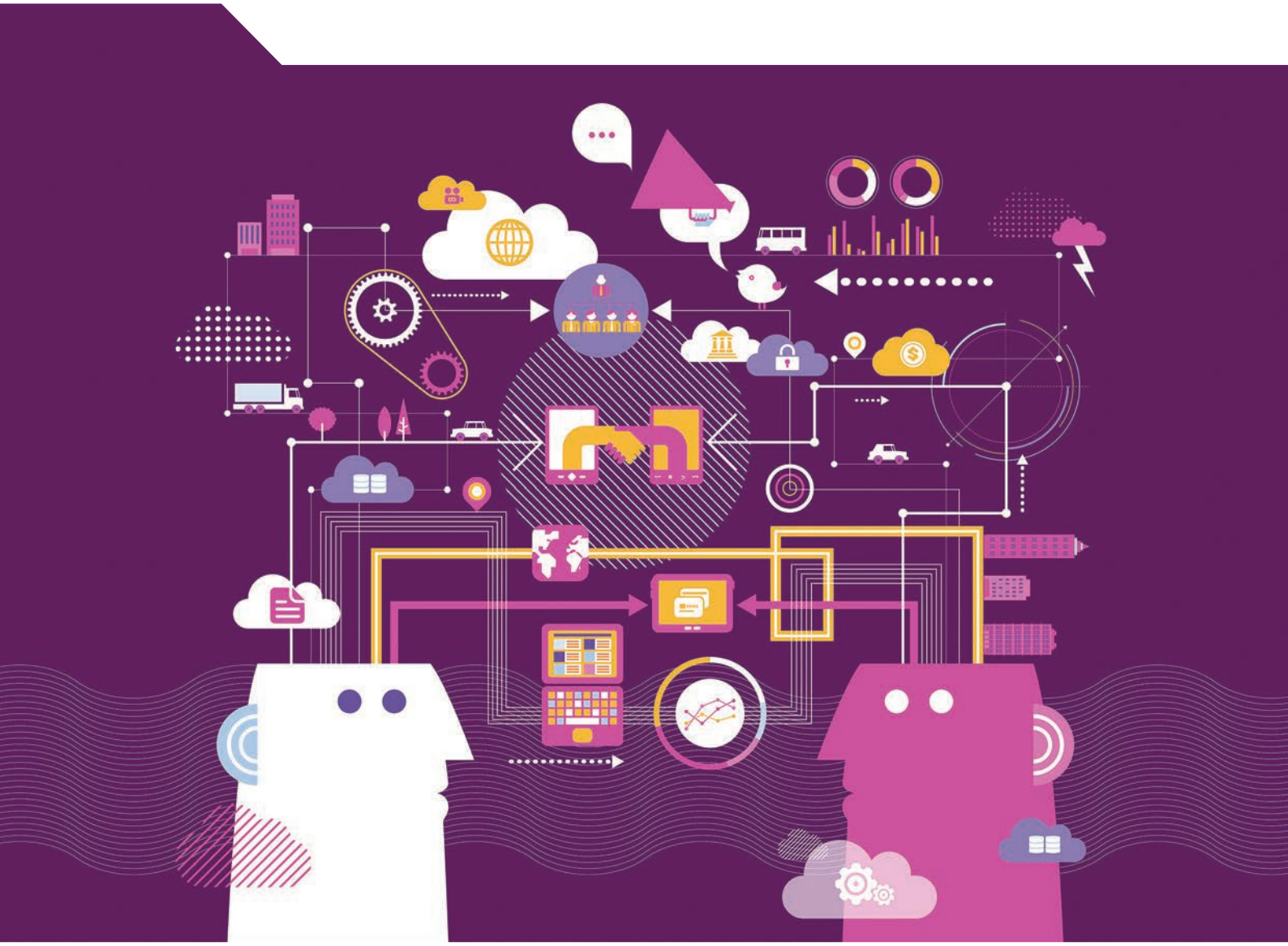
Enhancing Innovation Capacity in City Government



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Foreword

Across the world, cities, where most people work and live, are displaying tremendous innovation potential in local public administrations, exploring new and different solutions to achieve goals related to residents' well-being. These efforts ultimately target poverty reduction, public health outcomes, expanded education access, tailored services for senior citizens, new revenue generation, local economic productivity and competitiveness, among others. Municipalities are taking a number of steps to reach their goals using local public sector innovation, through staffing – creating roles such as chief innovation officers and establishing innovation teams, developing innovation goals, strategies and plans to direct their new efforts. They also establish partnerships with academia, the private sector, and other institutions such as international organisations and philanthropic foundations, to improve their data analysis and evidence-based decision-making.

In terms of city operations and functions, creating an innovation team and engaging in innovation activities is still a relatively new approach. In many countries cities are still building up their knowledge base to co-ordinate and assemble the right organisational, financial and human resource infrastructure to support their efforts. There is therefore still a lot to learn and understand about innovation capacity, especially at the local level. Building on their respective long-standing cooperation with Mayors and local governments, the OECD and Bloomberg Philanthropies have joined forces over a year and a half long policy dialogue to learn from practical experience of close to one hundred Mayors, city officials, and stakeholders from around the world in boosting local public sector innovation.

The report *Enhancing Innovation Capacity in City Government* seeks to bring better understanding of the different methods and forms in which local public sector innovation capacity is taking shape within city administrations. Building on a survey carried out by the OECD and Bloomberg Philanthropies across 89 cities from around the world and of all sizes with populations of under 50,000 to over 9 million (Annex C), as well as extensive and thorough literature review from leading work on public sector innovation, the report provides evidence and guidance on how cities build innovation capacity to respond to residents' present and future needs. Divided in three sections, the report proposes an analytical framework and empirical approach for understanding innovation capacity in cities, and assesses city governments innovation goals, strategies, funding, staffing and structure, data-use and outcomes monitoring and evaluation. It concludes with a checklist for action on considerations for enhancing innovation capacity in city governments. To provide a deeper understanding of the range of capacity configurations within cities, individual city snapshot profiles were created providing systematic overview of the capacity inputs in cities.

Amongst others, the report shows that establishing a culture of innovation whereby municipal staff are encouraged to experiment, take risks and learn from failure is key enabler and driver to innovation; and so are external partnerships that can supplement or help develop internal capacity, for example, to assist in piloting and evaluating a new programme. Finally, committed and supportive leadership can signal the priority level for

the city's innovation efforts throughout the administration and encourage engagement at all levels.

The findings of this report were presented and discussed with different constituencies, including representatives of national and local governments and experts, in many instances, such as: the Citylab Detroit (October 2018), the OECD Working Party for Urban Policy (November 2018) and the Fourth Meeting of OECD Champion Mayors for Inclusive Growth (March 2019). The results also benefited from direct consultation with city innovation staff, including the review and fact-checking of the individual city snapshots created for all respondents based on their survey responses. This ensured the information accurately reflected the city's innovation framework. Additionally, a draft of the report was shared with respondents before it was finalised, giving cities the opportunity to comment and provide feedback throughout the policy dialogue process.

By combining data, policy expertise and dialogue with city leaders and innovation officers, the OECD and Bloomberg Philanthropies undertook the task to assess why, how and where cities are developing their capacity to innovate. This report has led to a deeper comprehension of the different factors that assist in innovation in city governments, as well as an understanding of what local administrations are trying to achieve through their innovation efforts. This project has been conceived in two phases, the first phase consisted of developing a comprehensive survey and analytical framework to understand innovation capacity in cities, the second phase will dive deeper into data use in cities, and seeks to understand how the role of data and innovation capacity efforts and investments in cities impact resident well-being outcomes.

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The policy dialogue and preparation of the report were co-ordinated by Sena Segbedzi, Co-ordinator of the OECD Champion Mayors for Inclusive Growth Initiative under the supervision of Aziza Akhmouch, Head of the Cities, Urban Policies and Sustainable Development Division, OECD. The report was drafted by a core OECD team composed of Oscar Huerta Melchor (main author), Natalia Altman, Laura Valdés, Vu Tran and Sam Whittlesey. Special thanks are herein conveyed to Soo-Jin Kim for her valuable comments during the drafting process, as well as to Marissa Plouin for her initial co-ordination and launch of the project, and Hyung-Tae Kim and Stefan Norgaard for the design, extension and processing of the survey. Thanks are also conveyed to Marco Daglio, Debra Mountford and Oriana Romano (OECD) for their comments on earlier drafts.

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The OECD Secretariat and Bloomberg Philanthropies are also grateful to the representatives from 89 cities (see Annex C) across the world for participating in the data collection exercise, the webinar discussion and the review of earlier versions of this report.

The report was approved by the OECD Regional Development Committee (RDPC) through written procedure on 4 October 2019 under the cote [CFE/RDPC/URB(2019)9]. It was edited and formatted by Jennifer Allain, and Pilar Philip and François Iglesias prepared the manuscript for publication.

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Executive summary

Cities are reinventing themselves to adapt and respond to evolving demographic, economic, environmental, social and technological changes around the world. City governments are ushering in a new era of local public sector innovation that promotes experimentation and flexibility within the administration, while at the same time seeking to engage residents in new ways and promoting well-being.

The report is a study on how municipalities are innovating, why they are innovating, and what innovation is allowing them to do. 89 cities across the world responded to the OECD/Bloomberg Survey on Innovation Capacity. The Survey captured five dimensions of innovation capacity: innovation strategy and approaches, staffing and structure of innovation work, data used to support innovation work, funding dedicated to innovation, and the outcomes monitored and evaluated based on the city's objectives. This report synthesises the findings from the survey and combines it with a literature review to unpack what helps build this capacity in the local public sector and what it helps cities accomplish.

To promote a deeper understanding of innovation capacity, an analytical framework was developed as part of this report. Innovation capacity refers to the human, financial, and institutional resources and skills that can catalyse, implement and advance cutting-edge, collaborative, long-term and bottom-up problem solving. Capacity of city governments to innovate is based on three interdependent building blocks, i.) organisational arrangements, referring to the formal and informal institutional structures that can foster or hinder innovation, ii) data management capability, related to a city's ability to harness, manage, and use data effectively, and iii) openness to partnership, the ability for the city to work with different stakeholders. These building blocks start to provide a comprehensive view of the internal and external factors that allow city governments to innovate.

Key findings and recommendations from the five dimensions of innovation capacity are herein summarised.

1. Innovation strategy and approaches

A dedicated strategy encourages cities to stimulate their long-term capacity to innovate by publicly stating those goals so that the city can be held accountable to achieving them. More than half of the cities that responded to the survey (55%) have formal innovation goals, while just under half (49%) have a formal innovation strategy. A formal strategy to pursue innovation in the local public sector helps expose cities to innovation-related tools and activities. Cities with a formal innovation strategy:

- reported to be more experienced with activities that foster innovation than those without a formal strategy;
- claim to be more open to taking risks and pursing organisational change, whereas those without a strategy are more focused on data-driven analytics and rethinking the city's approach to financing and partnership; and

- tend to approach innovation more holistically, ensuring that every sector or area in the administration is brought into the effort to build innovation.

2. Staffing and structure

Cities rank leadership commitment as the most important determinant of successful innovation work. Politicians and managers can send strong messages about the importance of innovation and the relevance of creating a culture that values, rewards and recognises innovation. Key findings from across surveyed cities include:

- Almost 80% of respondent cities reported that political and managerial leadership is an essential component for supporting innovation capacity.
- The emergence of innovation teams in local public administration is a relatively new approach, as only 21% of such teams have existed for more than five years.
- Around half of innovation teams sit in the mayor's or city manager's office, and nearly 30% have their own department.
- Of city respondents with innovation teams, 82% have a project manager as the key profile. Community engagement staff is the next most common profile (60%).
- Investing in the capacity and capability of local public servants helps cities to create a climate for new ideas.
- Indeed, 70% of responding cities considered human resource management as important in improving their capacity and capability to innovate by upskilling the workforce and bringing in people with required knowledge and skills.
- Survey results also show that cities that hired innovation staff with skills such as human-centred design proved much more effective than their counterparts at engaging residents in new ways.

3. Data used to support innovation work

Cities that ensure the production, free flow, and utilisation of data and knowledge across the public sector are better positioned to improve their innovation capacity. When a city provides greater access to and makes better use of public data it contributes to economic development and growth. Data production and dissemination allow the creation of value and enable the creation of new solutions to urban challenges. Survey results showed that:

- For 85% of surveyed cities, data play a significant or somewhat significant role in innovation decision making and policy making.
- Cities produce a large amount of data, and these data have the potential to improve the way cities operate. However, data availability by policy sector remains uneven.
- Cities collect more data on areas such as transport (64%), policing and law enforcement (57%), land use/zoning (51%), and housing (47%).
- Data on areas such as social welfare and inclusion (32%), blight (29%), tourism (29%) and culture (20%) are less extensive.

- Of the cities that claimed data play a key role in their innovation work, 75% have established partnerships with academia and think tanks to improve data management.

4. Resources and funding

Cities that set up a specific financing framework for innovation have a strong foundation for the implementation of new ideas. Sound sources of funding allow cities to conduct research, prototype or test new ideas, implement ideas on a larger scale, and recruit highly qualified staff. Survey results showed that:

- 80% of respondent cities have specific funding to support innovation capacity. The vast majority (94%) have ring-fenced resources from the municipal budget to fund part of their innovation work;
- Cities also rely on external sources (non-profit foundations and philanthropies), and, to a lesser extent, on private sector investments;
- Most funding (79%) goes directly toward specific projects that are considered innovative;
- City investment in innovation is both relatively new and marginal in comparison to other areas where cities invest (i.e. health, transport, urban infrastructure).

5. Outcomes: Evaluation and results

Cities that evaluate the impact of their innovation work are better positioned to scale up innovative projects that offer a better return on investment of taxpayers' dollars. In particular:

- Cities that consistently evaluate the results of their innovation work have, across the board, greater familiarity with innovation than cities that lack procedural assessments;
- However, the large majority of cities only assess some elements of their innovation strategy and consider it too early to determine their success.
- Only 16% of cities with formal innovation goals conduct a comprehensive and systematic evaluation of the impacts of their innovation strategy.
- Factors that limit the evaluation of innovation strategies in cities include lack of financial resources, technical capacity and methodological instruments.
- Proper evaluation and monitoring practices strengthen accountability to citizens and donors.
- Monitoring and evaluation of innovation work remains a key area for development across local governments.

The results of the survey revealed that there are a variety of ways that cities are growing their capacity to innovate. This report proposes a number of policy recommendations in a **Checklist for Action** intended to assist cities in their quest to strengthen their innovation capacity. The recommendations put forward in this Checklist cover the five dimensions of innovation capacity addressed in the survey and highlight the need for cities to:

- Formulate a strategy that gives long-term direction to innovation work;
- Install innovation units/teams within the administration;
- Invest in the capacity and capability of public servants;
- Promote a culture of taking reasonable risks and learning from failure;
- Ensure the production, free flow, and utilisation of data and knowledge across the public sector to support decision making;
- Create collaborative partnerships with external actors to strengthen data management capability;
- Set up a specific financing framework for supporting innovation work; and
- Conduct an impact evaluation of innovation projects/strategies.

1. Understanding innovation in cities

Innovation is high on the agenda of national and local governments. This chapter will first conduct a revision of literature to discuss why governments innovate and why this is relevant for cities. In addition, the chapter will move to define public sector innovation and innovation capacity as the two central concepts in this report. Finally, the chapter will propose an analytical framework for innovation capacity in cities and offer a clustering of cities that provide an empirical approach of how cities innovate.

Innovation and innovation capacity

In recent history, there has been a marked interest in understanding how to transform the public sector to deliver better services**.** In the 1980s through the 1990s, the New Public Management movement introduced the idea that governments apply a performance management approach to public administration to improve efficiency. Since then, efficiency and innovation efforts have extended from core public administrative functions to the delivery of public services. Governments have introduced new ways of providing public services (e.g. co-production) and creating new services and functions (e.g. e-government). Although research on public sector innovation has grown in recent decades, the bulk of literature has focused on innovation in the private sector (Hartley, 2005[1]; Moore, 2005[2]). Theories, data and tools to analyse public sector innovation through empirical analysis are still lacking. Nevertheless, in general, the public sector is now regarded as being more dynamic and innovative than before (Setnikar Cankar and Petkovsek, 2013[3]).

There has been a wide debate on why governments focus on innovation as an enabler (Savitz, 2011[4]; Muzyka and Hodgson, 2018[5]; Kahin and Hill, 2010[6]) and as a producer (Walker, 2006[7]; De Vries, Tummers and Bekkers, 2016[8]; Sørensen and Torfing, 2011[9]; OECD, 2017[10]; OECD, 2015[11]; Makin, 2017[12]). As an enabler, governments adopt innovation policies designed to spur innovative activity in every sector of the economy. Thus, governments enhance innovation in a wide variety of areas, for instance, by investing in education (skills and lifelong learning), promoting social well-being (i.e. social services for the elderly, homeless, youth, etc.), encouraging scientific research and development, developing infrastructure (i.e. transport-oriented developments), promoting climate change adaptation, eliminating regulatory barriers on business investments, and reinforcing well-functioning markets. As a producer, government seeks to stir up its innovation capacity. The background is that governments face a multiplicity of intersecting challenges that strain public resources and demand innovative new solutions. Key among these global challenges are the emergence of fiscal austerity crises, demographic shifts and the threat of climate change. Austerity measures implemented by many countries in the wake of the 2008 financial crisis created turmoil for rigid bureaucracies that relied upon traditional methods of working. Budgetary and staffing reductions, without simultaneous new working methods, resulted in less efficient delivery of public services, particularly in governments lacking collaboration between their various departments.

What is innovation?

Innovation is a complex concept to define. For the purposes of this report "[a]n innovation is a new or improved product or process (or combination thereof) that differs significantly from the unit's previous products or processes and that has been made available to potential users (products) or brought to use by the unit (process)" (OECD/Eurostat, 2018, p. 20[13])**.**

Presently, innovation is too often narrowly and mistakenly associated with technological or digital-driven inputs and solutions. However, innovation is as much about culture, leadership, finance, governance and people as it is about technology and data. Innovation activities also vary greatly in their nature among firms and sectors. For instance, whereas innovation in the private sector relies on activities to ensure competitiveness in new markets, innovation in the public sector seeks to create value and impact by responding to public interest, addressing citizens' basic needs and enhancing efficiency of public services (Hartley, 2005[1]). The goal of this report is to understand how municipalities can enhance their ability to intentionally and consistently generate "innovative solutions" and ensure

they have the necessary resources to deliver them. The main purpose is not to define or discuss public sector innovation per se; however, experts have provided some categorisations and classifications that are helpful in understanding innovation in its many forms and the types of inputs especially in the public sector, that can enhance innovation. Box 1.1 provides some examples of typologies, categories and classifications developed by different organisations and researchers. They are presented here to show that innovation in the public sector can be understood and analysed in different ways and from different perspectives.

Box 1.1. Examples of typologies, categories and classifications of innovation across the literature

Defining innovation through typologies

Across the literature, significant efforts have been made to define innovation mostly through typologies. One of the most commonly used typologies is the one proposed in the *Oslo Manual of Innovation* that contains four types of innovation:

1. Product innovations – the introduction of a new or significantly improved service or product.
2. Process innovations – the implementation of a new or significantly improved production or delivery method.
3. Marketing innovations – the implementation of a new marketing method.
4. Organisational innovations – the implementation of a new organisational method related to a business practice, workplace organisation or external relations (OECD/Eurostat, 2005[14]).

Innovation classifications: According to service delivery, organisational components and ancillary circumstances

- Service delivery innovations may be new services or service delivery methods introduced to meet the needs of citizens or facilitate adaptation to new circumstances.
- Organisational innovations involve changing relationships among members and reforming rules, procedures and structures, communication and exchange among members as well as between the environment and organisational members (Walker, 2006[7]).
- Ancillary innovations depend on factors outside the organisation's control. This refers to the city administration working across boundaries with other service providers, users or other public agencies and therefore their successful implementation relies largely on others.

Innovation arranged by three broad categories: Core, transformational, adjacent approaches

- Core innovation – digitisation or optimisation of existing traditional public services or products.

- Transformational innovation – creates completely new solutions and whole new operating models to face key problems in an entirely new way.
- Adjacent innovation – involves using the organisation's core strengths and capabilities to create new products or services. Businesses and citizens participate in the process.

Sources: Walker, R.M. (2006[7]), "Innovation type and diffusion: an empirical analysis of local government", https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.1467-9299.2006.00004.x; Byrne, A. et al. (2018[15]), *Transforming the Public Sector: Delivering Successful Public Sector Transformation through Innovation*, https://www2.deloitte.com/content/dam/Deloitte/ie/Documents/PublicSector/GovLab_Transforming%20the%20public%20sector_spreads.pdf.

What is public sector innovation?

Cities are reinventing themselves and their systems to adapt and respond to their evolving contexts. Across the world, municipalities develop policies, programmes and services to address changes in demographic, cultural, social, economic and environmental needs. For this reason, city governments are ushering in a new era of local public sector innovation to respond to these challenges and opportunities. Successful public sector innovation requires the creation of an ecosystem that promotes experimentation and flexibility and takes into account the social needs of citizens.

This report defines public sector innovation, based on the OECD Observatory of Public Sector Innovation (OPSI) and the *Oslo Manual of Innovation*, as any service or product that has the following characteristics:

- novelty, as innovations introduce new approaches in the context where they are adopted
- implementation, as innovations must be put into practice
- impact, as innovations aim at better public results (OECD, 2015[11]; OECD/Eurostat, 2005[14]).

OPSI suggests three factors that may explain public sector innovation: 1) capability to innovate, determined by resources, skills, knowledge and space to innovate; 2) motivation to innovate, shaped by incentives, values, leadership and behaviour; and 3) opportunity to innovate, enabling conditions that depend on financial autonomy, creativity and collaboration (OECD, 2017[10]).

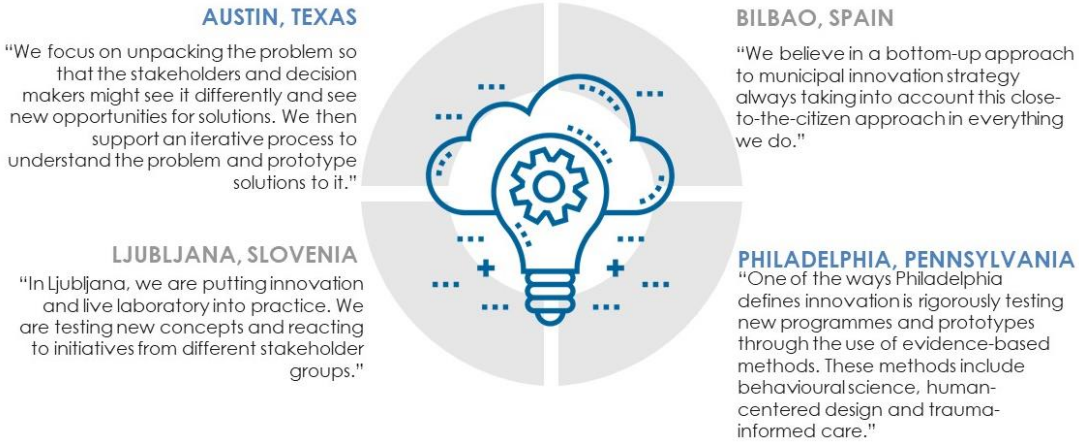
In March 2019, the OECD along with 60 mayors' offices around the world developed and endorsed the OECD Champion Mayors Initiative's Athens Road Map on Innovation for Inclusive Growth in Cities[1] (see Annex B). Exploring public sector, social and technological innovation, the Athens Road Map charts the way forward for local governments to structure these innovations to deliver better well-being outcomes for residents. The Athens Road Map shows that local governments can promote public sector innovation in a wide range of government activities. More importantly, it shows that public sector innovation is not just about adopting technological changes, but the adoption of new processes, practices and approaches to enhance the potential of the public administration to deliver goods and services tailored to citizens' needs.

What is innovation capacity?

As mentioned previously, the intention of this report to is better understand how and why cities innovate, what helps empower them to innovate successfully, and how they can evaluate their capacity to innovate.

Cities use different approaches and definitions of innovation capacity. Figure 1.1 shows some definitions and approaches reported by respondents of the OECD/Bloomberg Survey on Innovation Capacity in Cities 2018. These definitions reveal that there is no widely shared definition of innovation across cities.

Figure 1.1. Select city definitions of innovation capacity



Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

In order to facilitate comparisons across cities with different context and approaches, for this report, a summary definition of innovation capacity was created. Innovation capacity is defined as the human, financial and institutional resources and skills that can catalyse, implement and advance cutting-edge, collaborative and bottom-up problem solving. Institutional resources may include capacity in areas such as data analytics, resident engagement, human-centred design, and inter-sectoral and inter-department collaboration.

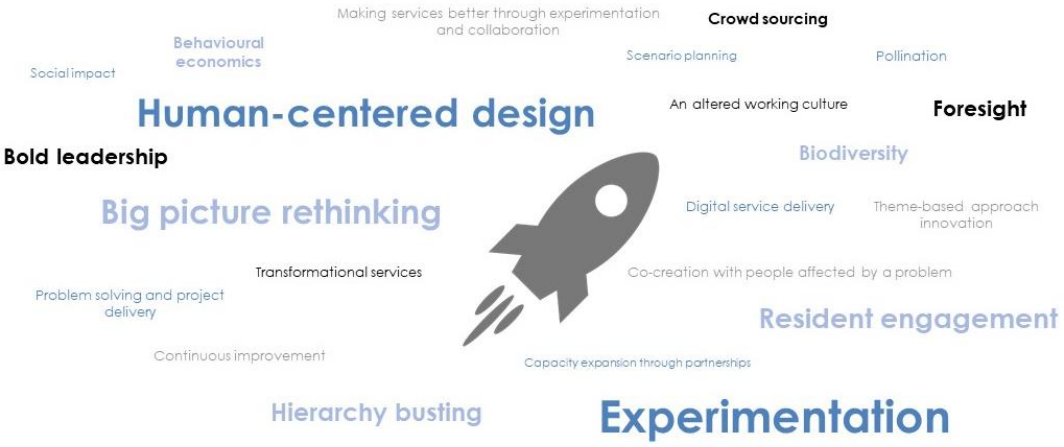
There are also a large number of terms that cities associate with innovation (Figure 1.2). According to the results of the OECD/Bloomberg Survey on Innovation Capacity in Cities, the most common ones are experimentation, human-centred design, data analytics and big-picture thinking.

Why do governments focus on innovation?

Why do governments innovate?

Innovation offers a way for cities to face growing budgetary pressures and satisfy new societal demands. Meeting economic and social needs in the face of capacity shortages for public service delivery – such as the lack of professional and experienced staff, financial limitations and the volume and complexity of legislation (Lues, 2016[16]) – will require that cities foster innovation to improve the efficiency and effectiveness of the administration of public resources (Rivera León, Simmonds and Roman, 2012[17]).

Figure 1.2. Most common terms associated with innovation in cities



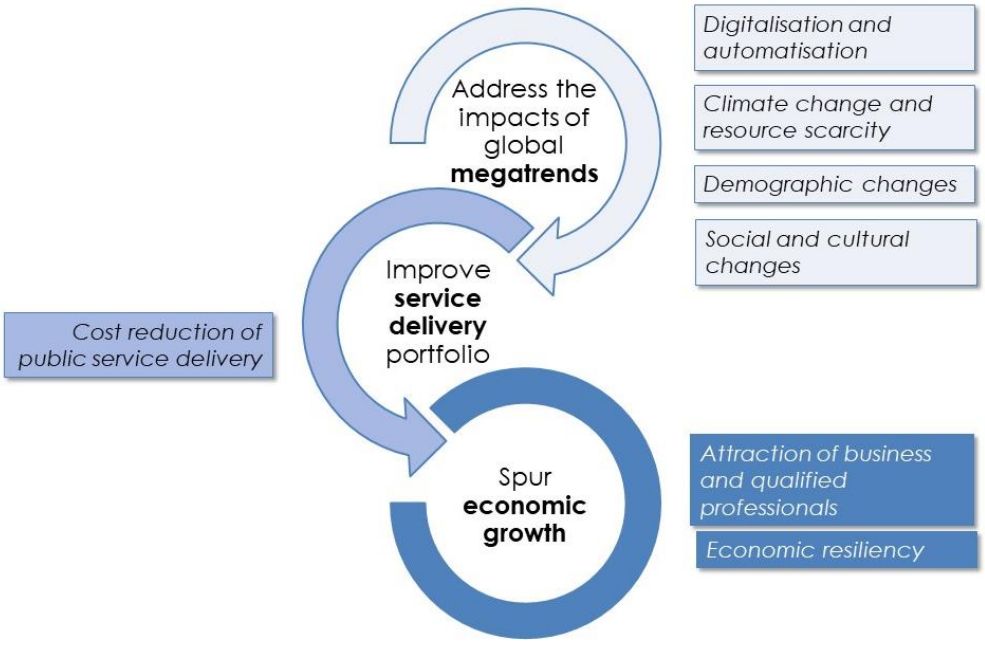
Source: OECD/Bloomberg Survey of Innovation Capacity in Cities 2018.

Research has found three main drivers of public sector innovation: 1) political ambition (election mandates, pressure by politicians, leadership changes); 2) public demand (citizens demand better and more public services at lower costs); and 3) tightening resources (budget reductions or inadequate funding sources) (Rivera León, Simmonds and Roman, 2012[17]). Other drivers include social and cultural changes, which are normally linked to different visions of socio-economic development. In addition to these drivers, increasingly, the impacts of global megatrends will be felt in cities, and they will have to be innovative to address them. These include: digitalisation, automation and other technological changes; demographic changes (i.e. urbanisation, ageing and migration); and climate change and resource scarcity (OECD, 2019[18]). Cities are associated with heavy resource dependencies and challenges of resource depletion as well as growing socio-economic disparity (Dixon et al., 2018[19]). Innovation may help cities adapt to changing circumstances, for instance the need to promote green growth to face climate change; or adapt to the changing needs of citizens, particularly those with ageing populations or high levels of migration. In this context, cities have to build their innovation capacity, internally within the local public administration, as innovation is a key driver of public services reform and high-impact policy making.

Innovation can create the conditions for enhancing competitiveness and productivity, particularly when coupled with the range of responsibilities and influence of the public sector. Therefore public sector innovation has the potential to boost public value and citizen well-being (Evans Agolla, 2012[20]).

The financial crisis of 2008 had a strong impact on people's lives and livelihoods, and progress in addressing well-being disparities has been slow (OECD, 2011[21]). This, coupled with the growing consensus that the disconnect between economic growth and social welfare has increased inequality, have prompted governments to react. As a result, governments are promoting inclusive growth to improve living standards and share the benefits of growth more evenly across society in order to create a virtuous and sustainable future. Consequently, cities are exploring innovative solutions to achieve goals regarding poverty reduction, public health, education access, gender equality, public service delivery and environmental protection, among others. These efforts aim to impact residents' lives.

Figure 1.3. Drivers of innovation in cities



The Athens Road Map on Innovation for Inclusive Growth in Cities (see Annex B) offers some key components of local public sector management, such as city governance, financial mechanisms, public procurement and civic engagement, that can be organised to increase productivity, ensure the use of the right and most effective resources, and enhance public value. To achieve more inclusive growth, the Athens Road Map emphasises the need to respond to the interest of local residents, seek openness and transparency of government, assess trade-offs and risks, and engage citizens to avoid creating greater divides and unsustainable outcomes. For instance, the move to use digital technologies to provide public services may be a way of increasing productivity and reducing costs for the public sector, but certain communities may not have the skills and access to technology to benefit from these improvements. Thus, the OECD recommends that governments have a range of risk management and governance policies in place to mitigate unintended consequences.

Much of the existing research regarding public sector innovation in response to these challenges has focused primarily on national governments. Yet subnational governments have an increasingly important role to play in meeting ongoing global challenges. With sufficient investments in capacity building, local governments can create innovative new solutions to global challenges. In general, the public sector is now regarded as being more dynamic and innovative than before (Setnikar Cankar and Petkovsek, 2013[3]).

How do governments innovate?

Governments can innovate in the way public policies are designed, and the tools they use for policy making, implementation and evaluation. “Innovation can also bring change to the governance of public services, by improving their level of accountability and transparency, their performance, or the user involvement and satisfaction level” (Rivera León, Simmonds and Roman, 2012, p. 5[17]). In addition, governments can innovate from policy development to programme delivery, from regulatory approaches to service delivery, and from the introduction of new forms of management to the adoption of new budgeting tools or human resource management.

The literature shows that public sector innovation is wide ranging: From innovations that produce socio-economic value to innovations that improve the production of products and services or ensure better resident experience. Research suggests that integrating multiple types of innovation can have the strongest positive impact on governments' performance. For example, the public sector may not only optimise the use of resources, processes and knowledge for service delivery, but it can improve, at the same time, services through simplification and better support.

What factors have led to successful public sector innovation in the past?

Uptake of innovation requires intentionality marked by encouraging leadership, institutional capacity and competences, dedicated resources, and a supportive environment that includes a receptive organisational culture. According to the experience of the Australian public sector, innovation needs to be fostered, recognised and rewarded throughout the organisation to be sustained and embraced (ANAO, 2009[22]). Some pre-conditions for public sector innovation that appear consistently in the literature and government reports are discussed below.

Leadership and organisational culture. Politicians and managers can send strong messages about the importance of innovation and the relevance of creating a culture that values, rewards and recognises innovation. It is also important that people at all levels of the organisational structure see the role they play in being an innovative administration (OECD, 2009[23]; Glor, 2001[24]). It is essential to establish a culture that learns from experience, particularly from mistakes, as a way to reinforce an innovation culture (ANAO, 2009[22]). Traditional command-and-control leadership styles must evolve, to allow for experimentation and new approaches. Public sector leaders need to develop a new set of competencies to cultivate trust and inclusion, build agile teams, and establish a platform for ideas generation (Byrne et al., 2018[15]).

Adaptive and reactive structures. City environments are constantly changing; therefore it is important cities are able to read, understand, respond and adapt to these changes. Organisations need to strategically allocate their available resources based on the clear understanding of their changing environment (Rivera León, Simmonds and Roman, 2012[17]; Glor, 2001[24]). Part of this effort requires developing the capacity to collect, analyse, and use qualitative and quantitative data and information as evidence for decision making (ANAO, 2009[22]).

Active and engaged networks. To obtain more effective results from innovation initiatives, it is often necessary to look beyond the portfolio of an organisation to see if joint initiatives with others can lead to better results (ANAO, 2009[22]). Networks to diffuse innovation are essential ingredients for success as links to other organisations may provide access to the skills, support and means to put an idea into practice and, at the same time, may connect actors at different levels of government (OECD, 2009[23]).

Organisational capability and innovative capacity. Organisations need to build capability to support innovation. Since substantive innovation is unlikely to happen by chance, it has to be planned for and resourced. This involves considering the direct costs (i.e. training, information systems and equipment) and opportunity costs (i.e. time). This also requires empowering staff to take risks and think outside the box, ensuring the necessary financial sources and skill sets to support and drive innovation, and having strategies for risk management and regulations that support a culture of innovation (OECD, 2017[10]; Hartley, 2005[1]).

For example, a clear innovation strategy is the basis for successful innovation; it must be adaptive, clear and with a compelling narrative (Byrne et al., 2018[15]). Since innovation is about change, having a change management strategy may prove useful in ensuring the smooth implementation of projects that affect or change public servants' routines. It is important to present the innovation to public servants as an opportunity, rather than a challenge (Glor, 2001[24]).

Conducive governance arrangements. Factors that may stimulate innovation in the public sector are: citizens' participation in the political process and government accountability; political stability; regulatory quality; rule of law and control of corruption; and an open policy formulation process (Rivera León, Simmonds and Roman, 2012[17]). For innovation to occur, it is important there is consensus that the current models or ways of service delivery are underperforming (OECD, 2009[23]).

Incentives and rewards system. Innovation is encouraged when there are recognition and rewards (OECD, 2017[10]). These are also powerful mechanisms to maintain a culture of innovation through peer recognition, disseminating knowledge of new initiatives and fostering adaptation (ANAO, 2009[22]).

What is limiting cities' innovation capacity?

Organisational and cultural barriers

Cities face a number of structural and institutional obstacles to enhance their innovation capacity. Some of them are inherent to the public sector and others come from the external environment (Box 1.2). The context in which cities operate is not always one that supports innovation and risk taking. In many cases, "[o]verstretched staff, tightening budgets and increasing demand on services leaves little room for experimentation, new thinking or trying new approaches" (Makin, 2017, p. 8[12]) .

Box 1.2. Inherent and external barriers to innovation in cities

Inherent barriers to innovation in the local public sector include:

- political leaders who do not publicly promote innovation
- lack of workplace incentives for employees to think creatively and take risks
- fiscal austerity and limited budgets for experimental programmes and policies
- fragmented approaches to complex challenges due to overly specialised workplace silos
- red tape, inertia and a risk-averse culture in the public sector
- inability to synthesise and process data holistically across administrative departments
- limited institutional resources for citizens' engagement throughout the policy cycle
- a culture that prioritises the expertise of professionals to the exclusion of other sources of insight, including research and residents themselves
- challenges with procuring innovative solutions

- fear of experimentation in the local public sector due to political and social scrutiny, and failure
- lack of mechanisms and structures for facilitating learning and good practice exchange across the local public administration.

External barriers to innovation in the local public sector include:

- Lack of trust in the public sector and its leadership and apprehension to use public money to experiment.
- Underfunding of core capacities within local government, including innovation capacities like data analysis, citizen engagement and project management.
- Shortages in knowledge and skills in the wider workforce market. Information asymmetries between private sector suppliers of new technology and municipalities.
- Public resistance to change, in particular to the ways and types of public services that are delivered.
- Lack of technological solutions for problems at hand.
- National and regional government restrictions and mandates.

Sources: Wagner, B. and N. Fain (2017[25]), "Regulatory influences on innovation in the public sector: The role of regulatory regimes", https://doi.org/10.1080/14719037.2017.1350282; Setnikar Cankar, S. and V. Petkovsek (2013[3]), "Private and public sector innovation and the importance of cross-sector collaboration", https://doi.org/10.19030/jabr.v29i6.8197; Sørensen, E. and J. Torfing (2011[9]), "Enhancing collaborative innovation in the public sector", https://doi.org/10.1177/0095399711418768; Walker, R.M. (2006[7]), "Innovation type and diffusion: An empirical analysis of local government", https://doi.org/10.1111/j.1467-9299.2006.00004.x; Makin, C. (2017[12]), *Adapting for the Future: Promoting Innovation in City Government*; OECD (2017[10]), *Fostering Innovation in the Public Sector*, https://dx.doi.org/10.1787/9789264270879-en.

In general, public organisations are cautious about implementing reforms that may result in changes to the status quo. Organisational culture, norms and communication practices may influence the level of creativeness and innovation. Some of the factors that tend to constrain cities' innovation capacity are:

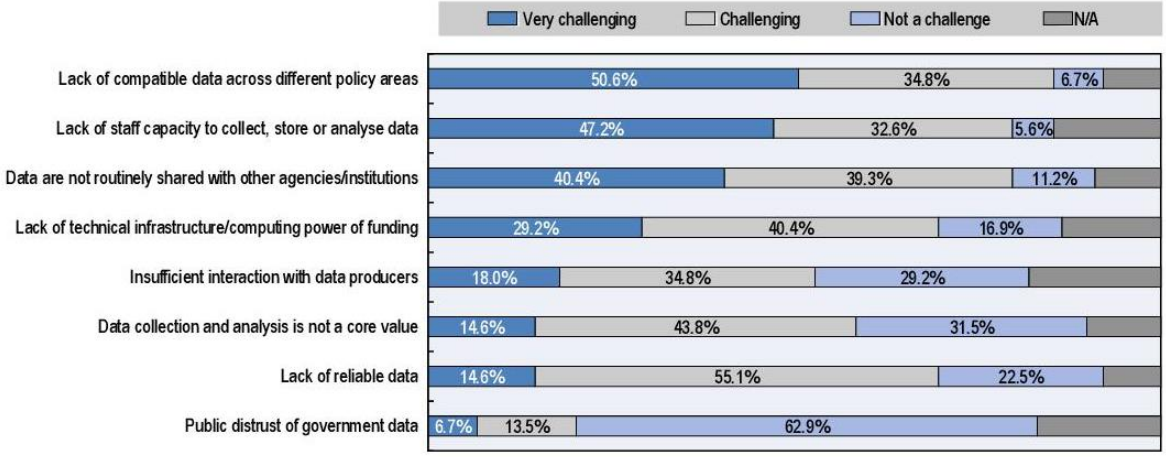
- **Fragmentation and policy silos.** Municipal public administrations are primarily designed with the goal of delivering public services (e.g. water, housing, electricity, transport). Given the complexity of orchestrating these complex urban systems, municipal bureaucracies tend to delegate tasks through specialised silos of agencies managing a given policy sector. This technical specialisation can result in a lack of communication between employees in distinct policy fields and a reluctance to innovate because of the unforeseen repercussions (OECD, 2017[10]). In some cities there may also be a lack of structures and mechanisms that promote organisational learning and the diffusion of good practices (Setnikar Cankar and Petkovsek, 2013[3]).

- **Politics.** Mayors and other political leaders might be reluctant to take risks that could negatively reflect on their public image, instead preferring to stick with the status quo. "Within city governments, risk aversion is often associated with fear of bad press, damage to public perception and criticism levelled as wasting public funds" (Makin, 2017, p. 17[12]). Local authorities are commonly unwilling to admit that a particular initiative (or experiment) did not have the intended effects. The risk aversion of municipal politicians points to a more general feature of the public sector that makes innovation uniquely difficult: The need to ensure a constant provision of direct public services, coupled with the pressure to be in a position for re-election. Previously adopted mind sets may make it hard for city staff to unlearn the old logic and can limit leaders' and managers' ability to try new innovative approaches (Setnikar Cankar and Petkovsek, 2013[3]).
- **Rules and procedures.** Cities struggle to find the right balance between risk mitigation, resource preservation and flexibility when designing municipal rules and regulations to promote innovation. Rules and procedures in the local public sector and their interpretation may restrict innovation capacity. A poor understanding of regulations by local public officials may also weaken innovation capacity. Failing to comply with the rules, policies and frameworks may be risky, and can outweigh the rewards from trying to innovate. This has been the conclusion of the Australian government, which pointed out that the poor understanding of the regulation by public officials may lead to the perception that they constitute a barrier to innovation (OECD, 2017[10]; Australian Government, 2010[26]). Compliance with training is key to streamline the procedural implementation of regulations, which should be designed with the goal of empowering civil servants.
- **Resource gaps.** Inadequate financial mechanisms, support and the resulting shortages of the relevant skills and competences may weaken cities' innovation capacity. The public sector does not have at its disposal the same economic incentives to innovate that exist in the private sector, for instance, patents and workplace bonuses, and the direct translation to profits. However, the lack of adequate financing may, in some special cases, be both a challenge and an opportunity to trigger innovation, as cities have to look for innovative solutions. In such cases it is also important that other tools and resources that support innovation within the city administration are in place.
- **Administrative/bureaucratic barriers.** Administrative organisation and operation could be an obstacle to innovation. Some of the organisational norms that can deter innovation in public sector include: red tape, human resource management practices that do not incentivise innovation, risk aversion, a silo approach to policy development, hierarchical structures, and an inadequately trained and motivated workforce. This lack of positive incentives can be compounded by negative repercussions and barriers, in the form of rigid legal and bureaucratic regulations (Sørensen and Torfing, 2011[9]). Excessive bureaucracy also tends to hinder the dynamism of the creative process needed to innovate. Many cities have endeavoured to foster innovation through red-tape reduction strategies or targeted exemptions for specific innovative programmes. However, the research of the OECD OPSI indicates that such strategies may not prove highly effective in and of themselves (OECD, 2017[10]).

Limited data management capacity

The results of the OECD/Bloomberg Survey on Innovation Capacity in Cities suggest that relatively few cities feel that their innovation capacity is limited by a lack of data (Figure 1.4). Rather, the key barriers limiting municipal innovation is the data management capacity. This refers to the lack of compatible data across policy areas and the limited capacity to use data to improve municipal policy making and implementation. This suggests that having access to data (i.e. on mobility patterns to inform land-use planning and transport) is not enough to innovate; cities need the technical knowledge to make the data useful to them. Taken together, these results indicate that building a strong data capacity has, perhaps, more to do with the culture and skills of employees than merely technical infrastructure. This is the case with big data, where the problem lies in the exploitation of the data itself (Martin et al., n.d.[27]). Collecting, cleaning, integrating and analysing big data for innovation and policy making could be particularly demanding even for large, relatively rich cities. That is probably why some cities partner with external specialised organisations in data management. For example, in early 2019, Kansas City, Kansas's city council passed a citywide ordinance codifying data and performance reporting. This achievement stemmed from assistance provided by Bloomberg Philanthropies' "What Works Cities Program" to help the city build and sustain its data and evidence practices.

Figure 1.4. Factors preventing the optimisation of data to support innovation goals



Notes: Out of 89 surveyed cities, 85 reported that data play a role in the city's innovation efforts and decision making. The figure represents responses provided by these 85 cities to Question 4.4 "Which factors are the most challenging and prevent your municipality from optimising its use of data to support innovation goals?". Surveyed cities were asked to rank each factor on a scale from 1 to 3 (1 = Very challenging, 2 = Challenging, 3 = Not a challenge, and N/A for "don't know").
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

While the uptake of big data in today's cities opens new possibilities for city governments, the way that data are harvested, analysed and engaged depends largely on political considerations. Without civil servants capable of contextualising their data and standardised criteria for data treatment across agencies, the information itself may be less useful to policy makers and to academics and private sector partners.

Limited access to new technological developments

As part of efforts to innovate, cities are increasingly looking to emerging technologies and the Internet of Things (IoT) for ways to streamline and dramatically improve services to citizens. Yet these efforts are not without challenges, e.g. information asymmetries between private sector actors and public officials that may make strong partnerships challenging, civil liberties concerns given the potential for surveillance, and cyber security risks. As cities look to integrate different sources of data regarding many different urban systems (transportation, housing, energy, etc.) into holistic platforms, it becomes increasingly possible to monitor the intimate details of constituents' daily lives. Automating certain public sector functions while keeping people's data private is extremely important and takes deep policy considerations. The new wave of digitalisation of public functions means municipalities may struggle to balance their desire to improve the efficiency of service delivery with the right to privacy. This challenge is exacerbated by the increase of data gathered through the IoT.[2] Other issues include data ownership and the tension between pursuing transparency through open data initiatives and the desire to ensure public safety and anonymity (Kitchin, 2014[28]). Issues such as how citizens know the data being collected, used, monitored and what will be done with it in the future need to be resolved if cities are going to have flexibility for data collection and use it for innovative projects (Newman, 2019[29]).

Limited participation and support from citizens

Some of the obstacles that may prevent citizen engagement for innovation in the local public service are:

- **Institutional barriers.** Municipalities that lack robust institutional channels for collaborative engagement with constituents throughout the policy-making cycle will inevitably fail to establish meaningful constituent engagement. Moreover, even if there are institutional venues and channels for co-production of public policies, without adequate communication infrastructure in place, municipalities risk engaging with only a limited number of their constituents (Voorberg, Bekkers and Tummers, 2015[30]).
- **Cultural barriers.** Civil servants and politicians may find it challenging finding constructive and fruitful ways to collaborate with residents for a number of reasons. Resident responses may be unpredictable and difficult to manage due to the resources available. Moreover, elected officials may be hesitant to turn over authority to residents, for instance of co-production, if they have limited ability to fully deliver the output, further disappointing residents. The attitudes of public officials often exemplify a broader cultural barrier to social innovation. Conventional public sector relations with constituents construe citizens as passive recipients of public services rather than equals capable of exerting their agency. The belief that engaging with constituents represents additional complexities rather than an asset can reduce collaborative institutions into mere formalities (Voorberg, Bekkers and Tummers, 2015[30]).
- **Lack of incentives.** The lack of clearly articulated incentives for municipal administrators to pursue co-production initiatives can also be a challenge to innovation. Municipalities may be reluctant to invest financial and human resources in collaborative projects without clear indications of the returns they will receive for their investment in the form of outputs and outcomes (Gascó, 2017[31]).

- **Constituent barriers.** A variety of social factors might inhibit constituents themselves from engaging with their municipal government to innovate. Individuals without a positive opinion of their municipal government will have little motivation to co-operate. Trust in local governments is important for the success of many projects, policies, programmes and regulations that depend on citizens' co-operation and compliance. In some cases, citizens' expectations could grow at a faster pace than government actions, which could have a negative impact on trust in government. According to OECD data, less than half of OECD countries' citizens (42%) have trust in their national government (OECD, 2017[32]).[3] Educational attainment also determines an individual's likelihood of taking part in collaborative projects, as well as determining their capacity to engage with the complex nuances of the public administration. Moreover, constituents will be dissuaded from taking part in collaborative initiatives if they do not have a sense of ownership of the work. Projects that fail to demonstrate how they respond directly to constituents' needs will likely fail to generate enthusiasm (Voorberg, Bekkers and Tummers, 2015[30]). Finally, it may be argued that citizens have busy lives and the opportunities to engage are often offered without careful planning that makes it easier for them to participate. For instance, in Busan, only the elderly and housewives are able to attend events organised by the City Council, as the rest of the population is at school or work (OECD, 2019[33]).

Methodology and survey insights

Drawing from the findings of the OECD/Bloomberg Survey on Innovation Capacity in Cities (see Annex A) carried out across 89 cities in OECD and non-OECD countries (see Annex C), this report explores how cities around the world are developing their capacity to innovate and to what extent this innovation improves resident outcomes. The results of the survey provide a deeper understanding of why cities are innovating; how they're developing their capacity to innovate; what is driving and enabling innovation in cities; and to what extent such innovation is generating better outcomes for residents, business and the community. This report synthesises the findings of the survey and enables cities to learn more about how other cities are approaching innovation. The information provided by the cities in the survey is complemented by a literature review and additional research on official city websites to gather information on initiatives cities are undertaking to enhance their capacity to innovate. The analytical framework developed in this report seeks to provide the building blocks to analyse key factors that influence innovation capacity in cities.

Box 1.3. OECD/Bloomberg Survey on Innovation Capacity in Cities

Cities surveyed

A total of 89 cities from 21 OECD member countries and 3 non-OECD countries responded to the survey. The entire list of respondents, as well as the survey itself, can be found in Annex C. An invitation to complete the survey was sent to municipal staff of 139 cities of various different sizes and geographic locations.

A wide range of cities are represented among the survey results. The majority (64%) of responses came from North American cities. A further 18% of respondents were European cities. Eight cities in Latin America also responded, along with three Asian cities, three

cities from the Middle East and North Africa region, and one city from both Oceania and sub-Saharan Africa. These cities cover a wide range of population sizes – from Chelsea Massachusetts (United States), which is home to 40 000 residents, all the way to São Paulo, Brazil, with 12 million. The largest share (one-third) of responding cities are mid-sized, with populations between 200 000 and 500 000.

Figure 1.5. OECD/Bloomberg Survey of Innovation Capacity in Cities 2018 in a nutshell

Methodology

The OECD/Bloomberg Survey on Innovation Capacity in Cities was pilot-tested before it was launched in July 2018 in co-operation with Bloomberg Philanthropies, who sent out the survey to the cities selected.

The cities targeted were those belonging to the OECD Champion Mayors for Inclusive Growth Initiative and select cities in Bloomberg Philanthropies' Government Innovation programme. For the majority of cities, the key city staff person in charge of innovation, with roles such as chief innovation officer, director of innovation, and chief data and performance officers were identified and sent the survey instrument directly. In the case of Champion Mayors Cities, key contact points in the city, that were appointed by the mayor upon joining the initiative, were initially contacted and directed to forward the survey instrument to the appropriate innovation staff within the administration.

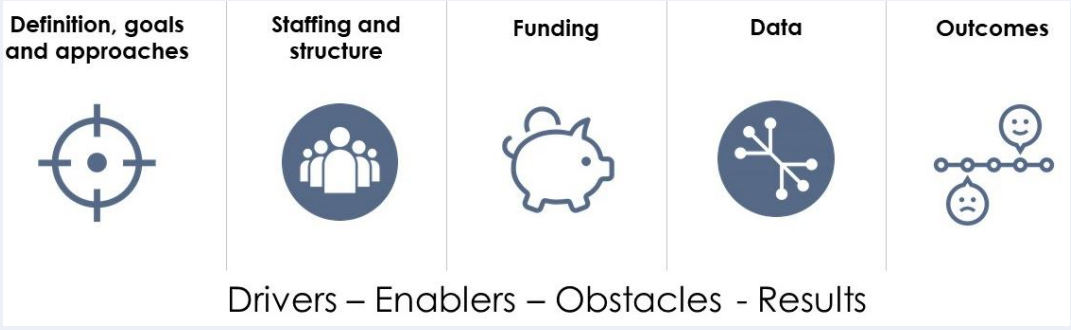
Respondents self-reported; in cases where the innovation work was spread across the administration, the lead innovation staff were asked to consolidate responses and provided one submission for the city.

The survey also invited respondents to share documentation or other supports to explain the municipality's innovation work, and when applicable asked respondents to share sources directly.

Structure of the questionnaire

The OECD and Bloomberg Philanthropies jointly developed the municipal innovation capacity survey. Its goal was to offer an understanding of how local municipalities currently approach public sector innovation and to develop a conceptual framework for identifying the issues, enablers and tools for innovation at the local level.

Figure 1.6. Structure of the OECD/Bloomberg Survey of Innovation Capacity in Cities



The survey was divided into five sections.

- Section 1: Innovation definition, goals and approaches

  This section sought to understand how municipalities build and maintain innovation capacity in the public sector and what innovation capacity means and looks like in a given city administration. It also aimed to understand each city's goals and strategy for innovation in the public sector, as well as the approaches the city uses to innovate within the administration.

- Section 2: Innovation organisation and structure within the administration

  This section sought to understand how innovation is organised within a given municipal administration, for instance, regarding the existence of designated staff, team(s) and officer(s) for innovation.

- Section 3: Funding for innovation capacity

  This section sought to understand the funding and resources dedicated to developing and maintaining innovation capacity (as opposed to funding for programmes or activities resulting from innovative decisions) in each municipality. This could include, for instance, funding for innovation team staff or for data, infrastructure or systems that are intended to support the city's innovation work.

- Section 4: Data for innovation

  This section sought to understand how each municipality is generating, managing and/or sharing data. In most practices of public sector innovation, data are a crucial enabler for the municipality for more evidence-based decision making.

- Section 5: Innovation outcomes

  This section sought to understand the broader outcomes of each city's innovation strategy and goals.

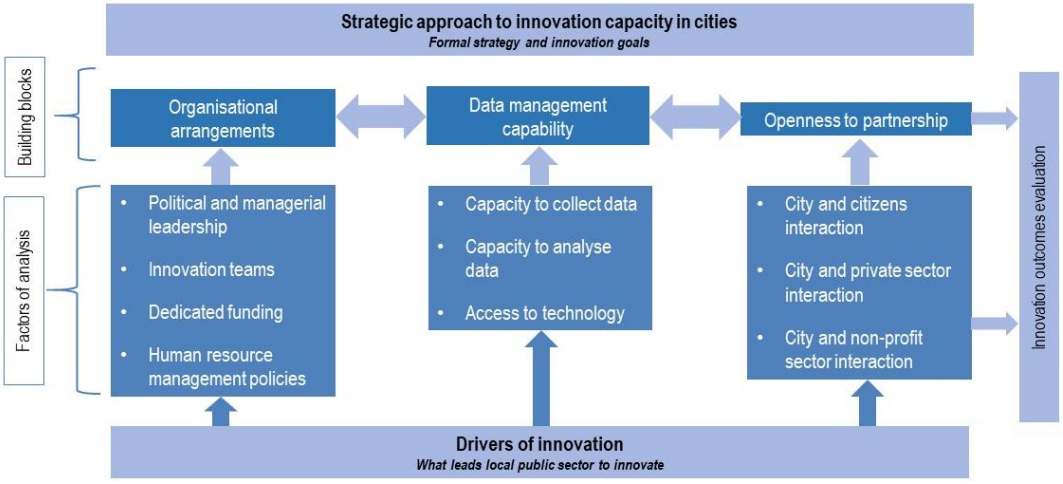
Analytical framework

Enhancing innovation capacity in the local public administration depends on the work culture; the management of the public administration machinery; the adequate level of financial and human resources; the adequacy of the instruments to work (data and technology); and collaboration of a number of internal and external actors (see Chapter 2).

Based on the results of the survey, the OECD proposes that the capacity of cities to innovate may be analysed based on three interdependent building blocks (Figure 1.7):

1. **Organisational arrangements:** This refers to how the formal and informal institutional structure of municipalities can either foster or hinder innovation. It ensures that the leadership at political and administrative levels, staffing skill sets that drive innovation, financial resources and human resource processes necessary for innovation to take place are considered in the innovation strategy.
2. **Data management capability:** This relates to cities' ability to harness data management technologies to promote workplace efficiency, develop evidence-based policies and improve service delivery.
3. **Openness to partnership:** This refers to the capacity of municipalities to communicate and work with different actors outside the public sector (i.e. business, think tanks, research institutions, citizen organisations and individual citizens) to find ideas, develop new projects and empower these partners to formulate their own initiatives and present those to government.

Figure 1.7. Analytical framework for cities' innovation capacity



The three building blocks of the innovation capacity analytical framework for cities, if taken as a whole, provide a comprehensive view of the internal and external elements that affect innovation capacity in cities. They reflect the need for a diversity of actors and competencies, the interdependence of organisational-administrative activities (i.e. budgeting, human resources) in the promotion of innovation, and the importance of co-operation with internal and external actors to facilitate the exchange of ideas, information and lessons. These building blocks influence the creativity process and innovation in the local public sector. The first two refer to the internal characteristics of the local administration and the organisational culture which can be relatively easy to control or influenced. These building blocks should be part of a city's formal innovation strategy, as pursuing changes in operational management is sometimes necessary to foster innovation capacity. The third building block indicates the relationships that the local public administration establishes with outside actors with the explicit goal of boosting its innovation capacity. However, most of these partnerships with actors outside the public sector depend on the level of trust local governments enjoy. Citizens, private sector and

non-governmental organisations may be unwilling to engage in a close partnership with the city government if they do not trust local authorities.

Each of these building blocks is both distinct and interdependent, because a municipality's approach to one inevitably reverberates into the others. For example, the emergence of online platforms has clearly transformed the workplace environment and the way that municipalities interact with constituents. Likewise, cities that actively engage with civil society and research institutions will be more aware of new technological developments and more capable of designing more tailored policies to meet citizens' needs.

A critical aspect of this analytical framework is the inclusion of the strategic approach to innovation capacity in cities. This is based on the premise that innovation capacity does not happen randomly. Innovation requires an explicit policy decision to build the capacity and capability to innovate and, at the same time, meet the city's political priorities. Moreover, having innovation goals helps cities to define the course of action and explore different ways to achieve them. When a city has clear goals, then it can set the parameters for evaluation and prioritise activities to make sure it meets those goals.

The analytical framework also considers the importance of evaluating innovation outcomes. They can be defined as the "… substantive results of the implementation of an innovation that can be intended or unintended and positive or negative" (De Vries, Tummers and Bekkers, 2016, p. 23[8]). The survey inquired whether cities evaluate the outcomes of their innovation and what factors helped them determine success. An innovation outcome evaluation needs to be measured in relation to goals to determine whether the intended outcomes have been achieved, and to what extent innovation capacity facilitated or contributed to the outcomes. Adequate resources and a conducive institutional setting to facilitate innovation may not be sufficient to deliver public services due to considerations other than innovation capacity and capability.

Clustering of cities

In order to have a better understanding of the surveyed cities' efforts to improve their capacity to innovate, we propose a tentative clustering. This clustering is based on how cities understand innovation capacity, what approach they are taking to enhance capacity, what areas they are prioritising, and what internal elements they are using to improve their innovation capability.[4] Its purpose is not to assess cities, but to describe and present their efforts to improve innovation capacity. The clustering would allow cataloguing or clustering cities based on the existence of different elements that were included in the survey.

Figure 1.8 shows a clustering that contains four general categories or groups that provide, all together, an overarching view of how cities are enhancing their innovation capacity.

Strategy and approach to innovation (Table 1.1). This cluster intends to describe how cities embark on their innovation capacity practices. It refers to having a formal innovation strategy or not, and the different approaches to innovation capacity. A city's innovation strategy is the course forward for how to achieve innovation goals.[5] It provides a glimpse of the organisational arrangements a city may have and in which innovation takes place. It is a guiding document that explicitly sets the city's innovation objectives and how it plans to achieve them. Innovation goals are aspirational outcomes or impacts, in both the short and long term, which deliver better outcomes for residents, businesses and the community. In many instances, cities have plans, specific policy strategies and/or programmes that

contain their strategies to promote and guide innovation activities. However, not having a formal innovation strategy does not mean that cities do not innovate.

Figure 1.8. A tentative cluster of cities on elements to improve innovation capacity

Table 1.1. Cluster 1 – Strategy and approach to innovation

How do cities approach innovation?

		No formal innovation strategy	Formal innovation strategy
Approach to innovation	Holistic	Atlanta, Chelsea, Orlando, Otsu City, Providence, Riverside, Virginia Beach	Austin, Boulder, Buenos Aires, Curridabat, Georgetown (TX), Lexington, Louisville, Miami, San Francisco, Stockholm, Tulsa, Turin, Saint Paul, Tokyo
	Policy specific	Alexandria, Baltimore, Beer Sheva, Bilbao, Chicago, Detroit, Fort Lauderdale, Houston, Indianapolis, Inverness, Lansing, Ljubljana, Minneapolis, New York, Oakland, Paterson (NJ), Reykjavik, Rochester, Rotterdam, Saltillo, Santiago de Chile, Seattle	Athens, Cape Town, Irving, Jersey City, Madrid, Rio de Janeiro, San Jose (CA), Toronto
	Both	Anchorage, Aurora, Braga, Charlotte, Fort Collins, Grand Rapids, Huntington (WV), Los Angeles, Memphis, Milan, Mobile, Oklahoma City, Palermo, Sao Paulo, Walnut Creek, Wellington	Akron, Chattanooga, Cincinnati, Denver, Durham, Glendale, Jerusalem, Kansas City (KS), Long Beach, Medellin, Montreal, Paris, Peoria, Philadelphia, Quillota, Seoul, Sintra, South Bend, Syracuse, Tacoma, Tel Aviv, Utrecht

Note: Based on the answers to Question 1.1 "Does your municipality have a formal innovation strategy?" and Question 1.4 "Would you say your city approaches innovation capacity at a holistic, macro level or within a specific policy domain?".
Source: Elaborated based on the OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Innovation priority policy areas (Table 1.2). This cluster shed some light on the policy domain cities are focusing their innovation efforts. This depends on the cities' main socio-economic development objectives and political agenda. As discussed above, cities are working in a wide range of areas – from improving transport and mobility and enhancing the labour market to social inclusion, culture and digital governance. Thus, the different policy domains covered in cities' work agendas were grouped into four main categories to facilitate its view and description.

Table 1.2. Cluster 2 – Innovation priority policy areas

What policy areas are most prioritised by cities for their innovation work?

General area	Policy domains	Cities
Urban development	Transport/mobility, land-use – zoning, built environment, blight, housing, waste, sanitation, sewage, water – public works	Austin, Cape Town, Detroit, Georgetown, Indianapolis, Jersey City, Ljubljana, Louisville, Memphis, Mobile, Oklahoma, Palermo, Peoria, Philadelphia, Quillota, Reykjavik, Rochester, San Jose (CA), Santiago de Chile, Seattle, Syracuse
Economic development and environment	Economic development, labour market (jobs and skills), tourism, environment/climate change	Akron, Aurora, Charlotte, Chelsea, Curridabat, Denver, Fort Collins, Grand Rapids, Jerusalem, Lansing, Lexington, Long Beach, Madrid, Medellin, Minneapolis, Oakland, Paris, Paterson (NJ), Riverside, Saltillo, Sintra, South Bend, Turin, Walnut Creek
Socio-cultural development	Social welfare/social services, policing and law enforcement, health, education, social inclusion and equity, culture, homelessness	Alexandria, Anchorage, Athens, Baltimore, Bilbao, Chattanooga, Cincinnati, Durham, Houston, Huntington (WV), Irving, Kansas City, Los Angeles, Montreal, New York, Rio de Janeiro, Seoul, Tacoma, Toronto, Utrecht, Wellington
Administration and governance	Digital governance, internal process improvement	Beer Sheva, Braga, Chicago, Fort Lauderdale, Glendale, Inverness, Milan, Orlando, Otsu City, Rotterdam, Saint Paul, Sao Paulo, Tel Aviv

Note: Based on Question 1.5 "Which two policy areas would you say are most prioritised in your municipality's innovation work?". The table is based on cities' first option.
Source: Elaborated based on the OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Importance of data for decision making (Table 1.3). Data play an important part in policy decisions and innovation work. This cluster presents the relevance of data in decision making within cities. It must be mentioned that some cities work with both quantitative and qualitative data. They may use interviews, listening sessions, focus groups and community meetings to gather information or data to support decision making. This approach is mostly used when gathering people's views and ideas on issues such as the revitalisation of an underserved neighbourhood or the construction of infrastructure. Some cities may conduct public consultations and referenda to gather information for their policy decisions.

Capability for innovation (Table 1.4). This cluster refers to the elements (specific budget and staff) that help cities to engage in innovation. There are many elements that may contribute to capacity, including regulations, administrative processes and human resource management policies. This classification includes two specific factors: dedicated budget/funding and dedicated teams/staff for innovation, as they were explicitly considered in the survey. Public servants are at the heart of innovation, and cities' administration teams should ensure that employees have the ability, motivation and opportunity to come up with and propose innovative ideas. Budgeting is an area that can support innovation by allocating resources toward the development of innovative projects and initiatives by, for instance, ensuring flexibility in the management of financial resources.

Table 1.3. Cluster 3 – Importance of data for innovation work

How relevant are data for cities in decision making and innovation?

Significance of data in decision making and innovation work	Cities
A significant role	Braga, Cape Town, Cincinnati, Curridabat, Detroit, Durham, Fort Lauderdale, Georgetown (TX), Grand Rapids, Houston, Huntington (WV), Irving, Kansas City, Ljubljana, Los Angeles, Louisville, Minneapolis, New York, Oklahoma, Peoria, Philadelphia, Riverside, Rochester, Seoul, Sintra, South Bend, Syracuse, Tel Aviv, Tokyo, Toronto, Turin, Utrecht, Wellington
Somewhat of a role	Akron, Alexandria, Anchorage, Atlanta, Austin, Baltimore, Bilbao, Buenos Aires, Charlotte, Chattanooga, Denver, Fort Collins, Glendale, Indianapolis, Inverness, Jersey City, Jerusalem, Lansing, Lexington, Madrid, Memphis, Miami, Mobile, Oakland, Orlando, Otsu City, Paris, Providence, Quillota, Rotterdam, Saint Paul, Saltillo, San Francisco, San Jose (CA), Sao Paulo, Seattle, Stockholm, Tacoma, Tulsa, Virginia Beach, Walnut Creek
Small but useful role	Athens, Boulder, Chelsea, Long Beach, Medellin, Montreal, Palermo, Reykjavik
No major or substantive role	Aurora, Beer Sheva, Paterson (NJ), Santiago de Chile

Note: Based on Question 4.1 "How significant a role do data play in your city's innovation efforts and decision making?".
Source: Elaborated based on the OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Table 1.4. Cluster 4 – Availability of dedicated funding and staff for innovation

Do cities have dedicated staff and budget for innovation work?

	Dedicated team/staff for innovation	No dedicated team/staff for innovation
Specific funding available for innovation	Akron, Alexandria, Anchorage, Athens, Atlanta, Austin, Baltimore, Beer Sheva, Boulder, Braga, Buenos Aires, Cape Town, Chattanooga, Chelsea, Cincinnati, Curridabat, Denver, Detroit, Durham, Fort Lauderdale, Georgetown (TX), Glendale, Houston, Irving, Jersey City, Jerusalem, Kansas City, Lexington, Ljubljana, Long Beach, Los Angeles, Louisville, Madrid, Medellin, Miami, Minneapolis, Mobile, Montreal, New York, Orlando, Otsu City, Palermo, Paris, Peoria, Philadelphia, Providence, Reykjavik, Rio de Janeiro, Rochester, Saint Paul, Saltillo, San Francisco, San Jose (CA), Sao Paulo, Seattle, Seoul, Sintra, South Bend, Stockholm, Syracuse, Tacoma, Tel Aviv, Toronto, Tulsa, Utrecht, Virginia Beach, Walnut Creek, Wellington	Fort Collins, Memphis, Oakland
No specific funding available for innovation	Aurora, Charlotte, Grand Rapids, Huntington (WV), Inverness, Quillota, Riverside, Rotterdam, Tokyo, Turin	Bilbao, Chicago, Indianapolis, Lansing, Oklahoma, Paterson (NJ), Santiago de Chile

Note: Based on Question 2.1 "Are there people in your city (such as, but not limited to) dedicated team(s) and/or officer(s) for public sector innovation in your municipality?" and Question 3.1 "Is there specific funding available at the municipality level to support innovation capacity?".
Source: Elaborated based on the OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Notes

[1]. The "Athens Road Map on Innovation for Inclusive Growth in Cities" was adopted by the OECD Champion Mayors for Inclusive Growth Initiative on 18 March 2019 during its fourth annual meeting hosted by the city of Athens.

[2]. The Internet of Things is the concept of basically connecting any device with an on and off switch to the Internet (and/or to each other) (Morgan, 2014[34]).

[3]. Data on trust in government should be managed with care. Levels of trust may be different depending on the level of government.

[4]. This report does not provide a typology of cities on innovation capacity, as it is a theory-building exercise, implying the inclusion of an ideal type (Doty and Glick, 1994[35]). Rather, a classification system is preferable in this case as it would be a description of cities with similar characteristics, practices or processes.

[5]. These working definitions were contained in the Survey on Innovation Capacity in Cities 2018 conducted by the OECD.

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2. Innovation capacity in cities – an empirical perspective

Cities are becoming key actors in the advancement of public sector innovation. This chapter presents the findings of the OECD/Bloomberg Survey on Innovation Capacity in Cities. First, it presents the strategy and goals cities have adopted to realise innovation. Then the chapter discusses the organisational arrangements for innovation, which examines components such as leadership, innovation teams, funding and human resource management. The chapter will then move to present the findings on data management capability, which is considered a key element in enhancing innovation capacity in city government. Finally, this chapter will discuss the governance mechanisms that facilitate public sector innovation, such as citizens' participation in policy making and partnerships with a wide range of stakeholders.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

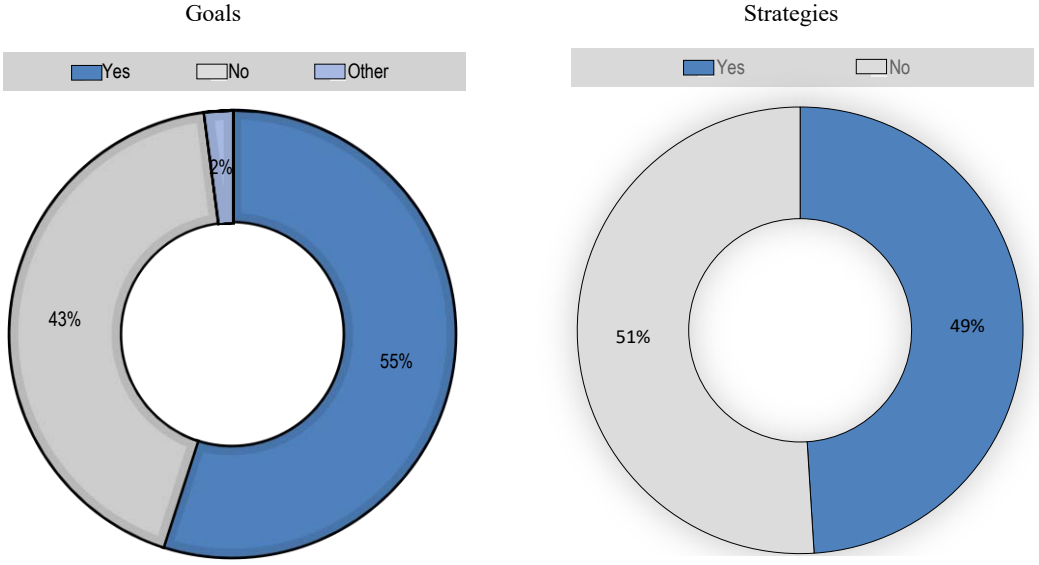
Strategy and goals

Formulate an innovation strategy with a clear political message

Only 9% of cities that participated in the OECD/Bloomberg Survey on Innovation Capacity in Cities indicated they have a formal innovation strategy to improve processes, service delivery or make a better management of resources**.** A formal "innovation strategy" is a key document that highlights the city's priorities and objectives on pursuing innovation and the way to achieve them. It also provides a long-term approach or vision to innovation. In many cases, the strategy is the product of collaboration among city administration, community leaders, academia, private sector representatives and residents. Furthermore, it is a way of signalling that innovation does not occur suddenly or by chance, it results from a long-term iterative process that integrates inputs, procedures and outcomes.

The strategy's main advantage is that it can help encourage and justify cities' efforts to stimulate their long-term capacity to innovate in a strategic manner. "The explicit incorporation of innovation goals and objectives of an organization is the first step to create attitudes amenable to creativity and to continuous development of new products." (Alves et al., 2007, pp. 28-29[1]). Conversely, having innovation goals is not always akin to having an innovation strategy. Overall, 55% of cities reported having formal innovation goals, while 56% reported that they had no formal innovation strategy (Figure 2.1).

Figure 2.1. Share of cities with formal innovation goals and share of cities with a formal innovation strategy



Note: The left panel represents responses from 86 (out of 89 surveyed cities) to Question 5.1 "Does your city have formal innovation goals?". The right panel represents responses from all 89 surveyed cities to Question 1.1 "Does your municipality have a formal innovation strategy?".
Source: OECD /Bloomberg Survey of Innovation Capacity in Cities 2018.

However, of the cities that reported having innovation goals, a large majority did not have a formal innovation strategy. It should be noted that the survey did not specifically assess the quality and scope of these existing innovation strategies, which may vary significantly across cities, although research suggests that an innovation strategy should consist of a high-level, long-term vision indicating the direction the organisation wants to develop and should include concrete yearly plans (Byrne et al., 2018[2]). The innovation strategy could

have a three to five year vision depending on the political system and organisation of each city.

Box 2.1. Select examples of cities with an innovation strategy

- **Kansas City, KS** (United States) convened leaders from agencies and departments across the administration, resident and neighbourhood associations, and civic leaders to develop an innovation strategy resulting from an evaluation of where the city was falling short with service delivery. Kansas City's innovation strategy focuses on operational efficiency, customer experience and citizen engagement.
- **Peoria, IL** (United States) has a recently developed innovation strategy that was shaped by the Bloomberg Philanthropies' Innovation Teams programme. This innovation plan involves a regular (every 18-24 months) alignment with the city's overall strategic plan and assessment of evolving city challenges in order to identify priorities for the innovation team and establish partnerships both inside and outside city hall to address those challenges.
- **Stockholm's** (Sweden) innovation strategy (adopted by the Stockholm City Council in November 2015) provides an inward-looking perspective where innovation plays an important role in the improvement of city operations. It also provides an external perspective as it gives weight to the need to contribute to the overall development of the Stockholm region's innovation capacity and work.

Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Innovation strategies help build a city's innovation activities

Cities with a formal innovation strategy reported being more experienced with activities that foster innovation than those that do not have a formal strategy. Having a formal innovation strategy helps expose cities to innovation-related tools and activities (Box 2.2). According to the results of the survey, there are a number of tools and activities cities may rely on to strengthen their innovation capacity. However, the number of tools and activities a city is familiar with can depend on that city's administrative culture, financing, regulation and political context.

Box 2.2. Examples of practices/concrete actions to strengthen innovation in local governments

Organisational arrangements

Reforming institutional practices entails changing the habits of municipal bureaucracy to create a more dynamic workplace. Cities are working towards this by silo busting, changing how they evaluate workers' performance, training staff in innovation techniques and rethinking their contracting and procurement procedures (OECD, 2017[3]).

Integrating human-centred design is a framework for design and management that develops solutions by involving the human perspective in all steps of the problem-solving process. By studying the experiences of end-users, cities are developing new approaches to various public services (transportation, planning, housing, etc.). This framework includes prototyping experimental ideas to mitigate risks before scaling them up.

Rethinking approaches to finance and partnerships involves the creation of new budgetary and governance models to leverage greater funding and increase returns on public investment. Some cities are reconsidering their approach towards public-private partnerships while others are pursuing improved collaboration with neighbouring jurisdictions through the lens of multi-level governance (Taylor and Harman, 2016[4]).

Adopting foresight, prospective exercises, scenario planning refers to efforts to develop proactive, future-oriented policies. Cities are able to make dramatic long-term transformations possible by outlining general visions of their ambitions before tailoring specific, shorter term policies to transform their visions into concrete realities (Dixon et al., 2018[5]).

Data management capability

Data-driven analytics/public data management involves the use of digital systems in order to offer policy makers a more holistic understanding of urban systems and help them better analyse and evaluate the impacts of public policies. Cities are working towards this by investing in new data storage and analytic infrastructure, developing big data strategies, and launching open data platforms (Kitchin, 2014[6]).

Developing new technology-based solutions refers to the use of digital technology to more efficiently allocate resources, improve infrastructure resilience and generate a knowledge-based economy. Cities are pursuing these goals by investing in things such as fab labs and smart sensors (Buck and While, 2015[7]).

Openness to partnership

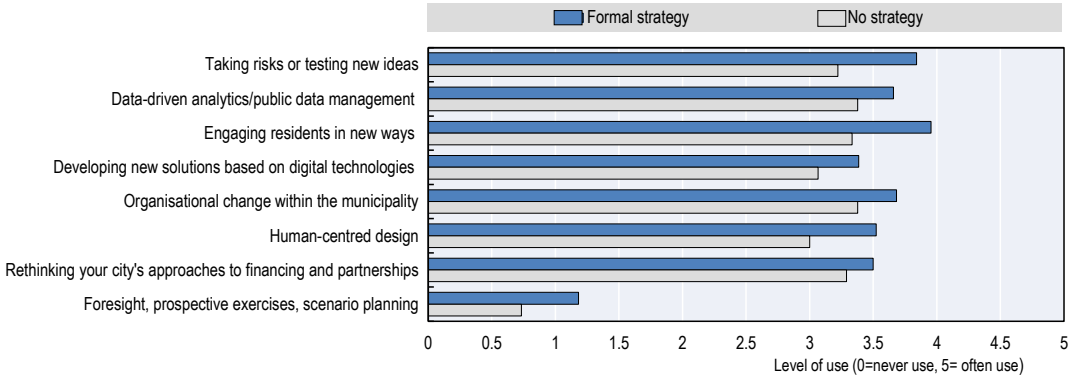
Engaging residents in new ways entails perceiving residents as active agents and valuable partners capable of offering municipalities key insights on how to improve cities. As part of this paradigm shift, cities are developing new digital communication platforms to receive constituent feedback and are co-creating public services (Voorberg, Bekkers and Tummers, 2015[8]).

Sources: Brown, T. and J. Wyatt (2010[9]), "Design thinking for social innovation", https://elibrary.worldbank.org/doi/pdf/10.1596/1020-797X_12_1_29. Dixon, T. et al. (2018[5]), "Using urban foresight techniques in city visioning: Lessons from the Reading 2050 vision", http://dx.doi.org/10.1177/0269094218800677; Taylor, B.M. and B.P. Harman (2016[4]), "Governing urban development for climate risk: What role for public-private partnerships?", http://dx.doi.org/10.1177/0263774X15614692; OECD (2017[3]), *Fostering Innovation in the Public Sector*, https://dx.doi.org/10.1787/9789264270879-en.

Figure 2.2 shows that cities with a municipal innovation strategy tend to use with greater frequency a wide range of innovation tools and activities. A clearly defined formal strategy can enable cities to better allocate their resources to achieve the goals of municipal leaders

(Knutsson et al., 2008[10]). Yet, to be truly effective, a strategy must be known and owned by public servants. Public employees must incrementally implement the municipal strategy on a daily basis. Managed this way, a strategy can improve municipal outcomes not only by dictating resource allocation from the top, but also from the "bottom up", by allowing municipal employees to situate their own work within the overall context of the larger organisation (Knutsson et al., 2008[10]).

Figure 2.2. Frequency of use of innovation approaches between cities with vs. without formal innovation strategies



Notes: All 89 surveyed cities responded to Question 1.1 and 88 cities responded to Question 1.6. The figure represents results obtained by crossing responses to Question 1.1 "Does your municipality have a formal innovation strategy?" with responses to Question 1.6 "What would you say is the level of use or experience your city has with each of the following innovation activities?" (1 = Never used; 3 = Use sometimes; 5 = Use often). The horizontal axis denotes average points that these cities assign for each innovation activity (on a scale from 1 to 5). "Foresight, prospective exercises, scenario planning" as one of the pre-defined innovation activities for Question 1.6 was not ranked (i.e. left blank) by 61 out of 89 surveyed cities, accounting for their rank point being lower than 1.
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

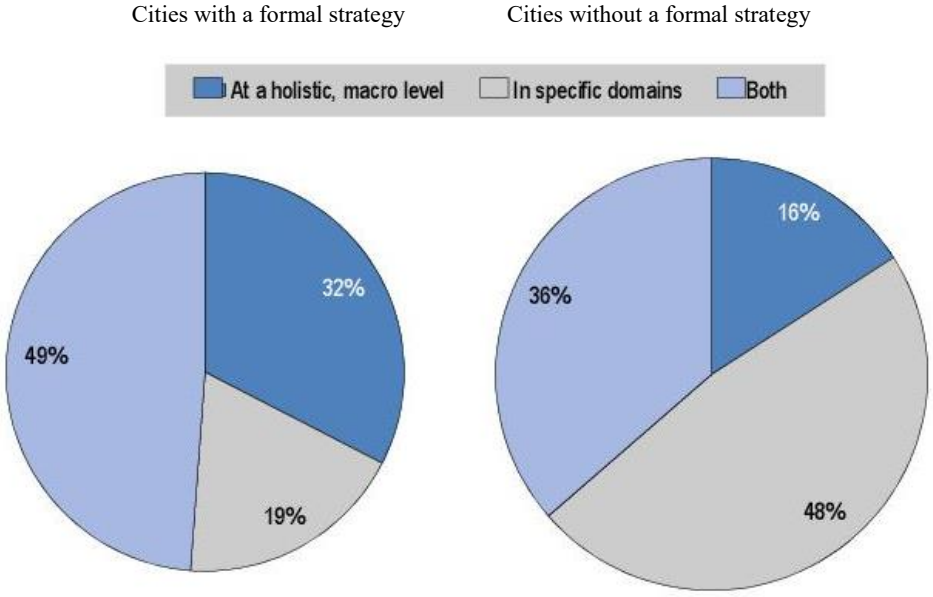
Cities with an innovation strategy tend to approach innovation much more holistically. This is a way for the local administration to see the innovation strategy as a process for problem solving that can be applied in multiple policy domains and challenges. A holistic approach ensures that every sector or area in the administration is brought into the effort to build innovation. Moreover, cities with a formal innovation strategy are more likely to have formal innovation goals. There are, however, cities with a formal innovation strategy that do not have explicit innovation goals. In these cases, cities tend to have a long-term development vision that stresses the need for innovation. A few cities have adopted a holistic approach to innovation without a formal strategy.

On the other hand, as the survey revealed, most of the cities that do not have a formal innovation strategy tend to focus on innovation efforts within specific domains – such as education, poverty or economic growth – to foster their innovation capacity. Some cities have innovation teams that focus on both specific topics and teaching innovation techniques to the whole organisation. By developing a formal innovation strategy, municipalities put themselves in a position to consider how changing practices will affect their work across departmental boundaries. Moreover, the implementation of an innovation strategy can help create the institutional space and resources for cross-cutting initiatives.

When cities were asked whether they approached innovation within specific policy domains, holistically or both, only 19% of the cities that indicated having a formal

innovation strategy also indicated that their innovation work was isolated to specific policies. This stands in stark contrast to cities without a formal strategy, among which almost half (48%) stated to approach innovation work only within particular policy sectors.

Figure 2.3. Approach to innovation between cities with vs. without a formal innovation strategy



Notes: Responses provided by 89 surveyed cities. The figures represent results obtained by crossing the responses to Question 1.1 "Does your municipality have a formal innovation strategy?" with responses to Question 1.4 "Would you say your city approaches innovation capacity at a holistic, macro level; within specific policy domains; or both?".
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

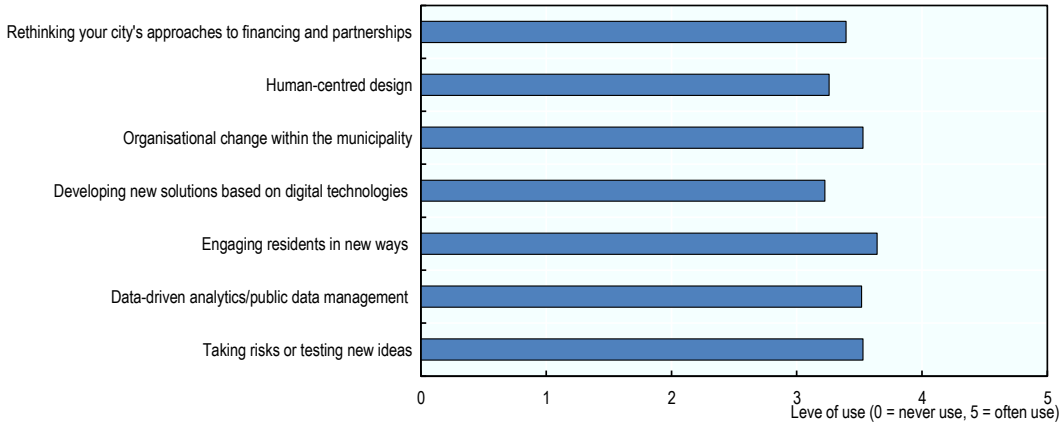
Figure 2.4 shows that the most common approaches and practices across cities related to innovation capacity are taking risks or testing new ideas; data-driven analytics and public data management; organisational change within the municipality; and engaging residents in new ways (see Box 2.2). However, this picture changes when considering the adoption of a formal innovation strategy.

Indeed, an innovation strategy may suggest a different approach to innovation. As Table 2.1 shows, cities with a formal innovation strategy tend to be more open to take risks and pursue organisational change, whereas those without a strategy are more focused on data-driven analytics and rethinking the city's approach to finance and partnership. Interestingly, a large majority of cities reported that they are working toward finding new ways to engage residents in policy making. This is not surprising as most of the innovation strategies reported by cities refer to the need to obtain citizen input and support for designing and implementing innovative policies and projects.

One area where all cities seem to lack experience is in conducting foresight and prospective exercises. One explanation for this could be due to the political and administrative culture as urban planners have only sporadically engaged with futures studies to develop long-term city visions. For example, in some countries, mayors have short terms in office and no possibility for re-election. "Urban planning … remains a predominantly short-term and medium-term activity (or 15-20 years ahead), rather than looking to the longer-term of

2050 and beyond" (Dixon et al., 2018, p. 781[5]). Another issue may be that, because of politics or people's demands, cities look predominately at the problems right in front of them.

Figure 2.4. Cities' experience with various innovationapproaches



Notes: Out of 89 surveyed cities, 88 responded to Question 1.6 "What would you say is the level of use or experience your city has with each of the following innovation activities?" Surveyed cities were asked to rank each innovation activity on a scale from 1 to 5 (1 = Never used; 3 = Use sometimes; 5 = Use often). The units on the grids correspond to the average points that surveyed cities assign for each innovation activity (on a scale from 1 to 5).
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Table 2.1. A tentative clustering of cities' approaches to innovation

Approach to innovation	Innovation tools more frequently used	Innovation tools less frequently used	Terms more frequently associated with innovation
Cities with a formal innovation strategy	– Taking risks and open to new ideas – Engaging residents in new ways – Organisational change within the municipality	– Foresight prospective exercises and scenario playing – Developing new solutions based on digital technology	– Big picture rethinking – Human-centred design – Experimentation – Data analytics
Cities without a formal innovation strategy	– Data-driven analytics – Engaging residents in new ways – Rethinking the city's approach to financing and partnerships	– Foresight prospective exercises and scenario playing – Developing new solutions based on digital technology – Human-centred design	– Technological innovation – Experimentation

Source: OECD elaboration based on the OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Cities with a formal innovation strategy tend to associate innovation with rethinking its administrative organisation based on a human-centred design. This means that we can improve societal problems – like poverty, lack of security, access to clean water and environments – but solutions lie in the people who face those problems every day. The solutions are found by working together with the communities affected by those problems, as it allows for the creation of new solutions rooted in people's actual needs (Byrne et al., 2018[2]). Cities without a formal strategy tend to associate innovation more frequently with

technological developments. The large majority of cities acknowledge the importance of experimentation for innovation.

Organisational arrangements

Advance new organisational structures that shape innovation capacity

Local governments' structure and functions may affect, to a certain extent, the promotion of innovation. Individual members of staff, the teams they work in, the units where their teams are located, the organisation (agency or ministry) where they work, and the whole of the local public administration are important factors that influence the innovation capacity of the local public administration.

Table 2.2 presents some of the ways in which innovation may take place in public organisations at different levels of government. These levers should not be considered in isolation; they should be combined to achieve synergies and greater impact in the promotion of public sector innovation. Governments could take co-ordinated action across different policy levers to promote innovation. Table 2.2 is not meant to be exhaustive, as there are other elements of how the public sector, and in particular local public administration, is organised that will affect its capacity, willingness and opportunity to innovate. It should be considered that public sector innovation may be more successful, depending on the configuration of individuals, resources and personalities, and the local and national economic and socio-political context (OECD, 2017[3]).

Table 2.2. How government functions influence the capability and motivation to innovate

	Capability to innovate	Motivation to innovate
Regulation	– Are rules, processes and procedures blocking innovation? – Are hierarchy and bureaucratic conventions impeding innovations?	– Will challenging accepted practices be beneficial?
Budgeting	– Funds for piloting and scaling up – Flexibility to move resources	– What happens to innovation dividends? – How is innovation prioritised in budget allocation?
Human resources	– Discretion – Autonomy – Skills – Professional and competency development – Leadership support	– Is there a rewards system in place? – Are innovation efforts systematically recognised? – Is innovation included as a criterion for career progression?
Innovation organisations	– Space to experiment – Funds for investment – Developing skills for innovation – Support for using new techniques and methodologies	– Is innovation a recognised priority? – Are there fora to share and recognise success?
Risk	– Knowledge of processes to manage risk and uncertainty – Availability of required resources (skills and financial) for innovation to happen	– How is innovation valued, e.g. is there a recognised mandate for innovation?

Source: OECD (2017[3]), *Fostering Innovation in the Public Sector*, https://dx.doi.org/10.1787/9789264270879-en.

Installation of innovation units/teams

The specific features of the workplace can largely impact innovation capacity

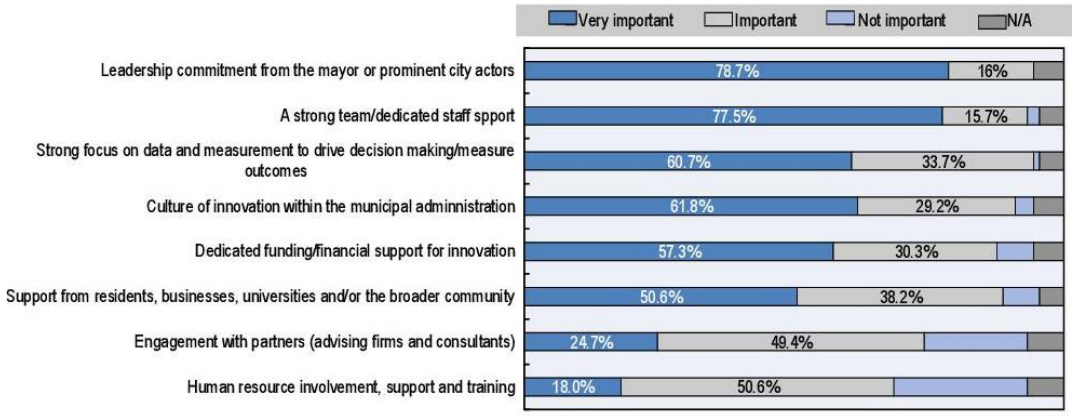
To effectively harness cities' innovative capacity, it is essential to create the necessary conditions that support the inventiveness of the public workforce. The formal, codified, vertical relationships between executive authorities and the local public workforce and the horizontal relationships between the silos of different departmental agencies can strongly influence public sector innovation capacity. Yet, it is important to note that unspoken workplace habits and culture can also significantly incentivise public sector employees to either innovate or maintain the status quo. "Organisations' cultural elements like routine behaviours, shared values and beliefs, influence the level and frequency of creative occurrences and impact on the free flow of ideas that favour innovation" (Alves et al., 2007, p. 29[1]).

The quantity and quality of human resources allocated to innovation teams and projects is likely to have a positive impact on the success of the plan. Employee motivation and involvement in the innovation process is of key relevance. Innovation capacity also depends on having public sector managers in top and middle positions with a change-oriented behaviour. For this to happen, it is very important to consider how risk taking is managed, how ideas are evaluated, and how mistakes are handled internally by middle and senior managers (Alves et al., 2007[1]; OECD, 2017[3]). The city administration's human resource management should set incentives, such as compensation and career promotion, for employees to innovate. Moreover, innovation capacity also requires more flexibility in human resource management, allowing for job rotation and the flow of ideas, cross-departmental learning and teaming.

Leadership is an essential ingredient for supporting innovation capacity in cities

Political and managerial leadership has a key role to play in inspiring and supporting behaviour change in the city's administration. According to the survey, cities rank leadership commitment as the most important determinant of successful innovation work (Figure 2.5). The role of politicians is likely to be extremely influential in the adoption of innovations as they set the political values, policy direction, priorities and decide on the allocation of resources (Walker, 2006[11]). Therefore, "… leadership buy-in and the direct support of the mayor appear to be crucial factors in how embedded innovation culture is within a city government" (Makin, 2017, p. 13[12]). In many instances, local political leaders may set their reputation on the promotion of innovation. This would not only bring prestige to the city as a reference point for other cities, but for the political leadership it could represent more legitimisation and increase citizens' trust in their administration.

Figure 2.5. Most important factors/practices in supporting innovation in cities



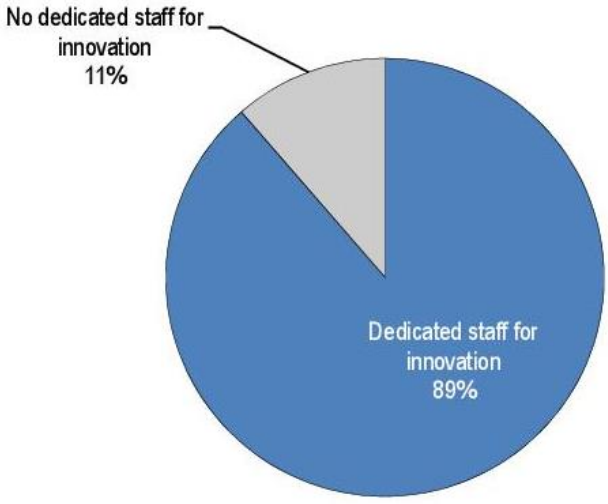
Notes: Out of 89 surveyed cities, 85 responded to Question 5.6 "How important are the following factors or practices in supporting innovation in your municipality?". Surveyed cities were asked to indicate "Very important", "Important", "Not important" for each factor/practice.
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Managerial leadership is also crucial for the development of innovation capacity. City administrators, city managers or chief executives set the standards for how audacious civil servants can be in developing new approaches and projects. Executives at the head of municipalities and departments can strongly determine workplace culture in ways that human resource management may be unable. Moreover, executives play a crucial role in allocating the human and financial resources that can help implement an innovative policy agenda. There is still debate on whether managers should encourage stability to enhance institutional memory or allow mobility to bring in new ideas (Walker, 2006[11]). It seems important to have both: managers with deep historical knowledge and understanding of how the administration functions and managers who have skills gained from other institutions who can bring different perspectives to the fore. Middle managers also have a key role in developing innovation capacity by allowing for greater autonomy and flexible human resource management rules so that their teams can enhance the administration's ability to innovate.

Specific innovation units may have a major impact on cities' capacity to innovate

The creation of a dedicated innovation unit is a popular, if recent, tactic cities are deploying to help mainstream their innovation work. The large majority of cities surveyed (89%) have dedicated staff or teams to promote innovation (Figure 2.6). Survey results show that only 21% of innovation teams have been in place for more than five years. This suggests that the innovation units or teams may still require time to consolidate their job and produce results. Producing innovation is a long-term process that requires continuity and most of the innovation teams have existed for three years on average. A key challenge for cities is to ensure that the innovation teams survive changes in the administration and political leadership.[1]

Figure 2.6. Presence of dedicated innovation teams/staff within city administration

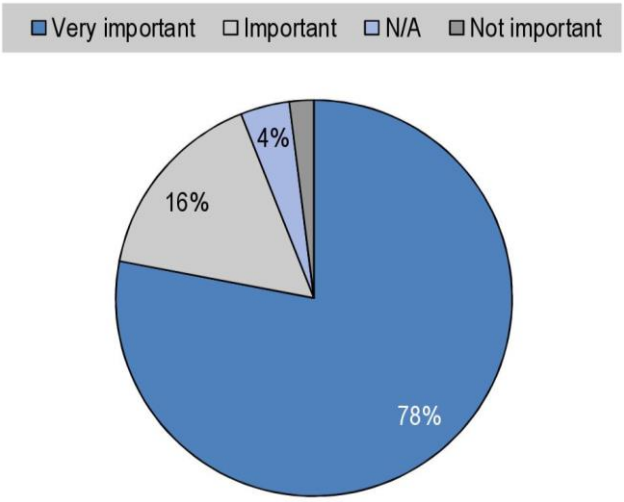


Note: Out of 89 surveyed cities, 88 responded to Question 2.1 "Are there people in your city such as, but not limited to, designated team(s) and/or officer(s) for public sector innovation in your municipality?".
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

OECD (2017[3]) research has found that innovation units can help overcome barriers to innovation through their different functions. Innovation teams have five broad functions: 1) supporting and co-ordinating the implementation of innovative solutions; 2) experimenting with different approaches to problems; 3) supporting cross-cutting and interdisciplinary projects; 4) ensuring the resources needed to give emerging ideas the space to grow; and 5) building capacity and networking support.

Survey results show that cities consider dedicated innovation units a crucial mechanism to cultivate municipal innovation capacity (Figure 2.7). These units or teams are generally thinking beyond the day-to-day to reimagine cities and the services they provide. However, a dedicated innovation team should not own innovation for the city. While their role is to facilitate and enable innovation, building capacity and skills for innovation is crucial (Makin, 2017[12]). The challenges for these teams are to transmit their energy, vision and skills to other teams throughout the administration, to build a culture of collaboration and to break down silos.

Figure 2.7. Importance of dedicated innovation team/staff in supporting innovation capacity



Notes: Out of 89 surveyed cities, 85 responded to Question 5.6 "How important are the following factors or practices in supporting innovation in your municipality?", where one of the factors is "A strong team/dedicated staff support". Surveyed cities were asked to indicate "Very important", "Important", "Not important" for each factor/practice.
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Box 2.3. Select examples of innovation units in cities

- **Cape Town's** (South Africa) Organisational and Innovation Department resides within the Corporate Services Directorate. Its purpose is to deliver strategic support to contribute to the efficiency and effectiveness of the city administration's core mandate of service delivery.
- **Cincinnati, OH** (United States) innovation function is housed within the Office of Performance and Data Analytics. The rationale is that performance management, data analytics and innovation are interdependent. This team works with the city manager to establish a comprehensive, integrated performance management programme for the city that includes performance management agreements, a CincyStat programme and an innovation lab focused on streamlining municipal processes. The five to ten person team works with departments to measure performance, evaluate success and identify areas of improvement. Its innovation lab helps agencies achieve efficiency gains through leaner and smarter operations, better and faster service delivery, and increased capacity for problem solving.
- **Jerusalem's** (Israel) Innovation Team (JLM i-team), is an independent senior consulting team that reports to the mayor directly. It works on strategic areas such as youth at risk, fostering business opportunities, education, building thriving communities and creative public space. Its independence allows it to build bridges across departments and organisations to achieve common goals. The team works with city partners to create lean and smart initiatives that, once successful, are scaled up.
- **New York, NY** (United States) has set the Mayor's Office for Economic Opportunity (NYC Opportunity) as an innovation lab focused on reducing poverty

and increasing equity. The 60-person team conducts cross-cutting research, collects and analyses data, and formulates proposals for the city's programme and policy development. Its work includes analysing anti-poverty approaches, facilitating data sharing across the city's administration and assessing the impact of key initiatives. It works collaboratively with other agencies to design, test and oversee new programmes and digital products. It produces the annual Poverty Measure that provides a comprehensive picture of poverty in the city. NYC Opportunity relies on the following capacities/expertise: design, programme management, digital products, data integration, evaluation and research. It has a lot of capacity around human-centred and behavioural design.

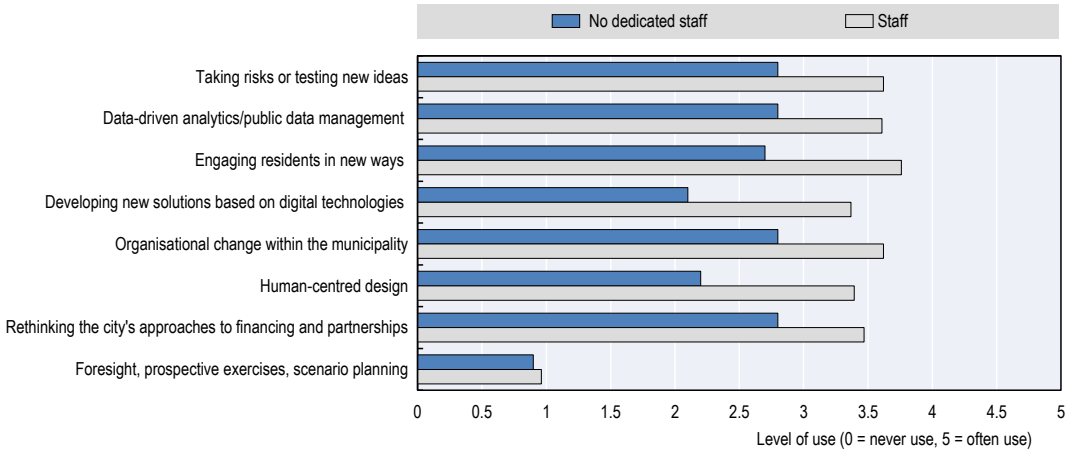
- **Syracuse, NY** (United States) has set an innovation team at the Office of Accountability, Performance and Innovation. Its aim is to help departments in the city administration to address citizen needs through data-driven decision making. Within the office, the divisions of data, innovation and accountability work interdependently. All innovation projects contribute to key strategic objectives such as: efficient, effective and equitable service delivery; increasing economic investment; providing quality constituent engagement and response; and achieving fiscal sustainability. The team uses a philosophy called Objectives+ Key Results to use data to measure change and drive innovation.

Sources: For Cape Town: Directorate Executives Summaries and Scorecards for 2018-2019. For Cincinnati: Office of Performance and Data Analytics, https://www.cincinnati-oh.gov/manager/opda. For Jerusalem: JLM i-Team, https://jlmiteam.org. For New York City: NYC The Mayor's Office for Economic Development, www1.nyc.gov/site/opportunity/about/about-nyc-opportunity.page and presentation of Carson Hicks, Deputy Executive Director of the Mayor's Office for Economic Opportunity, New York City during the webinar on "Advancing Cities' Innovation Capacity" on 12 June 2019. For Syracuse: City of Syracuse Innovation Team, www.innovatesyracuse.com and presentation of Adria Finch, Director of Innovation, during the webinar "Accelerating Cities' Innovation Capacity" on 12 June 2019.

Moreover, in an era of rapidly changing city environments, cities need to ensure they employ a skilled and adaptable workforce. They need to design high-quality learning and development strategies for local public servants to update, upgrade or even acquire new knowledge and skills. For example, the increasing reliance on ICT for public service delivery and on data-driven planning and decision making requires a digital skill set among the different areas of the city administration.

Having full-time municipal staff dedicated entirely to innovation appears to be one of the capacity-building factors that most strongly correlates with innovation work (Figure 2.8). On average, cities that hired dedicated staff reported significantly higher levels of familiarity with innovation work. The most significant differences between cities with and without dedicated staff occurred with respect to developing new solutions based on digital technology. Cities with dedicated innovation staff scored 60% higher levels of familiarity with developing new solutions based on digital technologies than cities without a dedicated innovation staff. The second-most significant domain of innovation work where staff capacity correlated with levels of use was human-centred design. Cities with dedicated staff recorded 54% higher levels of use than those of cities without any staff dedicated to innovation work.

Figure 2.8. Frequency of use of innovation approaches for cities with vs. without dedicated innovation team/staff



Notes: Out of 89 surveyed cities, 88 responded to Questions 2.1 and 1.6. The figure represents results obtained by crossing the responses to Question 2.1 "Are there people in your city designated team(s) and/or officer(s) for public sector innovation in your municipality?" with responses to Question 1.6 "What would you say is the level of use or experience your city has with each of the following innovation activities?" (1 = Never used; 3 = Use sometimes; 5 = Use often). The horizontal axis denotes average points that surveyed cities assign for each innovation activity (on a scale from 1 to 5). "Foresight, prospective exercises, scenario planning" as one of the pre-defined innovation activities for Question 1.6 was not ranked (i.e. left blank) by 61 out of 89 surveyed cities, accounting for some rank points being lower than 1.
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Innovation teams generally sit at the mayors' or city manager's office

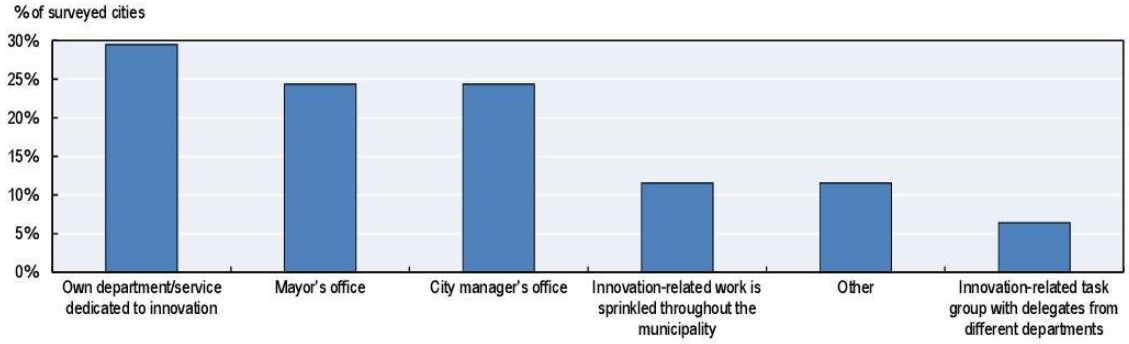
The organisation and structure of the "innovation units" vary significantly from city to city. Around half of innovation teams sit in the mayor's or city manager's office and nearly 30% have their own dedicated department (Figure 2.9). Yet a minority of cities have chosen to valorise peripheral knowledge in their innovation work by placing innovation units within specific departments or appointing delegates from departments to an innovation committee.

There is no one-size-fits-all approach for the location of innovation units within city administrations. It seems very dependent on the cities' priorities and context. When cities see innovation as a powerful tool to foster cultural change in the administration and want to strengthen co-ordination, they usually establish the unit in the mayor's office. When cities want to focus on a specific area – such as economic and social development, environment, transport, or housing – they tend to locate this unit in a specific department. Positioning the innovation unit under the mayor's remit signals the intention to work across city departments and departmental boundaries to address city issues (Makin, 2017[12]).

Innovation units are generally understaffed and are led by project managers

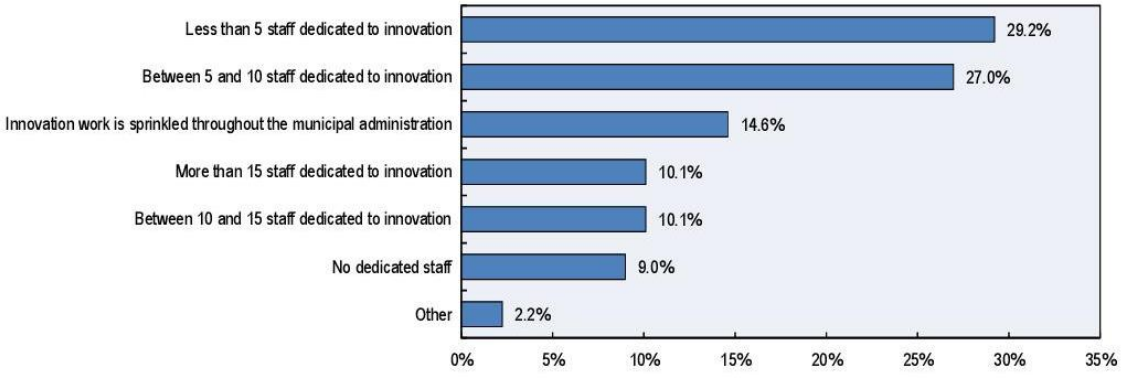
The large majority of responding cities have staff dedicated to innovation work. However, more than half (56%) have innovation departments with 10 employees or less; only 10% have more than 15 staff dedicated to innovation (Figure 2.10). The generally limited size of municipal innovation departments indicates that cities primarily view innovation work as complementary to the conventional work of city agencies.

Figure 2.9. Location of innovation team within the city administrations



Notes: Out of 89 surveyed cities, 78 have a designated team(s) and/or officers for public sector innovation within their city administration. The figure represents responses provided by these 78 cities to Question 2.5 "Where, in your city administration, does the innovation team sit?". The vertical axis denotes the percentage of cities whose innovation team sits in various locations within the city administrations.
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Figure 2.10. Size of innovation teams dedicated to building innovation capacity



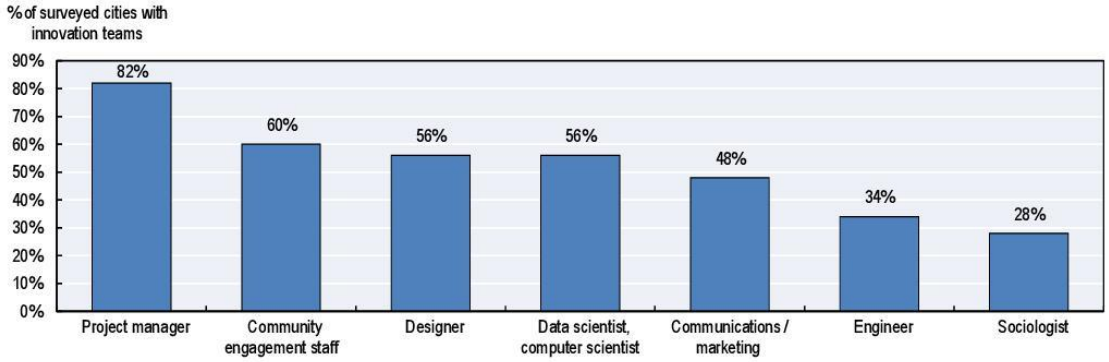
Notes: Out of 89 surveyed cities, 88 responded to Question 2.2 "How many total innovation-related staff work in your municipality?". Surveyed cities were allowed to select more than one option.
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Innovation teams can provide municipalities with a variety of key functions to bolster innovation capacity. They can serve as liaisons between departmental silos by creating networks to share best practices or by working to co-ordinate the implementation of cross-cutting innovation projects, such as digitisation. Dedicated innovation units can also serve as spaces for policy experimentation, where projects are conceptualised and prototyped on a small scale before expanding into other departments. The capacity of innovation departments to foster innovation depends on their relationship to municipal centres of authority. The closer the team is to the central executive power, the greater their capacity to effect change when leadership is bold and strong (Cohen, Almirall and Chesbrough, 2016[13]). The more in the periphery the team is, the more open to radical innovation it will tend to be (OECD, 2017[3]).

Innovation teams are, most often, led by people with project management skills. Indeed, survey results show that project manager (82%) and community engagement staff (60%) are the most common positions on innovation teams (Figure 2.11). It seems logical to have

project managers leading innovation teams as their task is to co-ordinate the work of teams. Innovation requires giving more opportunities to city staff working in different service areas and departments to meet regularly to share ideas and work together towards a common goal (Makin, 2017[12]).

Figure 2.11. Professional skills/profiles represented by innovation staff in city administration

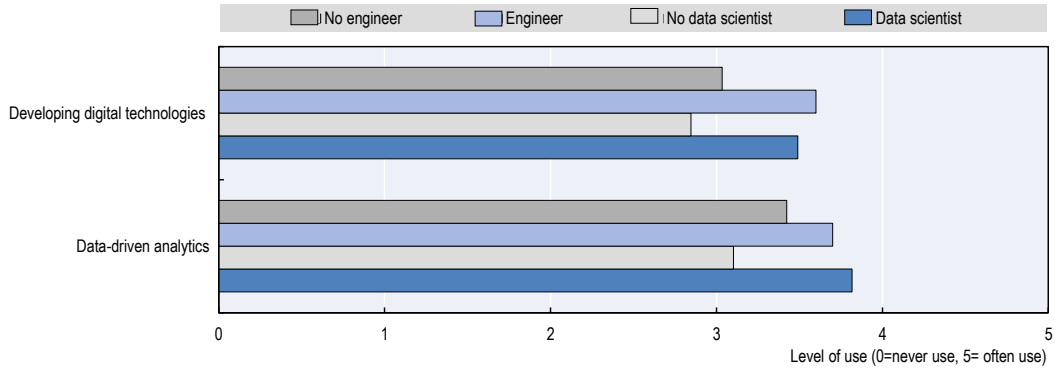


Notes: Out of 89 surveyed cities, 78 have a designated team(s) and/or officers for public sector innovation within their city administration. The figure represents responses provided by these 78 cities to Question 2.3 "What types of professional skills does your city have on its innovation staff?". Surveyed cities were asked to select all relevant profiles/skills. The vertical axis denotes the percentage of skills/profiles possessed by innovation staff.
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

A comparison of cities' levels of familiarity with innovation work according to the profiles of their staff members suggest that cities with computer scientists and engineers reported being significantly more familiar with innovations in municipal data analytics and digital technologies (Figure 2.12). Moreover, cities with engineers on staff had the highest levels of familiarity with implementing new digital technologies.

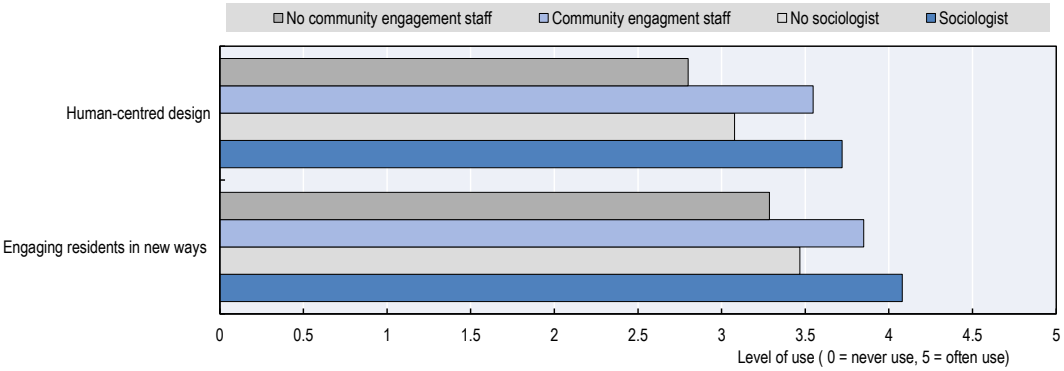
Similarly, cities that hired innovation staff with qualitative skills, such as human-centred design, proved much more effective than their counterparts at engaging residents in new ways (Figure 2.13). Cities that hired sociologists were correlated with the highest levels of familiarity with these two categories of work. Meanwhile, cities that lacked community engagement staff were 27% less familiar on average with human-centred design than their counterparts with dedicated staff for community engagement. Notably, cities with community engagement staff also scored 17% greater familiarity with risk taking than cities that lacked such staff.

Figure 2.12. Frequency of use of technological/digital innovation approaches between cities with vs. without an engineer/data scientist



Notes: Out of 89 surveyed cities, 78 cities responded to Question 2.3 and 88 cities responded to Question 1.6. The figure represents results obtained by crossing responses to Question 2.3 "What types of professional skills does your city have on its innovation staff?" with responses to Question 1.6 "What would you say is the level of use or experience your city has with each of the following innovation activities?" (1 = Never used; 3 = Use sometimes; 5 = Use often). "Data-driven analytics/public data management" and "Developing new solutions based on digital technologies" are two of the options under Question 1.6, while "Data scientist/computer scientist" and "Engineer (civil/mechanical/electrical/other)" are two of the options under Question 2.3. The horizontal axis denotes average points that surveyed cities assign for each innovation activity (on a scale from 1 to 5).
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Figure 2.13. Community engagement staff and sociologists help design new ways to engage with residents

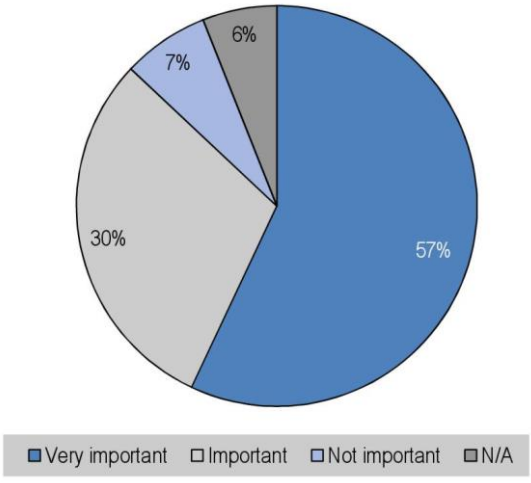


Notes: Out of 89 surveyed cities, 78 cities responded to Question 2.3 and 88 cities responded to Question 1.6. The figure represents results obtained by crossing responses to Question 2.3 "What types of professional skills does your city have on its innovation staff?" with responses to Question 1.6 "What would you say is the level of use or experience your city has with each of the following innovation activities?" (1 = Never used; 3 = Use sometimes; 5 = Use often). "Human-centred design" and "Engaging residents in new ways" are two of the options under Question 1.6, while "Community or resident engagement staff" and "Sociologist" are two of the options under Question 2.3. The horizontal axis denotes average points that surveyed cities assign for each innovation activity (on a scale from 1 to 5).
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Set up a specific financing framework

Although the large majority of responding cities (80%) have specific funding to support innovation, it does not necessarily mean that their resources are sufficient to finance innovation. This is particularly the case when cities need to deliver more with less. Yet, in many cities, budget reductions and cuts may be creating the conditions for innovation to occur. The way that a municipality finances innovation work can also strongly determine the implementation of new ideas. A large majority (87%) claimed that dedicated funding is at least somewhat important in determining innovation capacity (Figure 2.14). Sound sources of funding allow cities to conduct research, prototype or test new ideas, implement ideas on a larger scale, and recruit highly qualified staff. The city of Los Angeles, in its answers to the OECD/Bloomberg Survey on Innovation Capacity in Cities, suggests that dedicated funding for innovation projects is essential to feel comfortable trying new things. It is then easier for government officials to use taxpayer money to continue or scale the work. At the same time, it is also much easier for residents to appreciate government experimentation and support innovation and transformation. In the experience of the city of Los Angeles, it can be hard for government to budget for innovation and specific tools and projects until they are proven.

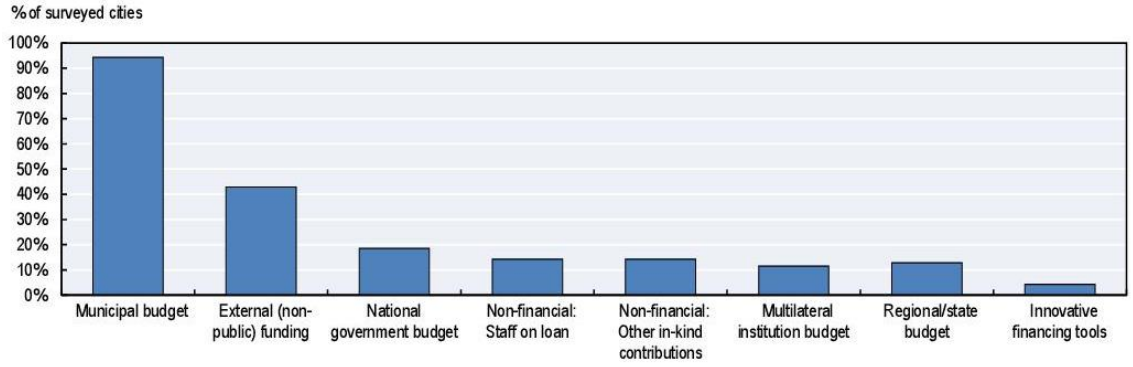
Figure 2.14. Importance of dedicated funding in supporting innovation capacity



Notes: Out of 89 surveyed cities, 85 responded to Question 5.6 "How important are the following factors or practices in supporting innovation in your municipality?", where one of the factors is "Dedicated funding/financial support for innovation". Surveyed cities were asked to indicate "Very important", "Important", "Not important" for each factor/practice.
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Among the cities with dedicated funding for innovation, the vast majority (94%) have—set aside resources from the municipal budget to fund part of their innovation work (Figure 2.15). This occurs through the operating budget and by funds approved through the city council. The next largest source of municipal innovation funding is external partners from outside the public sector. Cities rely on non-profit organisations (i.e. foundations, philanthropy) for this funding, with relatively few relying on private sector investments or support from a national government budget.

Figure 2.15. Sources of funding to enhance innovation capacity in cities



Notes: Out of 89 surveyed cities, 70 reported having specific funding available at the municipality level to support innovation capacity. The figure represents responses of these 70 cities to Question 3.2 "To the degree you have funding that enhances your capacity to innovate, where does this funding originate from?". Surveyed cities were asked to select all options that apply. The vertical axis denotes the percentage of cities whose funding for innovation comes from various different sources.
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Box 2.4. Select examples of strategies to fund innovation work in cities

Municipal budget

- **Madrid** (Spain) is funding innovation teams across departments in the city hall through the municipal budget to help them solve problems in new ways. Citizens and associations can propose ideas through participation platforms and the implementation is done via the municipal budget.

Municipal budget + external (non-public) funding

- **Louisville, KY** (United States) is earmarking one part of the operating budget for innovation work, whereas innovation pilots and initiatives are funded through private and philanthropic partners.
- **Memphis, TN** (United States) innovation team is made up of an external organisation called Innovate Memphis, whose funding is essentially a third of the core city budget for innovation capacity, a third the support of local foundations, and a third earned revenue projects or other programme-specific grants. The grant is from the general fund, funded by property taxes, and is 50% for personnel and 50% for programme support and tech development.

Municipal budget + external (non-public) funding + non-financial contributions

- **Philadelphia, PA** (United States) Office of Innovation Management holds an allocated budget approved by the city council and the mayor under the Office of Innovation and Technology. GovLabPHL, a multi-agency team centred on embedding evidence-based and data-driven methods into city programmes and services,

is funded through the mayor's office and receives grant dollars for pilot projects. Swarthmore College and the University of Pennsylvania have been instrumental in providing financial and in-kind support to GovLabPHL initiatives, including an annual conference, year-round policy fellows and funding for randomised control trial pilot projects.

National government budget

- **Stockholm** (Sweden) launched the Hub for Innovation, a three-year project funded by Sweden's National Innovation Authority, Vinnova, in 2017. The hub supports a more innovative working culture within the city hall.

National budget + municipal budget + non-financial

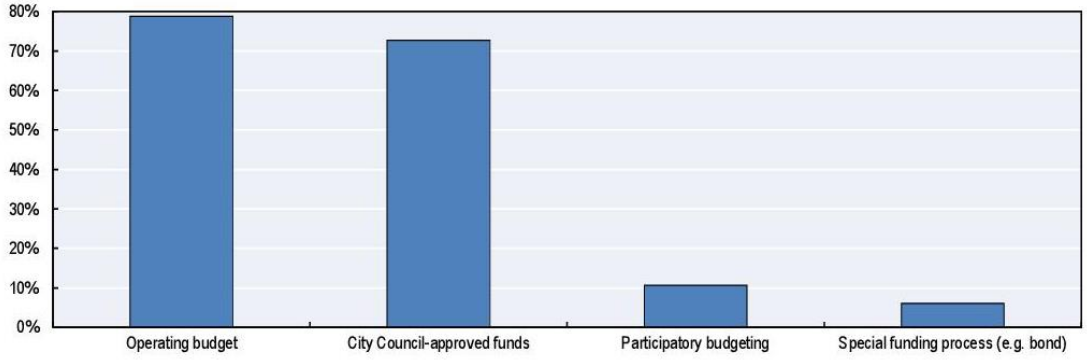
- **San Francisco, CA** (United States) innovation team receives funding from the city and, until recently, had a grant from the US Commerce Economic Development Agency to scale up Startup in Residence, a programme connecting start-ups with government agencies to co-develop technology solutions for government challenges. The city has also partnered with the State Department to host a foreign service officer as a member of the team for one year.

International sources

- **Ljubljana** (Slovenia) hires its innovation team using EU co-funding.

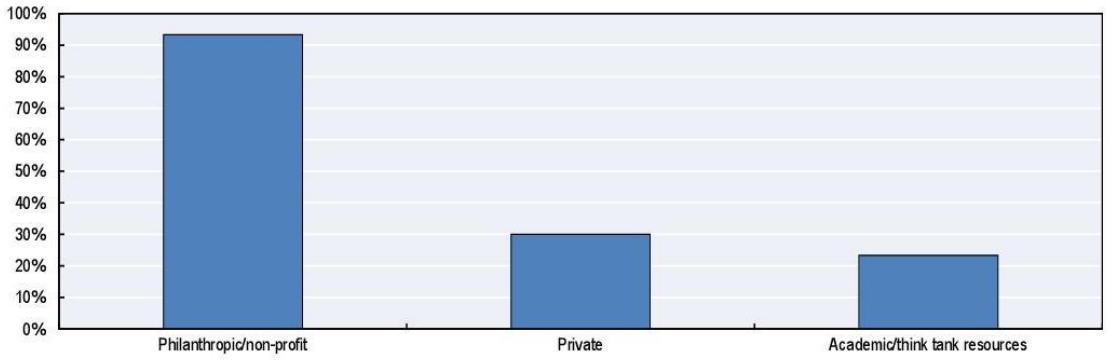
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Figure 2.16. Origin of municipal budget funding for innovation



Notes: Out of 89 surveyed cities, 70 reported having specific funding available at the municipality level to support innovation capacity. Among these 70 cities, 66 reported having specific funding to support innovation capacity originating from the municipal budget. The figure represents responses from these 66 cities to Question 3.2 "To the degree you have funding that enhances your capacity to innovate, where does this funding originate from?". Surveyed cities were asked to select all options that apply. The vertical axis denotes the percentage among the 66 cities whose municipal budget funding for innovation comes from various municipal sources.
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Figure 2.17. Origin of external (non-public) funding for innovation



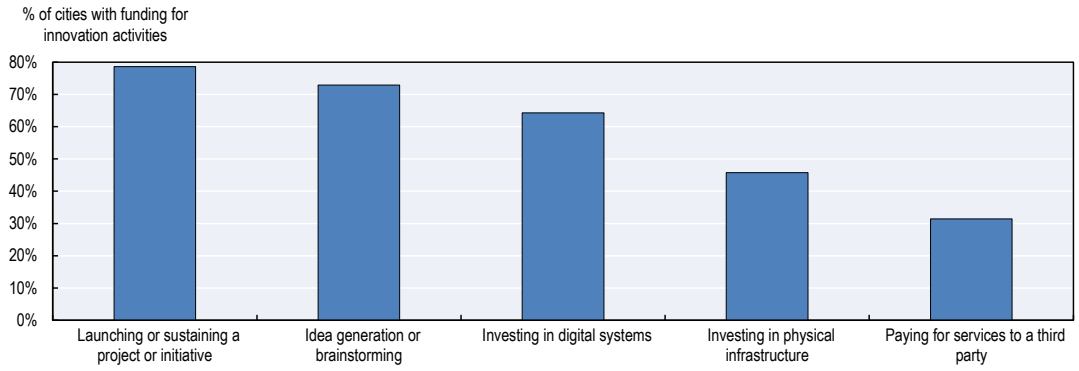
Notes: Out of 89 surveyed cities, 70 reported having specific funding available at the municipality level to support innovation capacity. Among these 70 cities, 30 reported having specific funding to support innovation capacity originating from external (non-public) funding. The figure represents responses from these 30 cities to Question 3.2 "To the degree you have funding that enhances your capacity to innovate, where does this funding originate from?". Surveyed cities were asked to select all options that apply. The vertical axis denotes the percentage among the 30 cities whose external (non-public) funding for innovation comes from various external sources.
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

There are several issues to consider in financing innovation in cities. First of all, municipalities need to allow innovative projects the budgetary flexibility to scale-up if successful, without removing oversights on how public funds are spent. For instance, the budget office in the municipality may allow and approve administrative units to reallocate funds within or across appropriations accounts to direct them to areas where innovation projects are taking place. It may be that different departments co-fund innovation work. Moreover, channelling funding for cross-cutting innovation work through dedicated innovation teams can help overcome the barriers that result from an inability to co-ordinate funding through distinct departmental silos. Another way to enhance flexibility is to allow unused funds to be carried over across fiscal years, with the approval of the budget office. Effective innovations in the internal operations of municipalities that deliver gains in efficiency will ideally in turn produce budgetary savings. In order to bolster long-term innovation capacity, these savings should be reinvested into scaling up promising experimental projects, deepening existing innovation efforts more broadly or developing new innovative projects (OECD, 2017[3]).

Cities are putting their dedicated funding for innovation to different uses. Most frequently (79%), innovation funding goes directly towards specific projects. Yet a majority of cities with funding for innovation are also investing in capacity building alongside specific projects, such as cross-cutting idea-generating sessions and skill-building workshops to build innovation methods. Cities also fund staff dedicated to innovation work.

Funding for innovation capacity may differ from year to year. In some cities, the innovation units need to send their budgetary requests to the management or budget office and funding may be given on a project-by-project basis. Therefore, funds could vary depending on the availability of resources.

Figure 2.18. Types of innovation activities being funded by cities



Notes: Out of 89 surveyed cities, 70 reported having specific funding available at the municipality level to support innovation capacity. The figure represents responses from these 70 cities to Question 3.3 "What types of activities are being funded by resources earmarked for innovation?". Surveyed cities were asked to select all options that apply. The vertical axis denotes the percentage of activities that receive funding earmarked for innovation.
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Box 2.5. Select examples of how budget for innovation varies from year to year

In **Houston, TX** (United States), funds cover innovation staff and overhead and the city relies heavily on grants from academia and the city tech community.

In **Jerusalem** (Israel), the city's i-team received ILS 10 million (New Israeli shekels) from the national government for its innovative projects; now the i-team receives 50% funding from a philanthropic organisation and 50% from the municipality.

Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Budgetary pressures are driving some cities to prioritise reactive measures instead of proactive activities, including innovation. OECD research has found that the budgeting routine in the public sector solves many problems for government, but it is certainly not calculated to prompt policy innovation (OECD, 2017[3]). Moreover, innovation in cities is only recently being legitimised as an area for investment within city administrations. However, cities' investment in innovation is largely marginal in comparison to other expenses. In some cases, multi-level governance co-operation and international collaboration help to overcome budgetary constraints. Table 2.3 provides a general overview of public expenditure in subnational levels of government across OECD countries. It shows that compensation of government employees is, by far, the largest expenditure category. By area, education and health consume most of the resources.

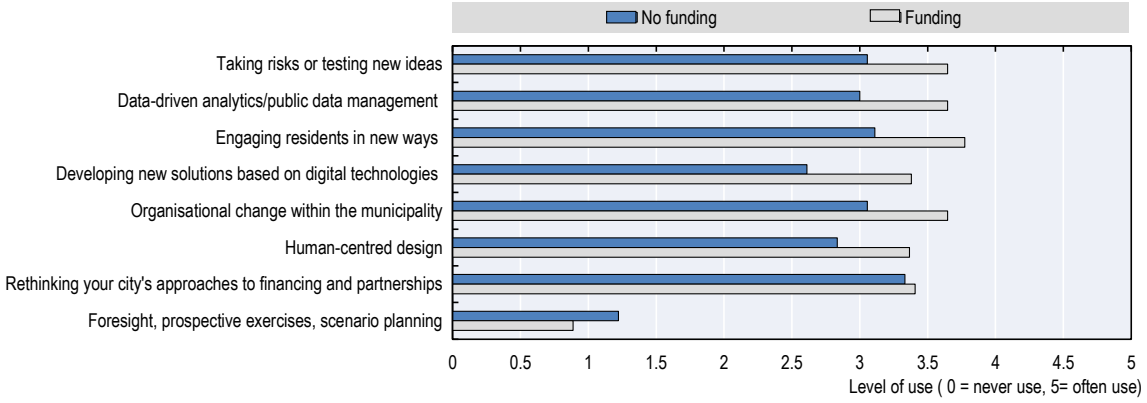
Survey results indicate that cities that have dedicated funding for innovation are more familiar with implementing new ideas (Figure 2.19). The category of innovation work that most strongly correlated with dedicated funding was the use of digital technology to develop new solutions. Cities with dedicated funding were, on average, 21% more familiar with engaging residents in new ways and data-driven analytics than cities without funding.

Table 2.3. Breakdown of subnational governments' expenditure in OECD countries

By category					
Compensation of employees	Intermediate consumption	Current social expenditure	Subsidies and current transfers	Capital expenditure	Other*
36%	21.2%	17%	9.2%	12.5%	4%
By area (COFOG)					
Education	Social protection	General services	Health	Economic affairs	Other**
24.8%	14%014.1%	18.1%	13.6%	15.3%	

Notes: * Other paid taxes, financial charges (including interest), adjustment for the change in net equity of households in pension funds. **Other: defence, public order and safety; housing and community amenities; recreation, culture and religion; environment.
Source: OECD (2018[14]), *Subnational Governments in OECD Countries: Key Data* (brochure).

Figure 2.19. Frequency of use of innovation approaches for cities with vs. without dedicated funding for innovation at the municipality level



Notes: Out of 89 surveyed cities, 88 cities responded to Questions 3.1 and 1.6. The figure represents results obtained by crossing the responses to Question 3.1 "Is there specific funding available at the municipality to support innovation capacity?" with responses to Question 1.6 "What would you say is the level of use or experience your city has with each of the following innovation activities?" (1 = Never used; 3 = Use sometimes; 5 = Use often). The horizontal axis denotes average points that surveyed cities assign for each innovation activity (on a scale from 1 to 5). "Foresight, prospective exercises, scenario planning" as one of the pre-defined innovation activities for Question 1.6 was not ranked (i.e. left blank) by 61 out of 89 surveyed cities, accounting for their rank point being lower than 1.
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

It is also noteworthy that, apart from foresight exercises, the domain of innovation work that correlates the least with the presence of dedicated funding is rethinking approaches to financing. Cities with dedicated funding for innovation reported only an average of 2% greater familiarity with rethinking their finances than cities without dedicated funding. This is likely a result of the fact that cities facing budget shortfalls and conditions of austerity may also be incentivised to reconsider their finances, despite the fact that they lack the resources to consistently fund innovative projects.

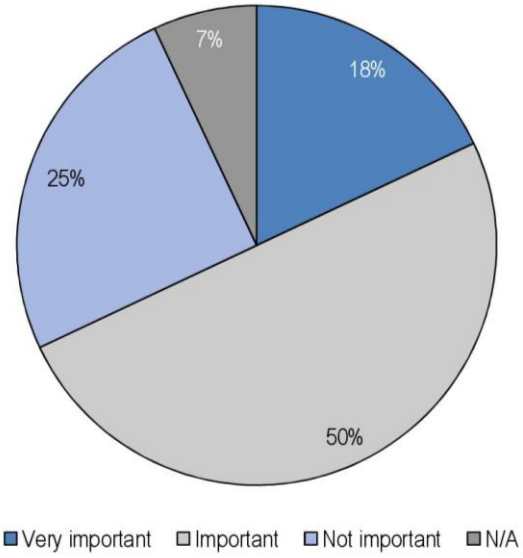
Human resource management and administrative culture

Invest in the capacity and capability of local public servants

Cities can help create a climate for new ideas by ensuring a dynamic management of the public workforce, especially senior policy makers. For that, at least three aspects should be considered: 1) ensuring that the workforce has the right skills and competences needed (talent); 2) ensuring the workforce is representative of the population it serves (diversity); 3) creating a climate that motivates public officials to engage in innovation. The way these factors are managed may create positive change or inhibit the creation of a culture of innovation (OECD, 2011[15]; 2019[16]).

The survey results show that almost 70% of responding cities considered human resource (HR) management important in improving their capacity and capability to innovate (Figure 2.20). Interestingly, 25% of cities claimed that HR involvement was unimportant to their innovation work, but this may be because some cities are unaware of the impact human resource management has on innovation. Across the literature, there seems to be agreement that staff determines the success or failure of innovation in the public service (Makin, 2017[12]; Walker, 2006[11]; OECD, 2017[3]; De Vries, Tummers and Bekkers, 2016[17]). The key question is how to motivate staff to innovate and create the right conditions to harness innovation processes within the city administration.

Figure 2.20. Importance of human resource involvement in supporting innovation capacity



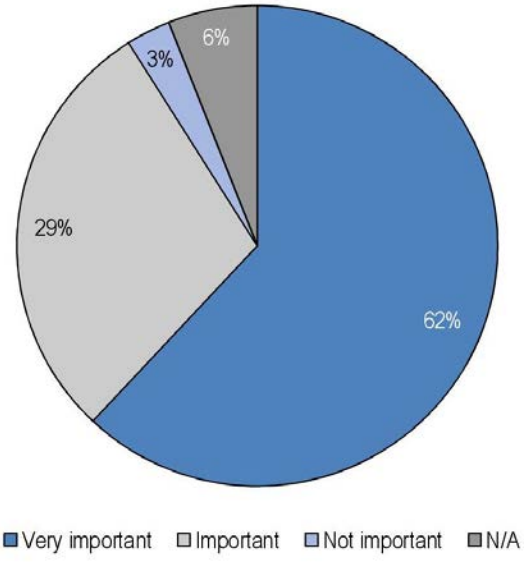
Notes: Out of 89 surveyed cities, 85 responded to Question 5.6 "How important are the following factors or practices in supporting innovation in your municipality?", where one of the factors is "Human resource involvement, support, and training". Surveyed cities were asked to indicate "Very important", "Important", "Not important" for each factor/practice.
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Survey results show that cities believe that workplace culture is a significant factor in supporting their innovation efforts (Figure 2.21). However, that culture depends largely on the combination of the aspects analysed above: committed political and managerial leadership, HR practices, and the importance given to innovation in the budget.

Promote a culture of reasonable risk taking

Cities looking to foster innovation should ensure that their managerial strategies also serve to empower civil servants and create a culture of creativity. Municipal employees should be encouraged to take risks. One strategy to promote this cultural shift might involve positive evaluation in performance reviews, award and recognition programmes for individuals working on new practices and programmes, or the creation of innovation-oriented networks and mobility programmes to bring people together across organisational boundaries (OECD, 2017[3]). A risk management strategy can help ensure the success of an innovation initiative by stating what the initiative is trying to achieve, whether it is changing an established practice or introducing a new solution, and where its mandate lies.

Figure 2.21. Importance of culture of innovation in supporting innovation capacity



Notes: Out of 89 surveyed cities, 85 responded to Question 5.6 "How important are the following factors or practices in supporting innovation in your municipality?", where one of the factors is "Culture of innovation within the municipal administration". Surveyed cities were asked to indicate "Very important", "Important", "Not important" for each factor/practice.
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Create or engage in networks that allow learning

Similarly, collaboration and communication – both horizontally and vertically – may incentivise the generation of innovative ideas. Horizontally, new networks across departmental silos can bring specialists in different domains into discussion and encourage joint project implementation. Vertically, municipalities can implement systems of upward feedback and forums for interaction between policy makers and employees working in the field with constituents. Literature shows that innovative risk takers are often at the "fringes'' of bureaucracy and these forms of collaborative networks can help to balance central authority and understanding of improvements needed in particular contexts (Sørensen and Torfing, 2011[18]).

Box 2.6. Tips to reinvigorate the workplace culture to support innovation

The workplace culture has a large impact on employee motivation to innovate. There are some elements that could reinforce the workplace culture in cities to make it fit for innovation:

- Create a learning environment – innovation cannot take place without learning, thus city authorities need to create an environment that is receptive to sharing ideas and discussions that allow for idea generation. For this purpose it may be useful to: formalise training and development plans; give recognition to employees who have developed new skills; evaluate the benefits of training; and formalise the process of knowledge and information sharing.
- Promote a culture of trust – public employees need to perceive that there is trust in their abilities and decision making. This is the foundation for building strong teams and producing results. It is incumbent for a manager/supervisor to set the example and build trust in the workplace. Some key actions: protect the interests of all employees, develop the skills of staff, and listen and treat people with respect.
- Encourage diversity in the workforce – fostering inclusiveness and diversity in the workplace is a way to develop an open-minded culture. Diversity can take many forms, from nationality and culture to gender and educational and socio-economic background. The recruitment process should be revised to attract people from different backgrounds.
- Stimulate experimentation – any city that is looking to innovate will need to give its staff the freedom to try new things and fail. The most successful organisations are those that are unafraid of failure and prioritise learning, growing and development from those experiences.

Sources: Mroz, D. (2013[19]), *How to Invigorate Innovation in a Stagnant Organization*, https://www.wired.com/insights/2013/10/how-to-invigorate-innovation-in-a-stagnant-organization; OECD (2011[15]), *Public Servants as Partners for Growth: Toward a Stronger, Leaner and More Equitable Workforce*, https://dx.doi.org/10.1787/9789264166707-en.

Data management capability

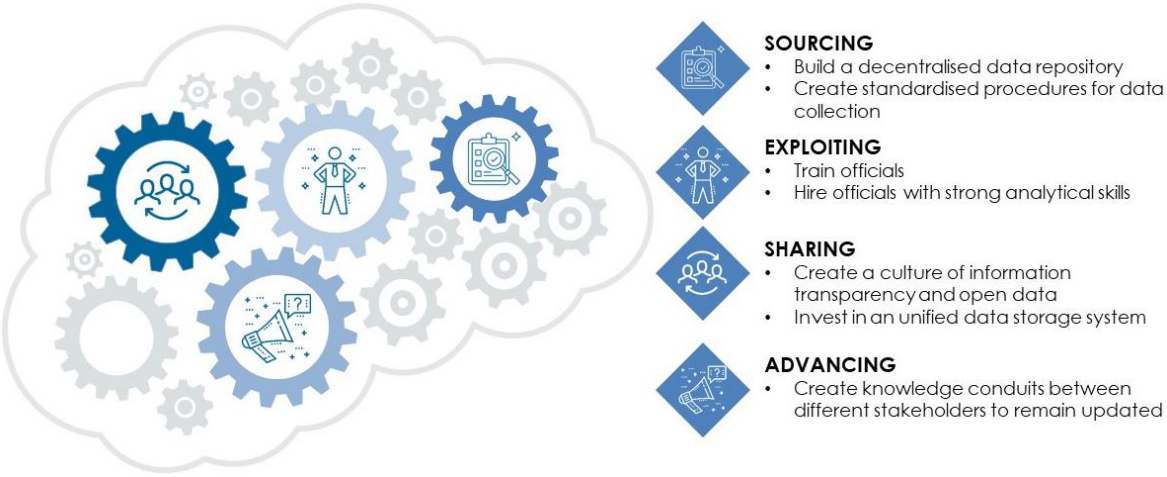
Produce and use data for decision making

When a city provides greater access to and makes better use of public data, it contributes to economic development and growth because it allows the creation of value. Cities are an important user, but also a key source of data. "Data-driven innovation is the use of data and analytics to improve or foster new products, processes, organisational methods and markets" (Martin et al., n.d.[20]). By making data regarding numerous aspects of urban life widely and freely available, cities can enable competition to flourish as entrepreneurial citizens create new solutions that bring down the marginal costs and inefficiencies of urban

services (Cohen, Almirall and Chesbrough, 2016[13]). Data help cities to balance what citizens perceive on service delivery and quality of life.

The OECD's Observatory of Public Sector Innovation (OPSI) has established a four-phase typology for the use of data and information. It consists of: 1) sourcing – the origin of data, information and knowledge; 2) exploiting – preparing information and data to be used to meet organisational challenges; 3) sharing – the information and data to support decision making elsewhere in the city; and 4) advancing – learning and generating knowledge from the organisation's own experience (OECD, 2015[21]; 2017[3]). Considering data and technological innovation capacities through this lens can help municipalities improve their internal operations and enable citizen innovation.

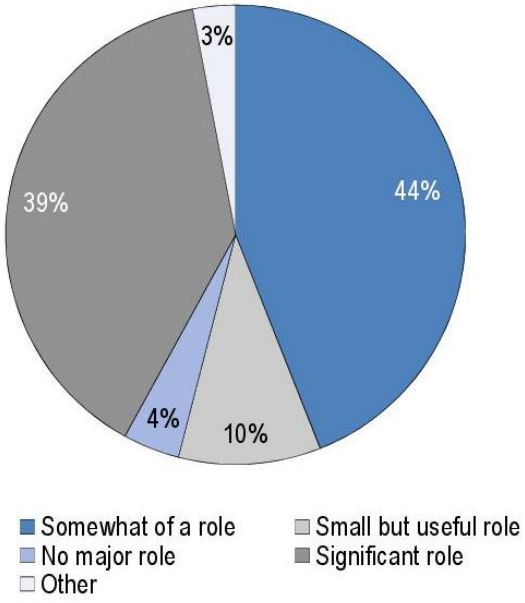
Figure 2.22. Improving data management capability



Sources: Adapted from the OECD's Observatory of Public Sector Innovation. OECD (2017[3]), *Fostering Innovation in the Public Sector*, https://dx.doi.org/10.1787/9789264270879-en; OECD (2015[22]), *The Innovation Imperative: Contributing to Productivity, Growth and Well-Being*, https://dx.doi.org/10.1787/9789264239814-en.

Effectively using data is important to strengthen cities' capacity to innovate. According to the survey results, data play a significant or somewhat significant role in decision making and policy making in 85% of the cities (Figure 2.23). Many cities have placed digital technologies and improved use of data at the heart of their innovation strategies (Box 2.7).

Figure 2.23. Role of data in cities' innovation efforts and decision making



Note: Out of 89 surveyed cities, 87 responded to Question 4.1 "How significant a role do data play in your city's innovation efforts and decision making?".
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Cities need to consolidate the practice of evidence-based policy making. Surprisingly for some cities, the importance of data in policy making and innovation work is not that evident.

Box 2.7. Select examples of cities with data strategies

- **Chelsea, MA** (United States) has recently launched an open data portal to further increase its effectiveness and accountability. The portal offers information on property values, demographics, crime and expenditures that is being employed for operational performance and citizen engagement. The city acknowledges the need to equip city administration staff with the ability to manage and analyse data.
- **Chattanooga, TN** (United States) has automated its data collection, cleaning and posting to reduce the barrier of entry for data-driven decisions. This has made for a more sustainable data programme and makes data more accessible. Now the city's priority is data maintenance.
- **Cincinnati, OH** (United States) developed a data analytics infrastructure, including a robust central data warehouse, to facilitate standardised, quality, up-to-date data analysis and publication.

- **Chicago, IL** (United States) has developed several innovative initiatives seeking to harness the power of data. One of these is Chideas.org, which enables the city to elicit new ideas from external sources. Another is WindyGrid, an internal system that brings together siloed information to foster co-ordination across departments and support data analysis. The city's biggest data-related challenge is developing the skills and capacity to conduct data analysis.
- **Paris** (France) has made considerable investments in boosting its data capacity. Between 2014 and 2020 the municipality plans to invest EUR 1 billion in smart city technologies, such as the Internet of Things, that will allow it to harvest real-time information about its service delivery. The city has also created a chief data officer role tasked with mainstreaming data analysis throughout the municipality. To gather and analyse a wider range of data, it has cultivated multiple partnerships with public and private actors, such as Etalab. The city has also created a centralised data platform (opendata.paris.fr) to allow citizens to boost their innovations using publicly available information. However, work on data repositories and training of civil servants to make them more aware of the importance of data needs to be enhanced.
- **Tulsa, OK** (United States) created the Urban Data Pioneers programme to improve the use of data throughout the city. By putting subject-matter experts – from inside and outside city hall – together in teams, the programme promotes learning data analysis techniques and informs the mayor's team with analysis of data that leads to policy.
- **Wellington** (New Zealand) has developed a data governance structure that allows the city to deploy the Internet of Things and enable its field staff to collect data. The data are shared with constituents to engage them in developing solutions to meet the citizens' needs. The city's modulation and standards approach has allowed it to work across multiple jurisdictions, cities and levels of government and with non-governmental organisations.

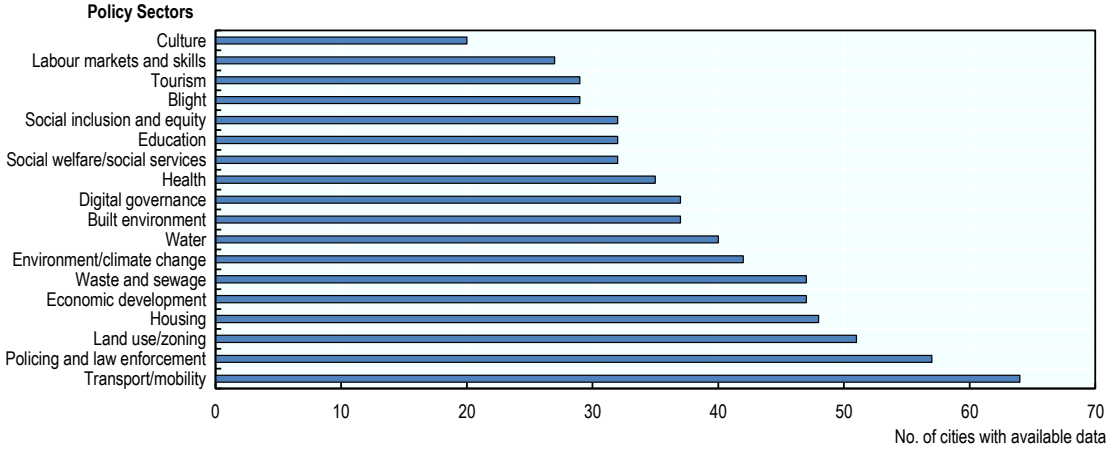
Source: Answers to Question 4.6 "Is there anything more you would like to tell us about data, communications or other tools your city uses in relation to innovation?" of the OECD/Bloomberg Survey on Innovation Capacity in Cities 2018. For Paris: https://www.paris.fr/services-et-infos-pratiques/innovation-et-recherche.

Cities need to improve their data management capability

Making data actionable remains a concern for cities. Cities produce a large amount of data, and these data have the potential to improve the way cities operate. However, survey results show that data availability by policy sector remains uneven (Figure 2.24). Cities collect more data on areas such as transport (64%), policing and law enforcement (57%), land use/zoning (51%), and housing (47%). Cities collect less data on areas such as social welfare and inclusion (32%), blight (29%), tourism (29%), and culture (20%). This is likely due to the differing natures of these policy sectors, since law enforcement and

transportation are more easily quantified according to statistical metrics than cultural work, which is likely to produce qualitative assessments.

Figure 2.24. Data availability (by policy area) to support innovation work in cities



Notes: Out of 89 surveyed cities, 85 surveyed reported that data play a role city's innovation efforts and decision making. The figure represents responses from these 85 cities to Question 4.2 "Does your city have sufficient data in the following policy areas to support your work on innovation?". Surveyed cities were asked to select all policy areas that apply; every policy area chosen corresponds to one unit.
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Some cities reported being in the early stages of improving their methods of data collection and analysis (Box 2.8). Others reported that they needed to consolidate the practice of evidence-based policy making.

Box 2.8. Select examples of initiatives to improve data management capability

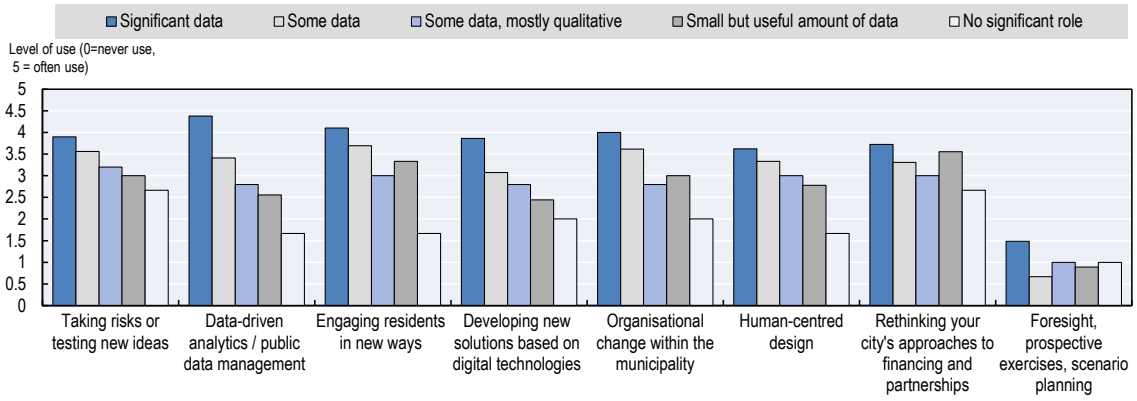
- **Houston, TX** (United States) is expanding its in-house resources to make data available for external consumption and to use external data internally.
- **Chelsea, MA** (United States) has recently launched an open data portal and is working to build staff capacity to analyse data and mainstream data analysis into its daily work.
- **Inverness** (United Kingdom) is raising awareness among its staff on the importance of data production and use. Currently, data are typically stored, retrieved and analysed under the initiative of a project leader or because of reporting needs.
- **Seattle, WA** (United States) is working to build its municipal staff's comfort with data and its importance for evidence-based policy in order to maintain focus on desired outcomes.

Source: Answers to Question 4.6 "Is there anything more you would like to tell us about data, communications or other tools your city uses in relation to innovation?" from the OECD/Bloomberg Survey of Innovation Capacity in Cities 2018.

An increased reliance on data tends to increase cities' familiarity with innovation practices

The use of data to enable policy work was the most clearly correlated with a city's familiarity with innovation work of all the variables considered in the survey. Strong linear correlation between the amount of data used by cities in their decision making and their familiarity with the eight categories of innovation work can be seen in Figure 2.25.

Figure 2.25. Frequency of use of innovation approaches between cities where data play a significant vs. insignificant role



Notes: Out of 89 surveyed cities, 87 cities responded to Question 4.1 and 88 cities responded to Question 1.6. The figure represents results obtained by crossing responses to Question 4.1 "How significant a role do data play in your city's innovation efforts and decision making?", with responses to Question 1.6 "What would you say is the level of use or experience your city has with each of the following innovation activities?" (1 = Never used; 3 = Use sometimes; 5 = Use often). The vertical axis denotes the average points that surveyed cities assign for each innovation activity (on a scale from 1 to 5). "Foresight, prospective exercises, scenario planning" as one of the pre-defined innovation activities for Question 1.6 was not ranked (i.e. left blank) by 61 out of 89 surveyed cities, accounting for some rank points being lower than 1.
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Notably, the two domains of innovation work, apart from data analytics, that most strongly correlated with a city's level of data use were "engaging residents in new ways" and "human-centred design". Cities with a high level of data showed greater average familiarity with innovative approaches engaging residents than cities that reported that data played no role in their decisions. Similarly, cities with consistent use of data were more familiar with human-centred design than cities lacking data in their operations.

Municipalities that use data consistently demonstrate improved capacity to rethink their challenges holistically and to tackle them. The results of the survey show that thorough use of data analysis can foster innovation at all stages of the policy cycle. Cities with a high-level use of data seem to be more familiar with innovation practices. The cross-cutting benefits of consistent use of data become even more apparent when considering that cities with thorough data also had twice the average familiarity with organisational change than cities without any data capacity. They are more capable of engaging externally with constituents as well as of reorganising internally to improve the operations of their bureaucracies. For example, Los Angeles (CA) focused on using data to increase resident engagement. As a result, the city was able to create an open data portal that now greets visitors with an invitation to "find the data useful for you", while its GeoHub online platform empowers residents with quick access to mapped sets of open data related to

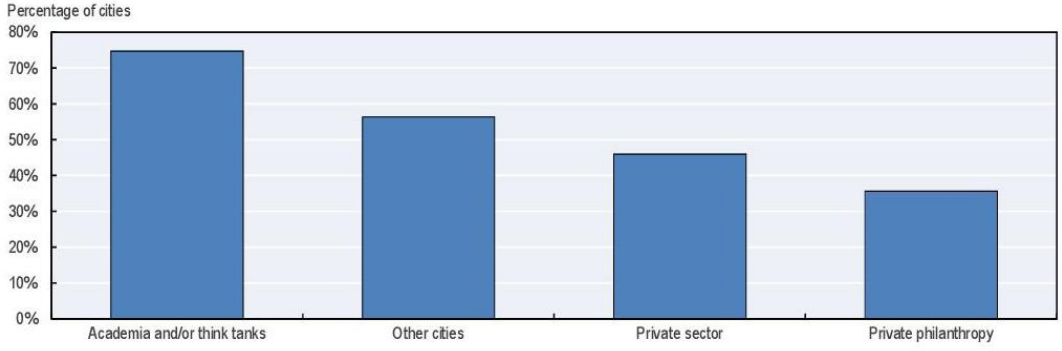
health, safety, schools and more. As a top performing city in the "What Works Cities Certification" programme, it demonstrates what "good" looks like in terms of gathering and using data to improve resident engagement.

Create collaborative partnerships with external actors to strengthen data management capability

In order to keep pace with rapid technological advancement and to improve their data collection capability, analysis and sharing, most cities build partnerships outside the public sector. These partnerships also help cities overcome knowledge and skill gaps with private developers and researchers. Indeed, co-operation within the public sector allows cities to access resources and competences they do not have, long-term innovation perspectives, idea generation activities, and, in some cases, share the risks inherent to innovation (Alves et al., 2007[1]). Partnerships are not for cities to outsource some of their capacities, but to help them build their capacity.

Survey results show that 75% of cities that reported that data play at least some role in their work have built relationships with academia and think tanks to gather and analyse data (Figure 2.26). A total of 56% of surveyed cities that said data play a major role in policy making have also reported that they have built partnerships with other cities. This could be because cities need to create economies of scale as data management may be expensive and complex, thus creating partnerships with other cities is a way to share costs, particularly if they belong to the same metropolitan area. Forming partnerships could be a win-win situation for large and small cities as it increases efficiency and accuracy.

Figure 2.26. Partnerships established by cities to enhance data work



Notes: Out of 89 surveyed cities, 85 reported that data play a role city's innovation efforts and decision making. The figure represents responses from these 85 cities to Question 4.5 "In your city, has your municipality developed any partnerships with the aim of collecting or analysing data to fuel innovation capacity or strategy?". The vertical axis denotes the percentage of municipalities collaborating with different external actors for their data work.
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Box 2.9. Select examples of partnership initiatives to improve cities' data management capability

- **Bilbao** (Spain) has partnered with private companies, academic institutions, think tanks and cities in other countries through informal meetings, formal co-operation agreements and the European co-funded projects (Interreg, Horizon 2020, Urbact) to improve data management capability.
- **Stockholm** (Sweden) created Digital Demo Stockholm as a long-term collaboration partnership to conduct research for innovation. The partnership includes the city of Stockholm, the region of Stockholm, the Royal Institute of Technology and leading corporations (Ericsson, Scania, Skanska, ABB, Telia, etc.). Their aim is to become the world's smartest city by 2040, finding solutions to improve citizens' lives and creating the best climate for entrepreneurs. The partnership works on four areas: 1) access to clean water; 2) digital locks for the elderly; 3) technology for equal opportunity; and 4) efficient healthcare. In addition, Stockholm has recently moved from having its own statistical unit to partnering with SWECO, a statistical consulting company that now delivers all major statistics and analyses data on behalf of the city.
- **Arlington, TX** (United States) partnered with online retailer Amazon to allow residents to ask city-related questions to Alexa-enabled devices. Alexa is a virtual assistant developed by Amazon that is capable of responding to voice requests. Alexa is connected to the city's open data and can answer questions ranging from "what is my garbage pickup day?" to "where is my voting location?".
- **Louisville, KY** (United States) developed the Open Government Coalition to help other cities take advantage of private sector data-sharing agreements and deploy built-in solutions to make data actionable. It has partnerships with the University of Pennsylvania to analyse the data and provide additional insights for the Vision Zero project which promotes a different way to approach traffic safety.
- **Sao Paulo** (Brazil) has created partnerships with the Inter-American Development Bank and other cities to develop big data capability.
- **Chicago, IL** (United States) – Tech Plan has helped the city build partnerships across sectors to drive innovation. For instance, the project called the Array of Things (AoT) is a collaborative effort among leading scientists, universities, local governments and communities to collect real-time data on urban environment, infrastructure, and activity for research and public use. The AoT measures factors that impact liveability in cities, such as climate, air quality and noise.
- **Kansas City, KS** (United States) is placing significant emphasis on the expanded use of geospatial analysis and mapping tools to improve its efficiency. Thus, the city has implemented an enterprise agreement with ESRI, a mapping company, to make the software available to anyone in the organisation.

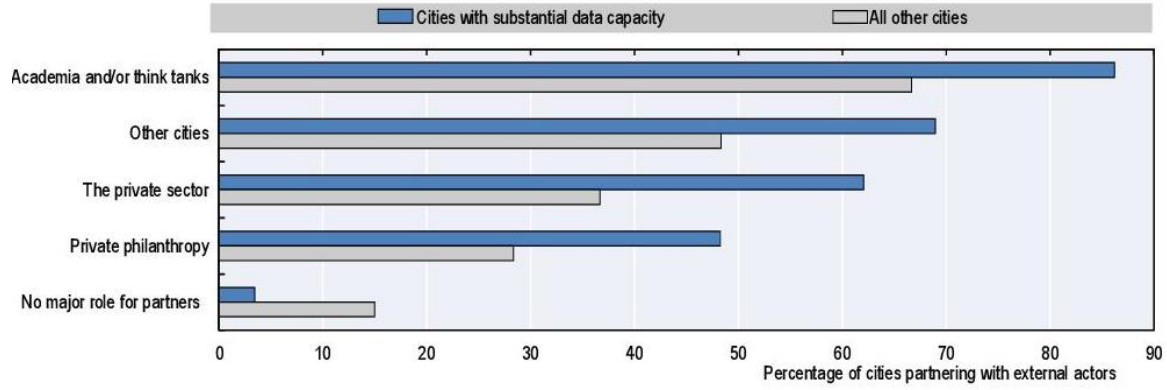
Sources: OECD/Bloomberg Survey of Innovation Capacity in Cities 2018. For Stockholm, information complemented through the presentation of Gunnar Björkman during the webinar on "Accelerating Cities' Innovation Capacity" on 12 June 2019. For Arlington (TX), information provided by Bloomberg Philanthropies. This city did not participate in the survey.

Academia and the private sector constituted the most common sectors for data-related partnerships in all responding municipalities. Survey results show the importance of building strong and diverse knowledge networks to enhance innovation capacity. Figure 2.27 shows how cities that reported using data thoroughly in their decision-making processes are far more likely to have partnerships with external data providers than all other cities. Only 3% of survey respondents claimed to use data consistently for innovation. In contrast, an overwhelming 86% of cities with strong data usage also reported having partnerships with academic institutions to help source and process their data.

The private sector was the domain with the largest percentage difference in partnerships between cities that consistently use data. Survey responses showed that 62% of cities that consistently use data have partnerships with the private sector, compared with 36% of all other municipalities that do. Private sector enterprises possess a great deal of data that could be of use informing policy makers. Moreover, there is the related issue that municipalities, when compared to the private sector, tend to have difficulty attracting the human capital needed to process these data. Both of these factors help explain why cities that establish partnerships with private sector firms may be more capable of incorporating data across their municipal operations.

However, cities should consider that private sector data and tech firms might seek to profit from their asymmetric information. Because firms often will not benefit financially from releasing their data and human capital publicly, the private sector is likely more reluctant than other sectors to engage in *pro bono* partnerships with municipalities. Therefore, economic interests might explain why municipalities have a greater likelihood of collaborating with academia than with the private sector (Kitchin, 2014[6]).

Figure 2.27. Partnerships across multiple policy sectors established by cities with substantial data capacity



Notes: Out of 89 surveyed cities, 85 responded to Questions 4.1 and 4.5. The figure represents results obtained by crossing responses to Question 4.1 "How significant a role do data play in your city's innovation efforts and decision making?", with responses to Question 4.5 "Has your municipality developed any partnerships with the aim of collecting or analysing data to fuel innovation capacity or strategy?", and then converting them into cumulative percentages for each category. The horizontal axis denotes the percentage of municipalities partnering with various external actors for their data work.
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Foster the move to open data

A big question for many cities is how to exploit their data to optimise public management and service delivery. Data by themselves have no intrinsic value; it depends on how to

extract the information (Martin et al., n.d.[20]). If implemented effectively, new smart infrastructure and the big data that it produces have the potential to improve local service delivery and efficiency, enable urban resilience, and cultivate a vibrant knowledge-based economy (Buck and While, 2015[7]). The open data movement is important for a couple of reasons. First, transparency. It is essential to let citizens know what data the government has – and how it is using it – so they can hold the right people accountable. Second, open data fosters greater interdepartmental collaboration and drives innovation through sharing data with third parties (Ende, n.d.[23]).

Leveraging partnerships for innovation

Promote collaboration with a diverse set of stakeholders

Strengthening cities' innovation capacity requires building partnerships with external stakeholders. Due to the complexity of contemporary decision making in the public sector and the economic, cultural and social dynamics, no level of government can govern without the collaboration of external stakeholders. Enhancing the innovation capacity of local governments may be possible by structuring better collaboration across disciplines and the establishment of governance innovation networks (Sørensen and Torfing, 2011[18]). External players could include the private sector, academic organisations, other local governments and citizens.

Innovation capacity also depends largely on how city administrations engage the private sector, the non-profit sector and citizens, as well as how they are made active players in the process of decision making and implementation. "The level of innovation in the public sector depends on how well it can manage collaboration, internally and externally, to create value, reduce barriers, and harness resources within co-operating organizations" (Wagner and Fain, 2017, p. 1210[24]). Collaboration between the public and private sectors has a greater potential for creating better and more effective public and private services and products (Setnikar Cankar and Petkovsek, 2013[25]).

The creativity of the local public sector may be bolstered by interacting with a multi-disciplinary environment where people from different professional and socio-economic backgrounds coexist and collaborate. A multi-disciplinary environment refers to organisations from different sectors and science and technology institutions. "The linked organizations combine multidisciplinary competences and localized complementary productive activities, integrating the diverse knowledge sets and skills …" (Alves et al., 2007, p. 30[1]) needed for new public products and services.

Ensuring the participation of a diverse array of constituents (and indirectly of competencies, skills and ideas) is also more likely to support and lead to successful innovation. This entails seeing diversity as equal opportunities by which people from different backgrounds, levels of income, gender, race, age, religion or belief, political views, and disability are able to participate in the policy-making process. Moreover, individuals have stronger incentives to engage in public policies that visibly and tangibly affect the environment in which they interact on a daily basis (Voorberg, Bekkers and Tummers, 2015[8]).

Partnering with citizens for innovation

Cities give great importance to engaging with citizens

A majority of municipalities viewed community engagement as very important in developing their innovation capacity, whereas only 25% of cities claimed consulting

firms and other partnerships were key to their innovation work. According to the survey results, municipalities place a much higher emphasis on engaging with community members and constituents than with external consultants. The widespread perception by municipalities that constituents represent valuable partners capable of contributing to innovative policy work can be seen in the fact that 80% of respondents have established partnerships with residents. Engaging civil society and non-profit organisations as partners in the design, production and delivery of services has the purpose of increasing users' satisfaction and reducing operational costs in a context of fiscal constraint (OECD, 2011[26]).

In a context of increased budgetary pressure and growing demand for public services, user-centred collaborative approaches in service design and delivery (also referred to as "co-production") can be a source of innovation. This is where citizens or service users design, commission, deliver or evaluate a public service in partnership with service professionals. This collaboration could lead to greater individual and community empowerment, increased user satisfaction, reduced production costs, and even new products and services.

Box 2.10. Select examples of city initiatives to engage with residents

- **Tulsa, OK** (United States) has created a "Civic Innovation Fellowship" to convene six innovative Tulsans to deeply understand and propose solutions to long-standing civic challenges; the team works for six months and learns the basics of city government so it can make proposals to enhance citizen participation.
- **Atlanta, GA** (United States) has a "Center for Civic Innovation" to find solutions to social inequality in the city by empowering residents to design local policy from the ground up. To support these efforts, the city makes sure that information about inequality and on the current interventions is readily available and accessible.
- **Peoria, IL** (United States) developed a community engagement programme, Help Shape West Main, that focuses on building the innovation capacity of residents and other community stakeholders to foster the economic vitality of neighbourhoods. The programme is based on the premise that the city does not always have the resources to tackle community challenges alone, it needs the assistance of residents and stakeholders.
- **Reykjavik** (Iceland) implemented the "My Neighbourhood" programme, which is a collaborative initiative between the city and citizens for prioritising and allocating funds for new, smaller scale projects and maintenance in the different districts.
- **Madrid** (Spain) has implemented over 800 projects in areas such as social policy, environmental protection and health through projects defined in partnership with citizens via consultations, proposals and participatory budgeting.

Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Improving engagement with citizens may require organisational and operational changes

There are several mechanisms available to cities to improve their engagement with citizens in order to tailor public services to constituent needs, improve trust in government and generate a vibrant urban environment conducive to social innovation. One way of

facilitating engagement with citizens for innovation is by tapping into new technologies (e.g. social media, mobile government or open data) to better align engagement with the rapid pace of policy making. While this option is not new, comparative analysis suggests that more can be done (OECD, 2016[27]).

Box 2.11. Select examples of the use of new technologies to engage with citizens

- **Chattanooga, TN** (United States) created a local "Enterprise Center", a non-profit organisation, to establish itself as a hub of innovation and improve people's lives through digital technology. The organisation helps manage the "innovation district" as a space for start-up entrepreneurs to work collaboratively. The centre also works to promote digital equity through programmes such as "Tech Goes Home". It offers underprivileged community members skills, hardware and connectivity in order to close the digital divide. For more information see: www.theenterprisectr.org.
- **Curridabat** (Costa Rica) implemented a mobile application called Yo Alcalde (I, Mayor) that empowers citizens to be a part of data generation. Through the application, citizens can report problems with garbage collection, traffic-related issues, etc. All data are geo-referenced and fed to the municipality's Territorial Intelligence Centre. The city aims to use the application to generate and aggregate citizen demands and take evidence-based decisions. For more information see: www.curridabat.go.cr/yo-alcalde.
- **Paris** (France) is using digital technology as a central axis of its participatory budgeting programme. Between 2014 and 2020, the city plans to allocate EUR 500 million to the programme. Residents from all backgrounds are invited to submit their proposals on line for how this money should be invested in their neighbourhoods. After the projects are developed and expanded by volunteers, citizens can then vote on line to decide which projects eventually receive public funding for implementation. Parisians can also track the implementation of participatory budgeting projects on line. For more information see: https://budgetparticipatif.paris.fr/bp.
- **Stockholm** (Sweden) launched TechTensta, a digital project that seeks to motivate and engage young people to explore together and see the practical value of knowledge through technology. TechTensta contributes to raising knowledge about ICT for young people in Järva, a socially exposed area in north-western Stockholm with a high proportion of immigrants. TechTensta seeks to help young people in their personal development, abilities, initiatives and driving forces through mentoring. For more information see: www.digitaldemostockholm.com/en/demo-projects/techtensta.

Sources: Answer to Question 4.6 "Is there anything else you would like to tell us about data or other tools your city uses in relation to innovation?" from the OECD/Bloomberg Survey of Innovation Capacity in Cities 2018.

Another possibility is to engage agents (citizens or organisations) capable of acting as intermediaries between distinct organisations. These agents fulfil a variety of functions. They can support efforts to gather, develop, control and disseminate outside knowledge within distinct organisations, including community organisations. They can also play key roles as brokers that connect innovation seekers with municipalities providing the space

and resources for collaborative innovation work to occur. Over the course of a project's lifespan, intermediaries can be crucial in providing support by orchestrating technical or stakeholder knowledge and supporting implementation or commercialization (Voorberg, Bekkers and Tummers, 2015[8]). This was the case of the city of Busan, in Korea, where the participation of the community and a few dedicated artists who acted as activists or facilitators for the regeneration of a village, were central to the successful regeneration of the district (Box 2.12).

Box 2.12. Innovative urban regeneration: The case of Busan

In Busan Metropolitan City (Korea), the so-called Gamcheon Culture Village is an example of social innovation that led to the economic development of the district via culture. In the past, the region had a reputation as having fallen behind with its development under the name of Taegeukdo Village. At the end of the 20th century, Gamcheon region was gradually becoming a slum; people were leaving the town due to new city development and industrialisation, and the number of vacant houses was rapidly increasing.

In 2009, Gamcheon Culture Village began to transform itself through art projects and through a series of cultural projects which transformed the village. As a result, the village came to be known as Gamcheon Culture Village as small cafés and shops opened in the village. The village's selection for the village art promotion project of the Ministry of Culture, Sports and Tourism in 2009 was a key moment for Gamcheon Culture Village. Following the selection, artists and residents in the Busan area who lived in Gamcheon Culture Village collaborated to revitalise the region by harmonising the existing facilities as part of an urban reconstruction project. A few dedicated artists acted as activists or facilitators for the regeneration of the village. Residents were encouraged to participate early in the planning process through the implementation stage.

Source: OECD (2019[28]), *The Governance of Land Use in Korea: Urban Regeneration*, https://dx.doi.org/10.1787/fae634b4-en.

Having staff dedicated to co-creation projects can serve to break down the barriers between the municipal administration and constituents. This approach also allows public officials a greater amount of discretionary autonomy, which is key in implementing the innovative and unorthodox solutions proposed by constituents.

Without robust, dedicated and flexible resources, collaborative initiatives risk fitting into the logic of austerity by foisting public services onto unpaid constituents rather than empowering constituents with new resources to innovate. Yet resource flexibility should not be equated with a complete lack of accountability. There is a need for qualitative and quantitative assessments of co-production efforts in order to better quantify the results they generate (Voorberg, Bekkers and Tummers, 2015[8]).

Other "[i]mmediate strategies include the reduction of physical and informational barriers to participation, coupled with the enhancement of the capacity, skills and knowledge of citizens to be able to contribute meaningfully to policy deliberations and actions" (Kim, 2011, p. 89[29]). For that, the government has to increase opportunities for engagement; gain

a better understanding of who participates; enhance the focus on evaluating the quality of outputs and outcomes (i.e. cost-benefit analysis); and broaden the scope and scale of engagement efforts.

OECD research suggests that there seems to be an imbalance between the resources (time, money and energy) that authorities invest in engaging with citizens and civil society organisations and the amount of attention they pay to evaluating the effectiveness and impact of such efforts (OECD, 2005[30]). Despite growing awareness of citizen engagement in boosting innovation, one of the main weaknesses is the lack of evaluation of the government's action to enhance citizens' participation in policy making. Cities still need to: evaluate, in a systematic way, the effectiveness of public participation exercises; and develop the tools and capacity to evaluate its performance in providing information, conducting consultation and engaging citizens in order to adapt to new requirements and changing conditions.

Collaboration with the private and non-profit sectors

Enhancing capacity in the local public administration requires new forms of governance that facilitate collaboration between the cities/municipalities and the private and non-profit sectors. Innovation can be developed and implemented through "innovation co-operation" (Setnikar Cankar and Petkovsek, 2013[25]). Cities may establish partnerships with private organisations for data management or even service delivery. However, new ways and modes of interacting with the public, business and non-profit organisations are needed. Possible partners for collaboration are private enterprises, research institutions, other public organisations, non-profit organisations and citizens as users. This collaboration could come at any stage of the innovation process. "When actors of different experiences, insights and ideas interact through processes in which ideas are circulated, challenged, transformed and expanded, the generation of ideas is accelerated and enriched" (Setnikar Cankar and Petkovsek, 2013, p. 1603[25]). Cities need to exchange ideas and resources within their organisational boundaries. And if they are to increase their capacity to innovate, they need to do so with external actors. Some actions cities can take to collaborate with external actors may include: administrative simplification and reduction of barriers arising from regulation and overly bureaucratic practices (Cunningham and Karakasidou, 2009[31]); and multi-sectoral and multidisciplinary networks that allow for openness and dynamic contact between individuals and teams from different organisations (Alves et al., 2007[1]). Several cities reported having created partnerships with external actors for innovation. Another organisational strategy cities have deployed to improve their collaborative initiatives has been to appoint a policy entrepreneur. These could be elected politicians, leaders of interest groups, or even non-governmental organisations or consultants who use their knowledge to propose solutions to emerging problems.

Box 2.13. Examples of innovation partnerships between cities and the private and non-profit sectors

- **Athens** (Greece) has included civil society in decision making, but it is expanding collaboration with the untapped capacity of the wider city by including universities, the private sector and philanthropic foundations.
- In **Akron, OH** (United States), public officials, the county of Summit staff, the GAR foundation and the Greater Akron Chamber of Commerce are engaged in an intensive project to generate a blueprint for a high-functioning and collaborative economic development ecosystem. "Elevate Akron" puts forth five strategies to better position Akron in order to transform the culture of economic development and expand opportunities for all residents.
- **Chelsea, MA** (United States) has created a partnership with the Harvard Kennedy School's Innovation Field Lab to get assistance to predict and prevent problem properties from arising; the university designs a proposal and then a research fellow is sent to the city to implement the project.
- **Huntington, WV** (United States) partnered with the local university to design patrol areas for the police department based on hard crime data to allocate limited personnel resources more efficiently to achieve better response rates and reduce crime.
- **Otsu City** (Japan) is promoting partnerships with the private sector to use their experience and expertise for the maintenance of public facilities.
- **Lansing, MI** (United States) is partnering with eBay for Retail Revival programme to support small businesses and growth.
- **Medellín** (Colombia) has installed a University, State and Enterprise Committee that meets monthly to find common points and join efforts to promote the economic development of the city.
- **Kansas City, KS** (United States) partnered with a local startup PayIt LLC to develop the mobile application "myWyco" to facilitate payments and access to county and city services.
- **Memphis, TN** (United States) – the innovation team works with the FedEx Institute of Technology to run an Innovation Bootcamp on the city's civic challenges. Employees from the city's large employers work on the city's priority projects during a three-day sprint to accelerate innovation processes and develop new ideas for prototyping.
- **San Francisco, CA** (United States) – the innovation team has a director of partnerships who facilitates partnerships between city departments and with the private sector (both *pro bono* teams from large companies and pilots with start-ups).

Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Note

[1]. Most of the innovation teams supported by Bloomberg Philanthropies have survived changes in the political leadership of cities.

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3. Cities' innovation capacity – the way forward

This chapter begins with a discussion on the importance of assessing innovation initiatives in the public sector. Then it will discuss some of the key gaps that researchers and policy makers need to fill to advance the field and support cities' innovation capacity. The chapter will then move to present the Athens Road Map on Innovation for Inclusive Growth as an additional tool for cities. Finally, the chapter will propose a checklist of measures cities could take to improve their innovation capacity based on the findings of the OECD/Bloomberg Survey of Innovation Capacity in Cities.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Assessing innovation outcomes

Why assessing innovation matters

Assessing the outcomes of innovation in cities fosters accountability to citizens and donors, helps determine the effectiveness of the use of public resources, and establishes the contribution of the projects to achieve the city's socio-economic development goals. Like in the rest of the public sector, assessment is of particular political, economic and social importance. It could also help legitimise the city administration's engagement in particular innovation projects or areas. Assessing innovation in the local public service is motivated in part by the demand for benchmarking the efficiency and quality of public services and identifying the factors that contribute to desirable innovation outputs and outcomes (OECD/Eurostat, 2018[1]).

However, defining to what extent the success of an innovation policy stems from the city administration's effort to innovate is a complex matter. One of the key barriers is that the existing evidence is still rather anecdotal and limited to specific sectors. Moreover, while the project that brings about new services, products or processes may be due, in part, to an innovative measure, it may also be influenced by a range of other policy decisions and measures. For example, in 2015 Louisville, KY (United States) launched the AIR Louisville project, which aimed to measure air quality through crowdsourced data. The project is reported to have led to better health outcomes for residents and the entire community through new municipal policies addressing traffic congestion and increasing tree planting. Assessing the outcomes of the programme has led to the development of data-driven policies to improve air quality. Now the city is in discussion with other cities that face similar challenges with air quality and its impact on public health to replicate the project in their own communities.[1]

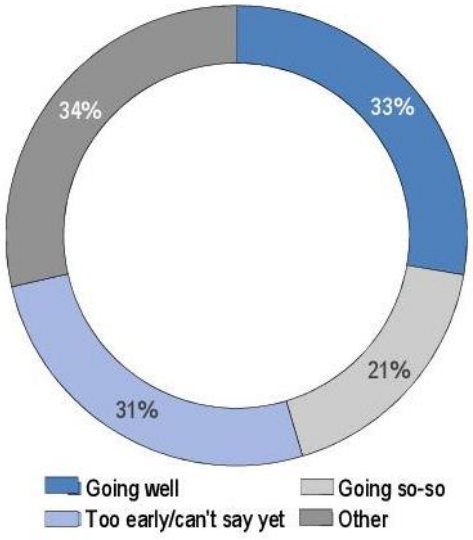
Qualitative and quantitative methods that assess innovation performance deserve further research and analysis. The evaluation of innovation outcomes requires an approach that encompasses a variety of factors and recognises the difficulties of establishing and demonstrating causal links. An innovation project may also have unintended results that should also be considered as part of the evaluation process.

How cities assess the impact of innovation projects

Formal innovation goals are one of the basic elements that cities can use to assess innovation outcomes. According to the survey, of the cities that reported having formal innovation goals, a little over half felt that they were doing "well" or "so-so" in achieving their innovation goals (Figure 3.1). For almost one-third of the cities it is too early to tell, which suggests they are in the primary stages of their innovation efforts.

Formal innovation objectives offer a great starting point to assess the effectiveness of innovation in a city. There are also a number of other activities that can assess their innovation outcomes. Overall, 43% of surveyed cities reported using resident engagement and sense of community, as well as quality and accessibility of public services, to determine whether innovation efforts are effective. A further 40% of cities use economic development. In addition, cities need to customise their methodologies for assessing innovation outcomes depending on the nature of their projects. The *Oslo Manual: Guidelines for Collecting, Reporting and Using Data on Innovation* provides cities with a framework for collecting, interpreting and measuring data on innovation (OECD/Eurostat, 2018[1]). The use of this manual could help cities create custom assessments to better understand the effectiveness of their innovation efforts.

Figure 3.1. Cities achieving their stated innovation goals



Notes: Out of 89 surveyed cities, 49 reported having formal innovation goals. The figure represents responses from these 49 cities to Question 5.2 "How would you say that your city is doing with regards to meeting your stated innovation goals?".
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Box 3.1. Select examples of city initiatives to assess innovation outcomes

- In **Kansas City, KS** (United States), the innovation department has been working with the mayor and the county administrator on evaluating the productivity of land-use policies. The work is shifting perceptions about the relative value of different types of development and driving conversations about how to reinvest in traditional neighbourhoods that can drive a higher return on investment and create a virtuous cycle of positive revenue gains.
- **Detroit, MI** (United States) measures the key outcomes of its innovation efforts by their contribution to the city's overall strategic goals. The city also has key indicators of progress on priority areas such as blighted buildings demolished, rental residences registered, etc. For instance, the assessment of the "HHF Blight Elimination Program" revealed that each HHF (Hardest Hit Fund) demolition increased the value of homes within 500 feet by 4.2%.

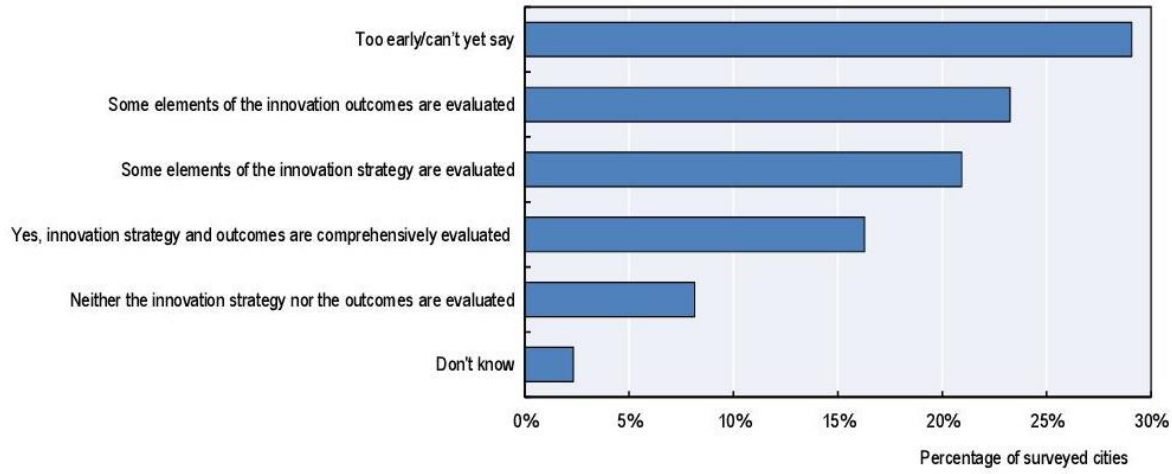
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018. Answers of Kansas and Detroit to Question 5.7 "What specific outcomes are you measuring to determine whether innovation efforts in your city are effective?". For Detroit, Policy Brief: Detroit Blight Elimination Program Neighborhood Impact, https://static1.squarespace.com/static/55e8c061e4b018cc4b5864bc/t/56151816e4b0f9222d31ae0a/1444222998440/20151006+Demolition+Report%5B1%5D%5B2%5D.pdf.

What problems are encountered to assess innovation

Overall, 16% of cities with formal innovation goals conduct a comprehensive and systematic evaluation of the impacts of their innovation strategy (Figure 3.2). Across surveyed cities, there seem to be poor evaluation systems of innovation initiatives or

projects. The large majority of cities only assess some elements of their innovation strategy and consider it too early to tell if they are effective.

Figure 3.2. Systematic assessment of the impact of innovation strategy by cities



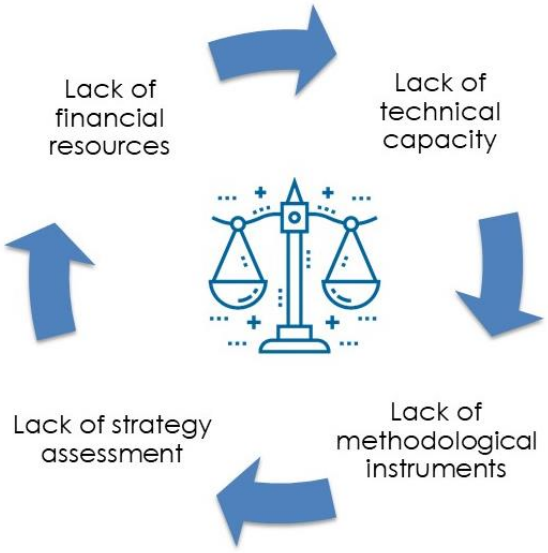
Note: Out of 89 surveyed cities, 86 responded to Question 5.4 "Does your municipality undertake a systematic assessment or evaluation of the impact of your innovation strategy?".
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

There are four main points that can be drawn from these results.

1. First, cities may lack the technical capacity and methodological instruments such as indicators to assess their innovation strategies. Cities seem to struggle to monitor the implementation of their innovation strategies and, therefore, lack information and data that assist them in an intermediate and long-term evaluation.
2. Second, when cities do not monitor or assess their innovation strategies comprehensively, they are unable to identify unexpected results and suggest changes to the project or initiative. Conducting an *ex ante* evaluation to assess the monitoring process and suggest indicators as baselines for *ex post* evaluations may be needed (European Commission, 2012[2]).
3. Third, cities may lack the financial resources to conduct systematic and comprehensive assessments of their innovation strategies. This process may be too expensive for some cities as assessments can, for instance, require interdisciplinary evaluation teams, which most of the time are composed of external agents such as universities; collecting data and conducting surveys; and dissemination of the results.
4. Fourth, cities must also be prepared for the political implications of an assessment. Positive results may reflect well on the political leadership of a city, but negative results may require engaging in a process of negotiation with other political forces and justification to citizens. It may be difficult for a city government to budget for innovation and specific tools and projects until they are proven. When programmes aligned to strategies work, it is much easier for the city government to use taxpayer money to continue or scale work and for citizens to appreciate government experimentation and support innovation.[2]

Moreover, according to the survey, factors such as administrative fragmentation (silos), levels of staff turnover, loss of institutional memory or lack of methodologies may limit the assessment of cities' innovation strategies (Box 3.2).

Figure 3.3. Factors that limit the evaluation of innovation strategies in cities



Box 3.2. Key challenges to measure innovation outcomes in cities

- The lack of methodologies to measure innovation outcomes, in particular early-stage innovation efforts. Generally, city departments report improvements in their operations, but the lack of a methodology makes it hard to determine to what extent any improvement was the product of innovation work. Due to the lack of methodologies, some departments tend to measure activity-based metrics rather than outcomes.
- The lack of systematic evaluations of innovation programmes, which limits the effectiveness of any measure as a barometer to determine success.
- Cities, in many cases, do not have enough relevant and reliable data to measure the impact of innovation outcomes. Cities still largely work in silos and data are not always shared within the local administration.
- Measuring the effectiveness of an innovation initiative is a medium to long-term process; during this time, loss of institutional memory and changes in leadership via staff transitions may set back efforts in measuring innovation outcomes.
- In some cases, cities focus on aspects that cannot be quantified, such as happiness, solidarity and people's dignity, thus any measure would be largely subjective.

Source: Based on the OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Innovation is helping cities improve services, operations and resident outcomes

Cities are innovating in a wide range of areas. These may vary from new ways of engaging with citizens to the redesign of recruitment processes or the use of ICTs for service delivery. According to the survey, cities considered that innovation is helping the most in improving service delivery (emergency services, housing, mobility and social services, etc.). Some cities are exploring innovative ways of providing services or designing new products to meet citizens' demands.

Box 3.3. Select examples of service delivery innovation in cities

- **Rio de Janeiro** (Brazil) has established community centres called *naves do conhecimento* (naves of knowledge) across the city where the local government provides training courses (seminars, workshops) in areas of innovation and technology to the poorest and most vulnerable residents.
- **Syracuse, NY** (United States) launched an early intervention service that has reduced eviction rates for at-risk residents by identifying tenants who have trouble paying rent within a week of missing a payment, rather than two or three months when they are already going to eviction court.
- **Austin, TX** (United States) is prototyping technology solutions for people experiencing homelessness to access their identity and personal records. This initiative has raised awareness in the community about the problem of identity access.
- **Long Beach, CA** (United States) launched a Justice Lab to provide new tools to first responders to divert residents in need out of the criminal justice system and toward resources like treatment and care.
- **Baltimore, MD** (United States) – the innovation team and the police department have modernised the recruitment and hiring process of police officers through online applications, new exams focused on the profile of a police officer and piloting fitness boot camps.

Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

Some other cities introduced innovation strategies to improve their organisational and administrative arrangements by redefining rules, procedures and structures. Another group of cities has introduced new ways of collaborating and co-operating with stakeholders to develop new products or provide new services.

Box 3.4. Select examples of organisational innovations in cities

- **Montreal** (Canada) is working with citizens, city employees and community leaders through the newly created "Urban Innovation Lab" to provide citizens with the tools to identify urban challenges and co-create solutions to build a more open, integrated and efficient city.
- **San Francisco, CA** (United States) – the Office of Civic Innovation supports city departments to introduce new approaches, resources and technologies to meet the city's priorities. It works with city departments, community partners and residents to manage the impact of demographic, economic, social and environmental challenges in the city.
- **Denver, CO** (United States) – the employee-led performance framework called Peak Performance focuses on technologies, processes and organisations to align and structure the workforce around the mayor's priorities.
- **Georgetown, TX** (United States) – the Performance Management Program and the Business Improvement Program seek to find effective solutions and inventive methods for service delivery by cultivating a culture of continuous improvement. The Business Improvement Program tears down department silos by promoting departmental review projects.
- **Madrid's** (Spain) Strategic Plan for Innovation and Modernisation of Public Management aims to develop a model of management for a more efficient and effective public service delivery through: improvements in the relationship between citizens and government; modernisation of public policies linked to public service delivery; and budget stability by optimising existing resources.
- **Tel Aviv's** (Israel) innovation team works in a collaborative way across the different municipal units to find solutions to problems by conducting research, developing ideas in partnership with stakeholders, preparing delivery (prototyping) and delivery. This way of working helps to overcome administrative silos for problem solving.
- **Paris'** (France) open innovation strategy is based on the premise that innovative solutions for the city's challenges will emerge from the collaboration among the city, the private sector, academia and citizens.
- **Seoul's** (Korea) city plan is based on the creation of public-private partnerships and social innovation aimed to encourage the participation of citizens in all aspects of policy making and delivery.

Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018. For Madrid: Comunidad de Madrid (2017), *Plan Estratégico de Innovación y Modernización de la Gestión Pública de la Comunidad de Madrid*, www.madrid.org/es/transparencia/informacion-institucional/planes-programas/plan-estrategico-innovacion-y-modernizacion-gestion.

Innovation is assisting cities to meet their strategic goals in service delivery (e.g. transport, water, waste collection), **improvements in government operations** (e.g. streamlining budget processes and workflows, fostering inter-agency co-operation), **and improving residents' outcomes** (e.g. improving health or job outcomes) (Figure 3.4).

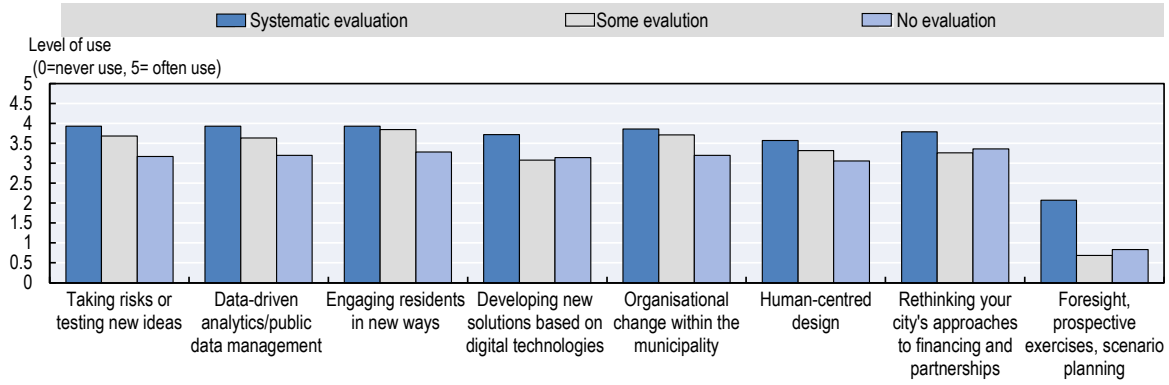
Figure 3.4. How innovation is helping cities improve their performance

Notes: The above results do not mean that innovation is exclusively helping to meet their objectives in one area. Cities were given the opportunity to rank their response and these three areas were the top ranked by cities.
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018, answers to Question 5.3 "What is innovation helping your city do better?".

"Engaging residents and other stakeholders" was the area with the lowest ranking. This is not surprising either as citizen engagement is generally a means to improve resident outcomes, service delivery and internal government operations. The other areas with the most commonly unranked outcomes were "servicing current obligations" (e.g. pensions), and "generating new sources of revenue or resources for innovation".

Cities that evaluate their innovation work are thus better positioned to scale up innovative projects that improve operations and less likely to engage in practices or projects that offer little return on investment. According to the survey results, cities that consistently evaluate the results of their innovation work have, across the board, greater familiarity with innovation than cities that lack procedural assessments (Figure 3.5). Due to the novelty of innovation work, it is often difficult to gauge its impact without impact assessments. Figure 3.5 also shows that cities that evaluate their innovation outcomes tend to be more experienced with foresight and prospective exercises, an area where cities engage the least.

Figure 3.5. Frequency of use of innovation approaches between cities with vs. without systematic evaluation of the impact of their innovation strategy



Notes: Out of 89 surveyed cities, 88 cities responded to Question 1.6 and 86 cities responded to Question 5.4. The figure represents results obtained by crossing the responses to Question 1.6 "What would you say is the level of use or experience your city has with each of the following innovation activities?" (1 = Never used; 3 = Use sometimes; 5 = Use often) with the responses to Question 5.4 "Does your municipality conduct a systematic assessment or evaluation of the impact of your innovation strategy?". The vertical axis denotes average points that surveyed cities assign for each innovation activity (on a scale from 1 to 5). "Foresight, prospective exercises, scenario planning" as one of the pre-defined innovation activities for Question 1.6 was not ranked (i.e. left blank) by 61 out of 89 surveyed cities, accounting for some rank points being lower than 1.
Source: OECD/Bloomberg Survey on Innovation Capacity in Cities 2018.

The gaps in the research agenda

Enhancing innovation capacity in cities is a wide domain that would benefit from further research on several critical issues.

- **Funding.** Understanding how different forms of funding shape the nature of innovation work in cities – and how this may impact public service delivery through the shaping of the ideas that are developed across cities (when there is collaboration) – is a matter for further research. Moreover, exploring different ways in which cities could co-finance innovation projects for mutual benefit, particularly in metropolitan areas, could help cities of all sizes strengthen their capacity. Further research is needed on how funding and specific staff roles contribute to innovation in cities.
- **Innovation teams.** These teams have proven critical to strengthen cities' innovation capacity. There are, however, some aspects that still require further research, including: a definition of the competences and skills of innovation officers, the type of training that is needed to facilitate their work, and the managerial flexibility teams should have to promote innovation across the local public administration. A future area of research may be dedicated to study the measures cities are implementing to enhance the work and longevity of innovation teams beyond political cycles.
- **Human resource management for innovation.** Exploring how cities can promote creativity and associative thinking in the local workforce through a more flexible management of human resources is an area that requires further exploration. More information is needed regarding how mobility programmes can increase the talent available in the local workforce, and how cities manage change in a way that is

conducive to innovation. In addition, further research is needed on performance management and the kind of awards and recognition programmes that promote innovation in the local workforce. There is little information on how cities link the management of local employees to the institutional innovation goals and strategies of the city. How cities communicate these the goals and strategies to employees is also an area that requires further research.

- **Risk management.** A better understanding of how cities manage and reduce uncertainty when venturing into innovative projects and how cities assess the environment and set the pre-conditions for successful implementation of an innovation strategy may help move the research field forward.
- **Public procurement for innovation in cities.** At the national level, countries have been implementing a number of policy measures and instruments to encourage and foster the strategic use of public procurement to stimulate innovation in the public sector. At present, 80% of OECD countries support procurement for innovation and 50% have set an action plan as part of a broader innovation for procurement strategies (OECD, 2017[3]). Two of the main reasons for using public procurement for innovation are the growing demand for new products and services and the need to improve the performance of existing services and quality of goods at lower prices and higher levels of energy efficiency. However, these studies focus mostly on national level strategies. How cities make the most of procurement to support and unleash the impact of public sector innovation requires empirical research to provide a framework for action tailored to cities' needs and contexts.
- **Property rights.** Patents and the ownership of intellectual findings could encourage creative activity. How cities use patents and intellectual property rights to enhance public sector innovation is an area that deserves further empirical research. Patents offer innovators recognition for their creativity and enable them to own the returns of their investments. This could be an incentive for cities to form partnerships with employees in the commercialisation and diffusion of innovative services and products. There is little research on how employees who come up with innovative ideas for improving public service delivery and products benefit from their creations.
- **Civic engagement.** Opening the public sector to civic engagement and innovation is not automatic. The increase in the implementation of engagement practices has not necessarily led to an increase in the perception of quality, trust, legitimacy and innovation. Two key issues to analyse in future research are the performance of engagement practices and who actually participates and benefits from engagement initiatives.
- **Measuring innovation outcomes.** How cities measure the impact of their innovation efforts is a matter for further study. There does not seem to be a clear path in how cities measure the effectiveness of their innovation strategy. The survey results do, however, show a growing awareness among cities of the need to measure outcomes. To achieve this, it is necessary to define the most appropriate types of measures to assess innovation. This research should include aspects such as metrics defined from the outset of the programme, monitoring progress, cost effectiveness, data collection for evaluation and indicators to define success.

A checklist for enhancing cities' innovation capacity

As a result of this survey, we have found that cities can increase their innovation capacity when they excel in the following five factors: 1) innovation strategy; 2) leadership and staffing; 3) data use and capacity; 4) resources and funding; and 5) outcomes (evaluations and results). City governments support innovation in a wide variety of ways that largely depend on the socio-economic context, resource allocation and the sophistication of their administrative culture.

Based on these five factors, Box 3.5 provides a checklist that city leaders may wish to consider as they enhance their city's innovation capacity. It is intended to be a tool for cities to evaluate their innovation capacity efforts. The checklist highlights key issues that may be considered during the process of promoting innovation as part of the city's strategies for growth and development, while recognising that the social, economic and political diversity of cities require flexibility in the methods through which they promote innovation. The checklist is not an instrument for comparative purposes, but it can provide useful information for those cities interested in moving closer to international practice in developing their capacity and capability for innovation. The checklist provides key ideas to guide city leaders through the complexities of strengthening their organisational and administrative arrangements for innovation. The checklist is complemented with four actions that governments need to take to enhance their innovation capacity based on previous OECD (2015[4]; 2017[5]) research, which are organisational attributes influencing public sector innovation.

Box 3.5. Considerations for enhancing innovation capacity: A checklist for action

Innovation strategy

- Formulate an innovation strategy that gives direction for the short, medium and long term and align it to existing city priorities. Involve stakeholders from within and outside the local public sector in the development of the innovation strategy.
- Adopt a clear political message communicated by leadership that shows the importance of innovation in meeting the city's goals.
- Create or engage in networks that allow learning from other organisations' and cities' innovation strategies. Develop norms that promote collaboration and embed it into the organisation's culture.
- Advance new organisational structures and leverage partnerships to enhance approaches and tools, share risks, and harness available information and resources. This includes developing innovative methods to structure teams, break down silos and work in partnership across organisations and sectors (OECD, 2015[4]; 2017[5]).

Leadership and staffing

- Consider the installation of innovation units/teams and their placement within the administration according to the city's priorities and enable distributed leadership.

- Develop the organisational, regulatory and governance structure that provides the environment and conditions to support a culture of innovation.
- Invest in the capacity and capability of public servants, which includes building the culture, incentives and norms to facilitate new ways of working. The way employees are selected and managed should also be considered, as it has an impact on an organisation's innovation capacity (OECD, 2015[4]; 2017[5]).
- Ensure middle and senior managers as well as members of the innovation units/teams receive regular training in human-centred design and behavioural nudges. Ensure that products, services and systems address the core needs of those who experience the problem.
- Promote diversity in experiences and skills in the local public workforce through attracting and recruiting people from different backgrounds regardless of gender, race, age, income level, political views, etc.
- Ensure that internal rules and processes are balanced in their capacity to mitigate risk while processing resources and processing information (OECD, 2015[4]; 2017[5]).
- Promote a culture of taking reasonable risks and learning from failure.

Data management capacity

- Ensure the production, free flow, and utilisation of data and knowledge across the public sector to support decision making (OECD, 2015[4]; 2017[5]).
- Create collaborative partnerships with external actors to strengthen data management capability.

Resources and funding

- Set up a specific financing framework for supporting innovation work within the local administration.
- Allow more flexibility in budgeting management to reallocate funds and carry over unused funds.
- Promote innovative ways to pool financial resources across the administration where objectives align. Combining different sources of funding allows cities to build new partnerships internally and optimise resources.
- Explore and establish local revenue-raising initiatives to specifically target innovation efforts (e.g. competitive grants, competitions, land-based finance tools, crowdfunding, etc.).

Outcomes: Evaluations and results

- Conduct an impact evaluation of innovation projects/strategies and ensure their monitoring at all phases of implementation. This includes the impact evaluation of pilots and the creation of feedback groups to revise and adapt products and services.
- Ensure data (quantitative and qualitative) as well as the results of impact assessments and evaluations are used for decision making and improve as need be.

Another relevant instrument for cities to leverage the full potential of innovation is the Athens Road Map on Innovation for Inclusive Growth in Cities (see Annex B). In 2019, the OECD Champion Mayors for Inclusive Growth Initiative created and adopted the Road Map to promote policies and practices to build more prosperous and equitable cities where inhabitants enjoy high levels of well-being. Taking into account the specific national and local contexts, the Road Map proposes a series of actions in social innovation, technological innovation and public sector innovation which intend to upscale cities' efforts to fight inequalities and foster inclusive growth.

Next steps

The first phase of the project, based on the pilot OECD/Bloomberg Survey of Innovation Capacity in Cities, scanned and identified initial patterns related to cities' innovation capacity and their strategy, goals and approaches, staffing and structure, funding and resources, data use, and outcomes. Building on the findings of the pilot, the next phase of the study aims to close gaps in understanding about data use and innovation investments in cities and explore whether cities' efforts and investments to strengthen their innovation capacity and capacity to use data is reflected in their citizens' outcomes. This phase will:

- **Go deeper on data. In connection with Bloomberg Philanthropies' What Works Cities programme,** as the move toward open data governance initiatives, evidence and data-driven decision making grows, it is important to understand the current state of data use in cities, how local governments are managing their data and to what extent their data use capabilities are leading to the well-being of residents. In this new exploration between the OECD and Bloomberg Philanthropies based on cities participating in the What Works Cities programme's assessment framework, an examination of the data ventures based on the What Works Cities' 45-point criteria will be used to determine the association between using data and selected well-being dimensions such as perceived quality and trust in local government, and of other well-being outcomes: education, employment, health, public transport access, satisfaction with city administrations or their service provision. This will include an examination of how cities use and produce data to guide decision making and will be a central part of the empirical research.
- **Investigate innovation capacity and well-being: Developing an evidence base for innovation in cities** by understanding the relationship between particular innovation capacity components and the impacts that result along material, quality of life and subjective well-being indicators related to employment, public resource access and satisfaction with city services.
- **Develop policy recommendations. Transforming research into action** by making the findings actionable is a key feature of this phase of the project. The findings from this study will result in guiding principles for decision makers unpacking the key "to-dos" to get innovation goals and strategies right, and to make the best possible use of data for decision making and policy improvement.
- **Build an innovation website. Innovation is for everyone, this online website** will showcase aggregate findings on innovation capacity in cities according to goals and approaches, staffing and structure, data access, and outcomes cities reported in the survey. The website will also include individualised snapshots of participating cities' innovation capacity, and will eventually reflect the findings and links between innovation capacity, data use and resident well-being indicators. It will serve as a repository of good practices and a tool for policy makers and decision makers in local governments around the world.

Notes

[1]. For further information see: www.oecd-opsi.org/innovations/air-louisville.

[2]. Answer from Los Angeles to Question 5.7 "Please tell us anything else about innovation outcomes in your city that you think could be relevant for us".

References

European Commission (2012), *Evaluation of Innovation Activities - Guidance on methods and practices*, European Union, Brussels, http://ec.europa.eu/regional_policy/information/evaluations/guidance_en.cfm#1 (accessed on 15 April 2019). [2]

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OECD (2015), *The Innovation Imperative: Contributing to Productivity, Growth and Well-Being*, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264239814-en. [4]

OECD/Eurostat (2018), *Oslo Manual 2018: Guidelines for Collecting, Reporting and Using Data on Innovation, 4th Edition*, The Measurement of Scientific, Technological and Innovation Activities, OECD Publishing, Paris/Eurostat, Luxembourg, https://dx.doi.org/10.1787/9789264304604-en. [1]

Annex A. Survey on Innovation Capacity in Cities

1. Innovation definition, goals and approaches

This section aims to understand ***how your municipality builds and maintains innovation capacity in the public sector,*** *and* ***what innovation capacity means and looks like*** *in your city administration. It also aims to understand* ***your city's goals and strategy for innovation in the public sector, as well as the approaches your city uses to innovate within the administration.***

We provide here working definitions of ***innovation capacity, innovation goals*** *and* ***innovation strategy*** *(you may have different definitions):*

- *Within a municipal administration,* ***innovation capacity*** *includes the human, financial and institutional resources and skills that can catalyse, implement and advance cutting-edge, inclusive, long-term and bottom-up problem solving. These resources and skills may include some of the approaches noted in the survey question below (Question 1.3), including: data analytics, resident engagement, human-centered design or other iterative design methods, behavioural economics, and inter-sectoral and inter-jurisdictional collaboration.*
- ***Innovation goals*** *are aspirational outcomes or impacts, in both the short and long term, which deliver better outcomes for residents, businesses and the community.*
- *A city's* ***innovation strategy*** *is a course forward for how to achieve innovation goals.*

1.1. Does your municipality have a formal innovation strategy?

We define "formal" to mean an agreed-upon definition of innovation in your city.

❑Yes → Please proceed to Question 1.2.

❑No → Please skip to Question 1.3.

1.2. If so, please provide 2-3 sentences describing your city's innovation strategy, which may include some of the terminology and approaches listed in Question 1.3. Please also provide a source for this information (e.g. web link).

Examples:

- *In our city, we convened leaders from agencies and departments across the administration, as well as resident and neighbourhood associations and civic leaders, to develop an innovation strategy resulting centrally from an evaluation of where the city was falling short with service delivery. Our innovation strategy is public and can be found here: www.innovation.org.*
- *Our city developed a comprehensive innovation strategy based on "backwards mapping", where we first fleshed out the change we want to see in 2030 and then developed a bold plan to get there. This document outlines our city's approach and provides a visual framework for our innovation activities. It is not public, but I will send it with this survey as a PDF attachment.*

1.3. In the following table, please select two terms that your municipality most centrally associates with innovation capacity. Please add your own words (up to two in total) if yours are not listed here. *Replies from cities will be compiled into a collective word cloud.*

Big picture rethinking	Experimentation, pilots and prototyping	Behavioural economics, nudging	Hierarchy-busting, breaking down silos
Data analytics	Technological innovation	Human-centered design	Foresight, scenario planning
Resident engagement, crowdsourcing	Bold leadership		

If you do not select two terms above, please list up to two here:

1. Other term not specified above: _____
2. Other term not specified above: _____

1.4. Would you say your city approaches innovation capacity at a holistic, macro level, or within specific policy domains?

Please select all that apply:

❑ We think about innovation in specific policy areas/domains → *Please proceed with Question 1.5.*

❑ We think about innovation capacity at a holistic, macro level → *Please skip to Question 1.6.*

❑Other. Please specify: _____

Example:

- *Our city's innovation capacity efforts are, for the moment, focused internally on rethinking our human resources and city administrative services.*

1.5. Which two policy areas would you say are most prioritised in your municipality's innovation work? Please add your own policy area or issue (up to two in total) if yours are not listed here.

Transport/mobility	Economic development	Land use/zoning	Built environment
Blight	Housing, homelessness	Social welfare/social services	Policing and law enforcement
Waste, sanitation, sewage	Digital governance	Health	Water, public works
Labour markets, jobs, skills	Education	Social inclusion and equity	Environment/ climate change
Culture	Tourism		

If you do not select two terms above, please list up to two here:

1. Other term not specified above: _____
2. Other term not specified above: _____

1.6. What would you say is the level of use or experience your city has with each of the following innovation activities?

Please select the appropriate level of use or experience for each of the following activities: Never used; Familiar with/use rarely; Use sometimes; Regularly use.

___ Taking risks or trying untested ideas (e.g. prototyping new programmes or models to address a persistent city challenge).

___ Data-driven analytics/public data management (e.g. data storage/analytics; open data; big data).

___ Engaging residents in new ways (e.g. via digital technologies, co-creation, ethnography, etc.).

___ Developing new solutions based on digital technologies (e.g. use of drones or smart sensors).

___ Organisational change within the municipality (e.g. silo-busting; new internal performance management; staff training and capacity building on innovation tools or techniques; reforms to contracting or procurement).

___ Human-centered design (e.g. prioritising the end user at each stage of the design process).

___ Rethinking your city's approaches to financing and partnerships (e.g. new public-private partnerships; collaboration with neighbouring jurisdictions).

___ Foresight, prospective exercises, scenario planning.

___ Other, please specify: _____

Example:

- *Our city's substantive focus is on improving citywide service delivery; we use a range of the approaches above to get there.*

1.7. To what extent does your city's innovation work include partnerships within and outside the municipal administration?

Please select all that apply:

❑Innovation work is internal to our city administration.

❑ Innovation work engages other levels of government and public agencies (public authorities/school districts, regions/counties/territories, national government, other municipalities).

❑Innovation work engages private firms and industry.

❑Innovation work engages not-for-profit/non-governmental organisations, the philanthropic sector, or academia/think tanks.

❑Innovation work engages city residents and resident associations.

❑Other. Please specify: _____

Example:

- *Our innovation team itself hosts participatory planning sessions, meaning that we interact with residents directly and not through any formal group or association.*

1.8. *[Optional]* In no more than 2-3 sentences, please let us know if there are any types of innovation methods or approaches on which your city staff would want or benefit from training?

Example:

- *Our city has been following with great interest the budding field of behavioural insights and behavioural economics. We would benefit from training about what constitutes effective "nudging".*

1.9. *[Optional]* In no more than 2-3 sentences, please tell us anything else about your city's definition of innovation capacity, your city's innovation strategy, or your innovation goals and approaches.

Example:

- *In our city, we have good experience with foresight exercises and scenario planning, given our region's unique climate and geography. Indeed, we have created some exercises of our own and would be eager to share our approach with other municipalities.*

2. Innovation organisation and structure within the administration

*This section aims to understand **how** innovation is organised within the municipal administration, for instance, regarding the existence of designated staff, team(s) and officer(s) for innovation.*

*We define **innovation staff** as the following (but you may have a different definition): individuals, teams, officers or other people that spend a considerable amount of city time thinking about the city's innovation capacities, goals or strategies, or supporting others to do so.*

2.1. Are there people in your city (such as, but not limited to) designated team(s) and/or officer(s) for public sector innovation in your municipality?

❑Yes → Go to Question 2.2.

❑No → Go to Question 2.7.

2.2. How many total innovation-related staff work in your municipality?

Note: Although there are likely many people in your city government doing innovative work, this question concerns staff in your city working specifically on building innovation capacity.

❑No dedicated staff.

❑Less than 5 staff dedicated to innovation.

❑Between 5 and 10 staff dedicated to innovation.

❑Between 10 and 15 staff dedicated to innovation.

❑More than 15 staff dedicated to innovation.

❑Innovation work is sprinkled throughout the municipal administration.

❑ Other: We don't have any city staff working on innovation, but we have hired (an) external consultant(s) to work on the topic.

❑Other. Please specify: _____

Example:

- *No dedicated staff work on innovation, but it is an approach we use throughout agencies and departments.*

2.3. What types of professional skills does your city have in its innovation staff?

Please select all that apply.

Innovation staff include those working on innovation capacity throughout the city administration, not in one place or office only.

❑ Data scientist/computer scientist.

❑Engineer (civil/mechanical/electrical/other).

❑Designer (including those trained in human-centered design).

❑Sociologist (including those trained in qualitative methods, ethnography).

❑Project manager (scholars or practitioners of leadership or management).

❑Staff with strategic communications/marketing experience.

❑Community or resident engagement staff (including staff trained in leading participatory outreach sessions).

❑Other. Please specify: _____

Example:

- *Although we do not have a formal innovation "team", our city has policy-specific innovation leads who convene senior staff at their respective agencies monthly to chat about long-term rethinking. They are all subject-area experts and leadership/management professionals.*

2.4. Please provide the name and title of the staff member leading your city's work on innovation, if applicable.

Example:

- *Jean Valjean; Chief Innovation Officer; leads a team of six.*

2.5. Where, in your city administration, does the innovation team sit?

❑Mayor's office.

❑City manager's office/head of city administration office.

❑Own department or body dedicated to innovation.

❑Innovation work is sprinkled throughout the municipal administration.

❑Innovation-related task group with delegates from different departments.

❑Other. Please specify: _____

Example:

- *Our innovation team sits within the Department of Environmental Protection because our work largely centres on climate resiliency.*

2.6. How long has this position or team existed?

❑Less than 1 year.

❑1-3 years.

❑3-5 years.

❑More than 5 years.

❑Other. Please specify: _____

Example:

- *Our innovation team in its current form is two years old, but before this time, we had a smaller team based in the mayor's office. This team existed for five years before its current iteration.*

2.7. *[Optional]:* In no more than 2-3 sentences, please tell us anything else about the staffing and structure of innovation in your city.

Example:

- *Although small, our city's innovation team has been growing rapidly. We are adding one to two people every few months and plan to eventually have a team of nine by 2020.*

3. Funding for innovation capacity

*This section aims to understand the **funding and resources** dedicated to developing and maintaining **innovation capacity** (as opposed to funding for programmes or activities resulting from innovative decisions) in your municipality. This could include, for instance, funding for staff of an innovation team; funding for data, infrastructure or systems that are intended to support the city's innovation work; etc.*

3.1. Is there specific funding available at the municipality level to support innovation capacity?

❑Yes → Please continue to Question 3.2.

❑No → Please go to Section 4.

3.2. To the degree you have funding that enhances your capacity to innovate, where does this funding originate from?

Please select all that apply.

❑From international/multilateral institution budget (i.e. European Union).

❑From central/federal/national government budget.

❑From regional/state/province/territorial budget.

❑From municipal budget:

- ❑City council approved funds.
- ❑Operating budget.
- ❑Special funding process (bond, mayoral special initiative funding, etc.).
- ❑Participatory budgeting/citizen-selected budgeting.
- ❑Other. Please specify: _____

❑External (non-public) funding:

❑Private.

❑Philanthropic/non-profit.

❑Academic/think tank resources.

❑Innovative financing tools (i.e. social impact bonds, crowdsourcing).

❑Non-financial: Staff on loan.

❑Non-financial: Other in-kind contributions (e.g. materials, infrastructure…).

❑Other. Please specify: _____

Example:

- *Our city does not have innovation capacity funding formally, but our mayor's office does have funding to engage residents in big picture city rethinking, which comes from crowdfunding campaigns.*

3.3. What types of activities are being funded by resources earmarked for innovation?

Please select all that apply:

❑Idea generation and brainstorming (e.g. new or updated plans).

❑Investing in digital systems, technologies or infrastructure (e.g. data sensors, an open data portal).

❑Investing in physical infrastructure (e.g. new smart bus stops).

❑Launching or sustaining a project or initiative (e.g. municipal identification card).

❑Paying for services to a third party (e.g. contract with a payroll company to restructure payroll).

❑Other. Please specify: _____

Example:

- *Our innovation team hosts design thinking sessions with experts from IDEO about how to improve city norms, policies and practices.*

3.4. *[Optional]* In no more than 2-3 sentences, please tell us anything else about the resources and funding to strengthen your city's innovation capacity.

Example:

- *Funding to develop stronger innovation capacity within our city differs every year. Now we have city council approved allocations in the operating budget, funded by property taxes, but previously these activities were funded entirely by philanthropic partners, which funded our first staff position dedicated to working on innovation.*

4. Data for innovation

*This section aims to understand how your municipality is generating, managing and/or sharing **data**. In most practices of public sector innovation, data are a crucial enabler for the municipality for more evidence-based decision making.*

4.1. How significant a role do data play in your city's innovation efforts and decision making?

❑A significant role – our city's decisions and policies are highly evidence-based.

❑Data play somewhat of a role, though oftentimes we make recommendations without data.

❑Data play a small but useful role.

❑No major/substantive role → *Please skip to Section 5.*

❑Other. Please specify: _____

Example:

- *Our innovation team uses data, but not just traditional quantitative data. We interview stakeholders, conduct needs analyses and host listening sessions; we consider the results of these sessions to be data.*

4.2. Does your city have sufficient data in the following policy areas to support your work on innovation?

Please select all that apply.

Please note: This question seeks to assess the extent to which sufficient data in a given policy area are available to city staff, regardless of whether these data are exploited to inform innovation work.

Transport/mobility	Economic development	Land use/zoning	Built environment
Blight	Housing, homelessness	Social welfare/social services	Policing and law enforcement
Waste, sanitation, sewage	Digital governance	Health	Water, public works
Labour markets, jobs, skills	Education	Social inclusion and equity	Environment/ climate change
Culture	Tourism		

If you do not select two terms above, please list up to two here:

1. Other term not specified above: _____
2. Other term not specified above: _____

4.3. Does your city have insufficient data in any of the following areas that would be useful to advance your innovation work?

Please select all that apply.

Please note: This question seeks to assess the extent to which data are unavailable and/or insufficient in a given policy area.

Transport/mobility	Economic development	Land use/zoning	Built environment
Blight	Housing, homelessness	Social welfare/social services	Policing and law enforcement
Waste, sanitation, sewage	Digital governance	Health	Water, public works
Labour markets, jobs, skills	Education	Social inclusion and equity	Environment/ climate change
Culture	Tourism		

If you do not select two terms above, please list up to two here:

1. Other term not specified above: _____
2. Other term not specified above: _____

4.4. What are the most challenging factors that prevent your municipality from optimising its use of data to support innovation goals?

For each factor, please indicate: Very challenging; Challenging; Not a challenge; Don't know.

___ Lack of reliable data.

___ Public distrust of government data.

___ Lack of staff capacity to collect, store or analyse data.

___ Lack of technical infrastructure/computing power, or lack of funding to optimise data use.

___ Lack of compatible data across different policy areas (i.e. different data sources, inconsistent definition of terms or formats across jurisdictions, agencies or departments).

___ One ministry/agency/unit might have data, but data are not routinely shared with other agencies/institutions.

___ Insufficient interaction with data producers that may be part of higher levels of government (e.g. national statistical office) or outside government.

___ Data collection and analysis is not an institutional priority/core value.

___ Other. Please specify: _____

Example:

- *Our biggest challenge actually lies in data analysis across departments – staff members take away different things from the same datasets when viewed from the lens of their department's perspective.*

4.5. In your city, has your municipality developed any partnerships with the aim of collecting or analysing data to fuel innovation capacity or strategy?

Please select all that apply:

❑Partnerships with the private sector.

❑Partnerships with academia and/or think tanks.

❑Partnerships with private philanthropy.

❑Partnerships with other cities, countries or government entities.

❑No major/substantive role for partners → *Please skip to Section 5.*

❑Other. Please specify: _____

Example:

- *In our city, we have developed a new engagement with a prominent private sector client to get data on street and transportation activity. This has been complemented by a new relationship with local civic group to produce a report on neighbourhood-specific challenges.*

4.6. *[Optional]* In no more than 2-3 sentences, is there anything more you would like to tell us about data, communications or other tools your city uses in relation to innovation?

Example:

- *Our city has developed a new tool called "Blight-Finder" to catalogue, spatially map and categorise different types of blighted properties across our city. This initiative was made possible through a partnership with a local civic group. However, our city is held back by its current lack of skilled staff in-house to analyse or understand these data.*

5. Innovation outcomes

*This section aims to understand the **broader outcomes of your city's innovation strategy, goals.***

5.1. Does your city have formal innovation goals?

*Recall that we define **innovation goals** as aspirational outcomes or impacts, in both the short and long term, which deliver better outcomes for residents, businesses and the community.*

❑Yes → Please proceed to Question 5.2.

❑No → Please skip to Question 5.3.

❑Other. Please specify: _____

Example:

- *Our city does not have formal innovation "goals," per se, but we do have a "Vision 2030" with an innovation strategy of how to get there. This document was crafted by the mayor's office and is available at: www.vision2030.org.*

5.2. How would you say that your city is doing with regards to meeting your stated innovation goals?

❑Too early/cannot yet say.

❑It is going well: We are meeting many or most innovation goals.

❑It is going so-so: We are meeting some innovation goals, but not others.

❑It is going poorly: We are meeting few or no innovation goals.

❑Other. Please specify: _____

Example:

- *The progress toward our stated innovation goals varies tremendously by department. We are meeting many goals in transport, mobility and the built environment, but we need to make more progress in our city's social and human services goals.*

5.3. What is innovation helping your city do better?

*Please rank your **top three** responses (1 = Helping you most; 2 = Helping you second most; 3 = Helping you third most):*

___ Improving internal government operations (e.g. streamlining budget processes and workflows; fostering inter-agency co-operation).

___ Cost savings and efficiency within the public sector.

___ Anticipating and managing future challenges (e.g. demographic, economic, social and environmental).

___ Servicing current obligations (e.g. pensions).

___ Improving service delivery (e.g. emergency services, housing, mobility, social services, etc.).

___ Improving resident outcomes (e.g. improving health or job outcomes).

___ Simplifying administrative procedures for firms and residents (e.g. licensing, permits).

___ Generating new sources of revenue or resources for the city (e.g. land-value capture).

___ Engaging residents and other stakeholders.

___ Other. Please specify: _____

Example:

- *Innovation is helping us better manage procurement and contracting, which leads to better service delivery and helps government service current obligations.*

5.4. Does your municipality undertake a systematic assessment or evaluation of the impact of your innovation strategy?

❑Yes, we systematically and comprehensively evaluate our innovation strategy, and our innovation programme outcomes.

❑We evaluate some elements of our innovation strategy, but do not systematically and comprehensively evaluate our innovation programme outcomes.

❑ We evaluate some innovation programme outcomes, but do not systematically and comprehensively evaluate our innovation strategy.

❑No, we don't evaluate our innovation strategy or our innovation programme outcomes.

❑Too early/can't yet say.

❑Don't know/cannot answer.

5.5. What specific outcomes are you measuring to determine whether innovation efforts in your city are effective? Please provide additional information in the box provided.

Please select all that apply:

❑We are not measuring achievement of our innovation goals at this time. → *Please skip to Question 5.6.*

❑Quality and/or accessibility of public services (e.g. expanded transport network).

❑Cost savings and efficiency within the public sector.

❑Job outcomes (e.g. employment rate, job quality, wages).

❑Environmental quality (e.g. air or water quality).

❑Housing conditions (e.g. affordability, quality).

❑Health outcomes (e.g. life expectancy, obesity).

❑Income inequality (e.g. income gap, segregation).

❑Resident engagement and sense of community (e.g. voting rate, engagement in civic life, volunteer rates).

❑Economic development (e.g. attracting new firms).

❑Other. Please specify: _____

Example:

- *In procurement and contracting, we measure the number of competitive bids and the length of time to award a contract across the city.*

5.6. How important are the following factors or practices in supporting innovation in your municipality?

For each factor, please indicate: Very important; Important; Not important:

__ Dedicated funding/financial support for innovation.

__ Strong focus on data and measurement to drive decision making and/or measure outcomes and impact.

__ A strong team/dedicated staff support.

__ Human resource involvement, support and training.

__ Leadership commitment from the mayor and prominent city actors.

__ Culture of innovation within the municipal administration.

__ Engagement with partners (advising firms, consultants).

___ Support from residents, businesses, universities and/or the broader community.

❑Don't know/couldn't say.

❑Other. Please specify: _____

Example:

- *The culture of our city partnerships with consultants and funders is the most important factor supporting innovation capacity in this city.*

5.7. *[Optional]* In no more than 2-3 sentences, please tell us anything else about innovation outcomes in your city that you think would be relevant for us. For instance, tell us how your innovative new projects led to impressive, positive or unexpected outcomes. Or tell us about some outcomes you would *like* to be measuring, but for which you do not have the data.

Example:

- *In our city, we have invested heavily in a new open data portal to publish public data from all city departments. While it has led to greater government transparency, an unexpected outcome has also been to facilitate data sharing within the municipal administration, ultimately helping to break down silos across city departments.*

5.8. *[Optional]* We want to highlight cutting-edge examples of *how* cities are innovating worldwide. Take one of your innovation capacity processes, practices or tools, and tell us more about it in a few sentences. You can also tell us about innovation approaches or partnerships, but try to focus more on the process and approach, and less on the activities resulting from them.

Please provide sources/web links and the name of the process, tool, approach or partnership so that we can find out more.

Example:

- *Our city developed a new partnership with a prominent local company for technology to map resident satisfaction on quality of life issues by neighbourhood, and partnered with a well-known local university for the data itself. The initiative is called the "Lives and Livelihoods" initiative, launched in 2014. You can learn more about the initiative at: www.livesandlivelihoods.org.*

End of survey.

Annex B. Athens Road Map on Innovation for Inclusive Growth

In 2019, the OECD Champion Mayors for Inclusive Growth Initiative created the Athens Road Map: Innovation for Inclusive Growth in Cities, which was adopted by the 60 mayors who make up the coalition. The Road Map documented a commitment from local leaders to leverage the full potential of innovation to promote innovation policies and practices that helped cities become places of shared prosperity, equal opportunity and champions of well-being for all members of society. Implementing the Road Map implies working together with communities, citizens, non-governmental organisations, businesses, academia, stakeholders and other levels of government in three main areas: 1) social innovation; 2) technological innovation; and 3) public sector innovation.

Strategies on social innovation aim to create a local fertile ecosystem for the promotion of better societal outcomes:

- Promote new ways to extend and deliver existing local public services and develop new relevant services that reach underserved areas of our cities.
- Respond to the needs of new local businesses by developing targeted local employment policies that connect low-skilled individuals and disadvantaged groups.
- Develop new and efficient ways to finance and provide social and community services for disadvantaged groups and the elderly such as healthcare, nursing services, barrier-free housing and home care.
- Promote social innovation, for instance through incubators and training, and work to establish a fertile ecosystem for innovation to flourish, that encourages flexibility, experimentation and upscaling.
- Ensure that those left behind are targeted with customised employment and activation programmes that are adaptable, relevant and respond to the new needs of the local labour market.
- Provide the enabling legal, fiscal and regulatory environment to support social enterprises and social entrepreneurs including, for instance, through social clauses in local public procurement procedures, and raise awareness about their contribution to the local economy and citizen well-being.
- Promote financial models or forms that encourage social economy, including those which engage citizens through co-operatives or other forms of social enterprises in areas such as affordable housing, decentralised renewable energy, food production and distribution.

Strategies on technological and digital innovation aim to build the cities of the future and enhance their contribution to better well-being outcomes:

- Explore how to effectively embrace and plan for sustainable smart urban solutions across different sectors such as energy, water, transport, solid waste, health, land use, but also to expand service delivery to underserved communities without over depleting resources.
- Leverage digitalisation to deliver more efficient, sustainable, affordable, and inclusive local public services and urban environments, for instance real-time data, electronic congestion tolls, smart parking systems, Internet of Things sensors, smart contracts, among others.
- Ensure that new technology in public transport (e.g. app-based ride services and shared mobility) is both inclusive and sustainable, including to those with reduced mobility and those in underserved communities.
- Anticipate the future arrival of automatic and driverless vehicles and potential impacts when integrating them into the mobility profile of cities, with safety as the highest priority. This would include anticipating and capitalising upon changes in land use, housing and transportation patterns triggered by smart urban solutions.
- Take advantage of technologies that help better manage and visualise city investments, housing development, and predict potential areas at risk of limited access to services and opportunity, and plan accordingly.
- Enhance efforts to collect and use data to improve accessibility of job opportunities, public services, green, cultural and leisure spaces in our cities and metropolitan areas.
- Encourage new approaches to retraining and upskilling workers and to prepare young people for jobs of the future, and mitigate the impact of automation and digitalisation on the local labour market.
- Leverage the potential of data innovation, including smart, big, open and geospatial data, to ground urban policy decisions in up-to-date and quality information and evidence, while safeguarding the privacy of individuals.
- Recognise that tech-driven solutions are as important to the poor as they are to the affluent, by exploring not only the potential benefits, but also the challenges, linked with artificial intelligence, automation and disruptive technologies on marginalised and disadvantaged groups, and address them.
- Adopt appropriate local regulation for the sharing and gig economy to further employment security, protect the public interest and workers' social safety nets.
- Strengthen the monitoring and evaluation of local policies to demonstrate how smart cities can improve administrative and fiscal processes, engage citizens better, build trust in city leaders, and shape better lives and outcomes for residents.

Strategies on public sector innovation aim to accelerate the uptake of new processes, practices and approaches in cities of all size:

- Promote a culture of innovation within our administration that incentivises experimentation and risk taking; build the local capacity through dedicated goals, strategies, staff and budget, to advance our social agendas in our policies. This includes attracting the human and fiscal resources to implement the range of policies, programmes and projects designed to promote inclusion and growth with equity.
- Promote the uptake of innovative financial mechanisms based on sound valuation practices, which includes considering a range of land-based finance tools, infrastructure funds and sustainability bonds to finance public spaces, urban infrastructure, neighbourhood development and affordable housing creation.
- Promote an agile and flexible model of city governance through innovative collaborative tools, partnerships or forms of contracts that put the interest of local residents at the centre, including through inter-municipal collaboration and public-private partnership.
- Reinforce strategic management and innovation capabilities of local public officials to design and implement integrated urban strategies that match the complexity of current and future challenges.
- Promote new and broader forms of citizen engagement to put local residents at the centre of policy planning, design and implementation by engaging community in decision making regarding public spaces and infrastructure choice through citizen councils, use of technology, citizen monitoring and public innovation labs.
- Promote open government initiatives to expand and facilitate access to public information, increased transparency and accountability of decision makers, as well as instances of co-creation of public policies.
- Explore innovative participatory budgeting for citizens to have a say in how public funds are spent, in particular concerning programmes and infrastructure projects pursuing inclusive objectives.
- Promote sustainable public procurement combining economic, social and environmental objectives, to create and shape local markets with an inclusive and green growth lens, change consumption and production patterns, and transition from linear to circular economies in shared responsibility with business and citizens.

Annex C. Participating cities in the OECD/Bloomberg Survey on Innovation Capacity in Cities 2018

Africa	Cape Town (South Africa)
Asia	Otsu (Japan) Seoul (Korea) Tokyo (Japan)
Europe	Athens (Greece) Bilbao (Spain) Braga (Portugal) Inverness (United Kingdom) Ljubljana (Slovenia) Madrid (Spain) Milan (Italy) Palermo (Italy) Paris (France) Reykjavik (Iceland) Rotterdam (Netherlands) Sintra (Portugal) Stockholm (Sweden) Turin (Italy) Utrecht (Netherlands)
Latin America	Buenos Aires (Argentina) Curridabat (Costa Rica) Medellin (Colombia) Quillota (Chile) Rio de Janeiro (Brazil) Saltillo (Mexico) Santiago de Chile (Chile) Sao Paulo (Brazil)
Middle East and North Africa	Beer Sheva (Israel) Jerusalem (Israel) Tel Aviv (Israel)
North America	Akron, Ohio (United States) Alexandria, Virginia (United States) Anchorage, Alaska (United States) Atlanta, Georgia (United States) Aurora, Illinois (United States) Austin, Texas (United States) Boulder, Colorado (United States) Charlotte, North Carolina (United States) Chattanooga, Tennessee (United States) Chelsea, Massachusetts (United States) Chicago, Illinois (United States) Cincinnati, Ohio (United States) Denver, Colorado (United States) Detroit, Michigan (United States) Durham, North Carolina (United States) Fort Collins, Colorado (United States) Fort Lauderdale, Florida (United States) Georgetown, Texas (United States) Glendale, California (United States) Grand Rapids, Michigan (United States)

	Houston, Texas (United States)
	Huntington, Texas (United States)
	Indianapolis, Indiana (United States)
	Irving, Texas (United States)
	Jersey City, New Jersey (United States)
	Kansas City, Kansas (United States)
	Lansing, Michigan (United States)
	Lexington, Kentucky (United States)
	Long Beach, California (United States)
	Los Angeles, California (United States)
	Louisville, Kentucky (United States)
	Memphis, Tennessee (United States)
	Miami, Florida (United States)
	Minneapolis, Minnesota (United States)
	Mobile, Alabama (United States)
	Montreal (Canada)
	New York, New York (United States)
	Oakland, California (United States)
	Oklahoma City, Oklahoma (United States)
	Orlando, Florida (United States)
	Paterson, New Jersey (United States)
	Peoria, Illinois (United States)
	Philadelphia, Pennsylvania (United States)
	Providence, Rhode Island (United States)
	Riverside, California (United States)
	Rochester, New York (United States)
	Saint Paul, Minnesota (United States)
	San Francisco, California (United States)
	San Jose, California (United States)
	Seattle, Washington (United States)
	South Bend, Indiana (United States)
	Syracuse, New York (United States)
	Tacoma, Washington (United States)
	Toronto (Canada)
	Tulsa, Oklahoma (United States)
	Virginia Beach, Virginia (United States)
	Walnut Creek, California (United States)
Oceania	Wellington (New Zealand)

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Enhancing Innovation Capacity in City Government

Cities are reinventing themselves to adapt and respond to their evolving contexts. One instrument that local government is leveraging is innovation. To understand how cities approach public sector innovation, the OECD and Bloomberg Philanthropies carried out a survey on innovation capacity across 89 cities in OECD countries and non-OECD economies. The focus of the survey was to unpack the capacity to innovate in the local public sector and explore the resources – human, financial, and institutional – and how they can work to boost innovation in a city.

This report explores the approaches and goals, staffing and structure, data, financial resources, and evaluation efforts that local administrations are making to innovate. It also reviews the outcomes that are resulting from these measures, especially related to resident well-being.

Consult this publication on line at ***https://doi.org/10.1787/f10c96e5-en***.

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