



CIVITAS NOVUS: THE GUANGZHOU - PENN IUR URBAN INNOVATION ASSESSMENT

Penn Institute for Urban Research
Guangzhou Institute for Urban Innovation



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Urban systems are under extraordinary pressure to transform and adapt to 21st century crises like climate change. They are, however, too often run according to rules and customs that are no longer fit for purpose. At the local level, a vision for the future must be matched equally with a collective, systematic understanding of local innovation potential and a collaborative learning process that focuses on how to adapt rules, adjust customs and transform ad hoc successes into sustainable change.

Introduction: A New Framework for an Urban Innovation Ecosystem

The Guangzhou-Penn IUR urban innovation assessment helps local leaders accomplish this by drawing on the lessons and insights of hundreds of cities that have successfully implemented innovative solutions. The assessment integrates these insights and lessons into a multi-part assessment and learning module. It encourages cities to see urban innovation as a set of principles and practices to reframe risk and move beyond obsolete and ad hoc practices. It also encourages cities to build a locally-led network of managers and leaders who are willing to bridge bureaucratic silos and discover new ways to identify, explore and implement innovation.

In the process of researching and pilot-testing this assessment methodology, we found that most urban innovation approaches borrow heavily from business practices focusing on creating an enabling environment for entrepreneurs, start-ups and technological innovation. These approaches tend to frame the concept of innovation around radical or disruptive ideas or massive-scale 'moonshot' transformations. Cities, however, are for the most part made up of intricate webs of smaller-scale communities, stakeholders and individuals faced with a wide array of challenges

such as ageing or inadequate infrastructure, waste management and pollution, environmental degradation, inequitable access to housing, health and education, and lack of economic opportunities. Ambitious new ideas and radical inventions are needed, but they must be supported by a different concept of and approach to innovation - one that treats innovation holistically and as localized ecosystems, each with its unique social, economic and institutional contexts. Delivering 'impact at (global) scale' is a challenge with national and global stakeholders. Delivering 'impact at (local) level' requires an approach that encourages "shared ideas implemented to better the experience, management, and organization of urban life, looking towards the future and serving as a lesson and inspiration elsewhere."

The Guangzhou-Penn IUR urban innovation framework is an integrated and holistic approach to urban innovation that addresses the complexity and scale of urban systems. Most municipalities are running at full speed to stay in the same place, making innovation and change a response to crisis rather than strategy. Without principles and processes that can embed innovation into urban management, the crisis will continue to drive ad hoc innovation instead of sustained and resilient change. Innovation is not just the invention of a new idea; it is the implementation, management and diffusion of a new idea across urban systems.'

[1] Schumpeter JA. The theory of economic development. An inquiry into profits, capital, credit, interest, and the business cycle. Cambridge: Harvard University Press; 1934. (Reprint 1983: Transaction Publishers (first published in 1911 in German)).

Definition and Principles of Urban Innovation

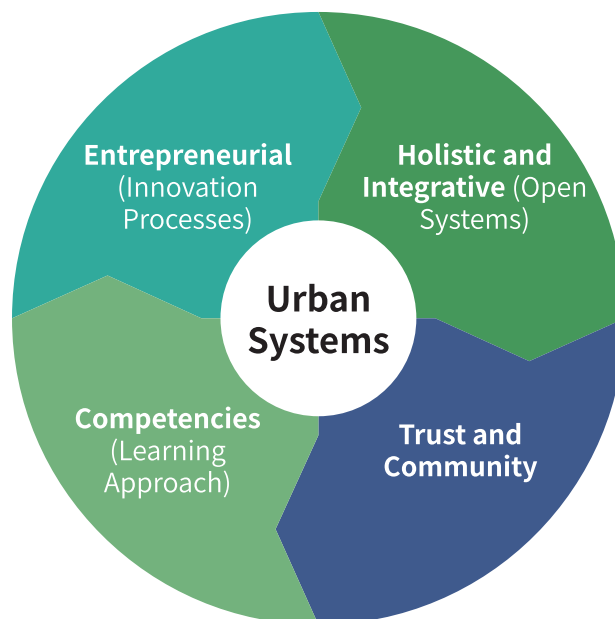
The methodology is based on a new definition of urban innovation:

"Shared ideas implemented to better the experience, management, and organization of urban life, looking towards the future and serving as a lesson and inspiration elsewhere."²

[2] Authors' own.



Supporting that definition are four principles that apply to all urban sectors. Urban innovation needs to be (i) an integrated and holistic process that, (ii) supports continuous learning and, (iii) adapts an entrepreneurial approach as it applies to urban management.



1. Competencies

The concept of urban innovation as a set of learning competencies offers individuals and organizations a greater sense of agency and control by emphasizing collective learning and growth.

A common response to innovation is "We don't have the capacity or resources for this!" We recognize that the call for change in how cities are planned, managed, and governed can overwhelm even the most seasoned professionals. Defining urban innovation as a learning process is a subtle but important message that encourages innovation at any scale and enables continued learning, creative problem-solving, and leadership at all levels. Building an urban innovation ecosystem is a step-by-step learning-by-doing process that can start small and does not always require an infusion of new talents and new resources.

2. Holistic and Integrative

The holistic and integrative principle builds a foundation for approaching urban systems like an ecosystem - a community or network of many subsystems each with their own characteristics and relationships.

Ecosystem approaches are steadily transforming how people think about the interdependency of human and planetary systems and the value of diversity. Similarly, an urban innovation ecosystem may comprise a set of supporting components and services. What sustains innovation is the interaction between the city, local communities and stakeholders which together generate new ideas and conditions for effective implementation.

3. Entrepreneurial

Our research, including an analysis of best practices from the Guangzhou International Award for Urban Innovation, shows that the difference between implementing a pilot or demonstration project and scaling up innovation on a system-wide basis is tied to the ability to understand and manage risk and entrepreneurship in a public sector urban management setting.

Urban innovation and "entrepreneurship" is less about risk-taking and more about change in the way:

- (i) knowledge, information and data are systematically shared between different departments internally and with stakeholders externally.
- (ii) new ideas are encouraged and enabled to flow through the organization.
- (iii) human, technical and financial resources can be deployed and leveraged to accelerate implementation.

4. Trust and Community

The principle of trust is fundamental to learning how to re-evaluate risk and working together to turn new ideas into innovative programs, business processes and policies that benefit a shared vision of the future.

The key advantage of growing an innovation ecosystem involving all relevant departments and stakeholders lies in the co-ownership of new ideas and solutions. While a new idea might come from a given individual or department, effective implementation requires the support of many. Co-ownership is an effective de-risking strategy as well as a means of securing political support.

It is these changes that make a difference between implementing a successful project and creating a culture of innovation and transformation.

Approach: Innovation as a Learning Process

This assessment does not create a set of performance indicators for public managers, nor does it measure an index of industrial and business-friendly policies. The assessment frames innovation as a learning process and a community of practice that identifies, supports, and implements innovation at all stages and levels of urban management. Reaching a 'shared idea for the future' is a goal, but to get there, cities need to accept that getting there requires urban innovation, which, in turn, requires exploration and new knowledge and skills accumulated over time.

Even when the crisis is the impetus for invention and innovation, the diffusion and scaling up of new practices and ideas are too often stymied by urban management practices that separate divisions or departments and discourage collaboration and exploration. Departments need to learn from each other and explore how to apply insights, tools and processes to embed innovation into their business practices and services. This methodology starts with an assessment questionnaire and is followed by a workshop with the same individuals to strengthen (or create) a community of urban innovation practice who can learn from each other.

Using the principles above, the urban innovation assessment methodology centers learning around five competency domains that are universally applicable to cities regardless of history, size, governance structure or income level while taking context very much into consideration. The assessment incorporates holistic, integrative and entrepreneurial principles through out each domain.

Each competency domain is linked with a learning module. The learning focuses on a set of prompts, or leading questions, that



explore, in a workshop setting, concepts, principles, drivers, and best practices within the ecosystem. The five competency domains are: **1) Rethinking Urban, 2) Valuing Innovation, 3) The Flow of Ideas, 4) Implementing Innovation, and 5) Shifting Paradigms.**

The questions are designed to spark:

- **Curiosity** - what does the local urban innovation ecosystem look like?
- **Reflection** - how do personal attitudes and work culture shape innovation potential?
- **Insights** - how do colleagues approach innovation in different departments and conditions?

Competency Domain 1: Rethinking Urban

Key Driver: Complexity

This competency domain focuses on how stakeholders envision the future, learn to recognize and redefine urban complexity and create shared strategies.



Core Competencies

1. Localizing Global Challenges
2. Strategies for Capturing Collective Intelligence at the City level
3. Breaking Down Local Silos
4. Vision Consensus

A key component of urban innovation is the need of a vision for a different future. Our approach is to ask participants to engage with vision by scale, from top-down (global) and bottom-up (personal) with the city at the center (node) of many systems. Collective intelligence and vision will emerge, but it requires people who

are able to orchestrate collective knowledge and intelligence by observing the big picture, looking for feedback loops and breaking down silos at the local level. It requires an understanding that asking the right questions is more important than providing simple answers to complex challenges. Rethinking urban requires leaders who encourage holistic thinking across all departments and make a continuous effort to understand how social, economic and environmental challenges intersect and interact and are continuously evolving.

⇒ **Example of Successful Inclusive Planning**

Adelaide is one of the most populous metropolitan regions in Australia, with a population of 1.3 million people. The City of Unley, a local government area in the Adelaide metropolitan region with a resident population of approximately 39,145 people, proposed a novel and age-friendly community co-design principles with older residents to inform new co-housing options. In response to the challenges that older individuals wishing to age in place in their community often find limited options to downsize when their housing no longer suits their needs, the initiative aims to establish a new concept and principles of co-housing with shared amenities and desirable environment to enhance social cohesion. It includes a suite of innovative co-housing designs sympathetic to local housing styles. The initiative benefits the elderly population (i.e., aged 60 and above) in the city of Unley, which constitutes 22.6% of the city's population. It directly enhances the well-being of older community dwelling adults in metropolitan South Australia who wish to stay in their communities yet need to downsize their property because their physical or financial needs have altered. The initiative is innovative by using the 'Alternative Infill' housing model and principles of co-housing to involve older residents in the co-design of co-housing that adapts to local culture and needs.

Competency Domain 2: Valuing Innovation

Key Driver: Perceptions of Risk and Entrepreneurship

This domain focuses on asking workshop participants about their attitudes and the value they place on innovation, which is closely tied to individual and group perceptions of risk, change, and uncertainty.



Core Competencies

1. Agreement with a New Urban Innovation Definition
2. Perceived Political Leadership and Support
3. Prioritized Work Responsibilities
4. Perceived Work Culture
5. Perceived Priorities
6. Drivers and Motivation

How people value innovation varies widely depending on their roles and responsibilities, culture, and context. Innovation is generally tied to financial risk and 'creative disruption' in the business world, and failure is applauded as entrepreneurial growth. In cities, the risks are political, associated with waste and fraud, and failure is condemned as a lack of responsibility and an erosion of public trust. These risks must be treated differently. For cities, the closest tier of government to the daily lives of citizens, the entrepreneurship required for urban innovation is less about personal risk-taking than it is about vision, understanding the costs and benefits to society, and managing the implications and repercussions of the conflicts between public trust and public demand for change.

⇒ **Example of Successful Cooperation**

The Departmental Council of Saint Louis in Senegal developed an innovative approach to environmental governance, which integrates the restoration of mangrove ecosystems across three municipalities with strategies for addressing urgent urban climate challenges and enhancing livelihoods through the promotion of resilient and structured economic activities around mangroves. The objective of the initiative was to restore the mangroves of Saint-Louis of Senegal (1000 ha.), which are threatened with extinction due to climatic and anthropogenic pressures, with a rate of loss of 9 ha./year, mostly due to deforestation for firewood and farming activities. Mangrove restoration activities are critically important to global climate action, as they sequester carbon at a rate of two to four times greater than mature tropical forests and store three to five times more carbon per equivalent area than 'tropical forests' like the Amazon rainforest.

Competency Domain 3: The Flow of Ideas

Key Driver: Ingenuity

This competency domain focuses on ingenuity, and how stakeholders are developing the skills to explore ideas and opportunities with new perspectives.



Core Competencies

1. Personal Problem-Solving Competencies
2. Creative Thinking Processes at Work
3. Seeking out the "Real" Problems
4. Investigating the Sources of Constraints
5. Familiarity with Knowledge Sharing Strategies and Techniques
6. Finding Inspiration

Ingenuity is not limited to artists or 'creatives'. Ingenuity is at the heart of urban innovation and the grand social challenges laid out in the SDGs, the Paris Agreement and the New Urban Agenda. Complex issues like equity, social and environmental justice or green infrastructure require people to think sideways, upside down, and inside out while looking for new ways to get to "there" from "here". Recognizing and promoting resourcefulness and creativity and seeking out insights and unexpected connections at all levels of city government creates opportunities for "a-ha!" moments. This section asks participants to think about how they apply ingenuity strategies for increasing innovation where it may be needed most.

⇒ **Example of Successful Creative Thinking for Resource Reuse**

Located in northern Italy, Milan is the second most populous city in the country after Rome, with a population of approximately 1,300,000 and a population density of 7533 people per square kilometer. The city's primary sources of prosperity include trade, tourism, and the creative industry. The "Milan Food Policy", is an innovative planning strategy that integrates and implements a "Food Cycle System" throughout the city. The initiative is strongly linked to the social goals of improving the health and well-being of citizens. To date, the policy has generated more than 40 initiatives related to reuse, recycling waste food and reducing food miles. The policy initiative additionally cooperates with other international organizations, including EUROCITIES Working Group Food, the EU Platform for Food Losses and Food Waste and the C40 Food System Network.

Competency Domain 4: Implementing Innovation

Key Driver: New Playbook

The competency domain focuses on how cities can become more inventive and resourceful, and the challenges of implementing new business models and policies that will have lasting impacts.



Core Competencies

1. Team Strategies for Risk and Uncertainty
2. Using Evidence and Data
3. Leveraging Technology and Science
4. Changing Regulations and Policies
5. Investing: Financial and Budget Systems
6. Mobilizing Stakeholders

Once values, ideas and opportunities are identified, stakeholders need to consider how to build a new playbook of tactics and strategies to leverage available resources and identify new ones to test and implement innovation. Even big 'eureka!' ideas reuse and recycle existing systems and resources in new ways.

A team with a supportive culture for innovation, which has explored the challenges and opportunities for change, has a better chance of re-writing their playbook.

⇒ **Example of Successful Proscriptive Legislation**

In 2016, Ecuador's capital city, Quito (pop. 1,847,000), passed the Eco-Efficiency Ordinance for the Metropolitan District of Quito, which incentivizes the construction of high-density 'green' buildings (energy and water efficient, sustainably sourced construction materials) on key transportation nodes and with provisions for affordable housing. As important, the Ordinance deploys the concept of land value capture to ensure that the city retains its share of the land value increments generated by greater density and land use allowances in designated zones. The Ordinance not only helps create the conditions for sustained demand for its new public transit system (Metro) and curbs on urban expansion, it also bolsters community and developer support for green building construction and a more equitable distribution of the financial benefits associated with denser development. To take effect, the Ordinance relied on partnerships with community leaders and universities to determine the parameters of local area plans around transit stations, as well as ways to calculate and recover the uplift generated by development in those areas. The city calculates that it has generated approximately \$10.7 million in revenue in the first year from the sale of development rights.

⇒ Example of Successful Equity Process

The goal of Werkstatt Junges Wien is to make Vienna, Austria, the most child- and youth-friendly city in the world. Over the past 50 years, Vienna has shifted from a shrinking and aging city into a young and growing one. As such, the city decided it was crucial to create meaningful opportunities for children and young people to experience democracy in a positive, hands-on way. By showing them that their opinions and ideas matter, Werkstatt Junges Wien creates a feeling of self-efficacy through many small-scale participation offers. But the initiative goes the next step by aiming for a more structural, long-term and large-scale approach. The objective is to put social inclusion of all children and young people living and growing up in Vienna at the heart of policy-making and city administration. The innovative process is enabling children and young people of all age groups and backgrounds to connect to a process where they can freely articulate their own ideas for the city. To date, the impressive result is 193 specific measures and actions underway across the city. The strategy has been adopted by the Vienna City Council and thus is a binding commitment.

Competency Domain 5: Shifting Paradigms

Key Driver: Sustained Transformation

This competency domain focuses on how cities are learning to scale up sustained and lasting transformation out of new ideas and processes. While vision (rethinking urban) often starts the process, scaling up and embedding innovation across urban systems ensures the cycle continues and grows.

Core Competencies

1. Accepting Risk and Allowing for Uncertainty – "No plan survives its first encounter with change."
2. Commitment to a New Urban Innovation Framework
3. Accountability – Jumping In and Taking the Risk
4. Managing the Consequences – Together not Separate
5. Accelerating Transformation and Reducing Inertia

Once a new idea gets implemented and appears successful, the long-range goal should be to catalyze commitment and management to sustainable transformation. This takes sustained momentum after the initial experiment or a pilot project has proven itself useful. The innovation process requires making a case for long-range supporting strategies, evaluating outcomes and impacts, determining how to scale those outcomes, determining the costs and benefits in other parts of the ecosystem and sharing lessons to keep the learning cycle alive. The expected outcome of this process is a better understanding of how leadership can support open interdisciplinary learning processes between departments and/or stakeholders and how working together reduces real and perceived risks and can lead to efficiency gains and better social, economic and environmental outcomes.

⇒ **Example of Successfully Scaling Service Provision**

COVID-19-induced national lockdown in India highlighted the economic and housing vulnerabilities of urban labour, composed largely of migrants from lagging parts of the country working in the informal sector in the primary cities. The lockdown stress led to the reverse migration in large numbers. Migrants from Odisha, a lagging province in India, also returned to their home state. In response, the provincial government launched the Urban Wage Employment Initiative (UWEI) whereby the urban workforce has been guaranteed a minimum number of workdays annually at a specified daily wage. The workers are being engaged in public works and the resources are drawn from the on-going welfare schemes of the national and provincial governments. In addition to mitigating the economic stress due to the pandemic, the provincial government has adopted the initiative as a long-term measure for poverty alleviation. More recently, the national government has recommended that other states in India adopt similar approaches to local economic development and poverty reduction.

Assessment Process

The urban innovation assessment process is tailored to each city according to its social, economic and institutional context and its ongoing challenges and priorities.

Key steps

- An introductory briefing involving senior managers/department heads (virtual or in-person)
- Administering an online survey questionnaire involving up to 4 staff from each department and representatives of external stakeholders (virtual)
- Processing the responses to the questionnaire and proposing a workshop agenda based on findings (virtual)
- Convening a workshop with all department heads and representatives of stakeholders (1 day in-person, with an option for a longer retreat of follow-on sessions)
- Presenting the results of the survey and workshop to participants with comments and final report to leadership with recommendations (virtual or in-person)
- Ex-post evaluation and next steps 2 months later (virtual or in-person)

During the workshop, participants discuss their personal and collective experiences, explore their local urban innovation ecosystem and learn how stakeholders can navigate and improve it. The workshop should include participants from different departments, sectors and areas of expertise. In doing so, the workshop becomes a microcosm of the city and reflects the key principle of holistic and integrative processes. that encourages learning and the sharing of knowledge, expertise, and experience.

Annex II of this report provides an example of survey questions, which are customized in consultation with the client city.

Piloting Workshop Results

Global, national, and local systems are shifting simultaneously, compounding the rate of change. Strengthening the local innovation ecosystem and emphasizing continuous learning helps to strengthen a city's capacity to be more effective, more inclusive, sustainable and resilient. Creating a local community of leaders in practice that supports an urban innovation ecosystem helps a city seek out new ideas, assess and mitigate risks, and be more entrepreneurial, responsive, and adaptable.

The pilot workshops have demonstrated that an assessment that explores essential domains and competencies outlined above is most valuable when participants get together to discuss the results. Presenting anonymized analysis of individual responses to identify collective trends, gaps and results provides a strong basis for instigating productive exchanges and the sharing of lessons from experience. In one instance, participants and leadership acknowledged that they had rarely met and talked with all departments on substantive issues, let alone about innovation or change.

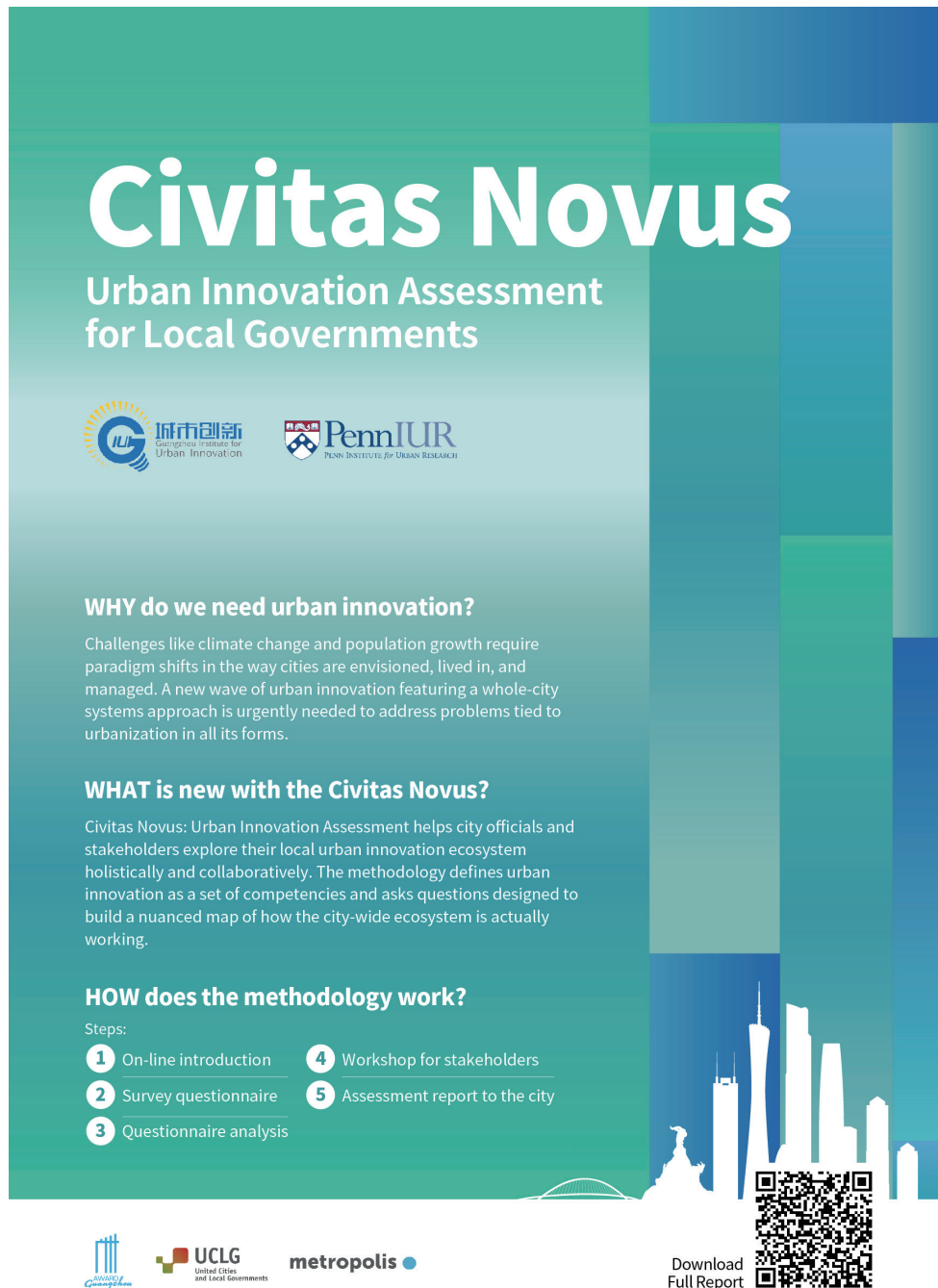
The assessment and workshop combination provides a unique opportunity for participants to forge a better understanding of how to strengthen their local urban innovation system and spur them to include innovation in their strategic planning processes. The workshop is also a particularly effective means to "discover" and share lessons from good practices which are rarely transmitted beyond departments or units directly involved.

As an internal planning process, the methodology offers cities a way to increase cross-disciplinary and cross-sector connections. As a mutual experiential learning opportunity, the assessment and workshop, in one instance, planted the seed for expanding a knowledge creation and sharing platform to build a local community of practice.

The Guangzhou Institute for Urban Innovation and the Penn Institute for Urban Research stand ready to help apply this urban innovation assessment in your city to help accelerate your community's pursuit of a more sustainable future.

Annexes



Annex I: Workshop Information Flyer for Cities



The flyer features a background of vertical bars in shades of green and blue, with a white silhouette of a city skyline at the bottom right. The main title 'Civitas Novus' is in large white font, followed by the subtitle 'Urban Innovation Assessment for Local Governments'. Logos for the Guangzhou Institute for Urban Innovation and Penn IUR are shown. The flyer is divided into three sections: 'WHY do we need urban innovation?', 'WHAT is new with the Civitas Novus?', and 'HOW does the methodology work?'. The methodology section includes a five-step process: 1. On-line introduction, 2. Survey questionnaire, 3. Questionnaire analysis, 4. Workshop for stakeholders, and 5. Assessment report to the city. A QR code and a 'Download Full Report' link are located at the bottom right.

Civitas Novus

Urban Innovation Assessment for Local Governments



WHY do we need urban innovation?

Challenges like climate change and population growth require paradigm shifts in the way cities are envisioned, lived in, and managed. A new wave of urban innovation featuring a whole-city systems approach is urgently needed to address problems tied to urbanization in all its forms.


WHAT is new with the Civitas Novus?

Civitas Novus: Urban Innovation Assessment helps city officials and stakeholders explore their local urban innovation ecosystem holistically and collaboratively. The methodology defines urban innovation as a set of competencies and asks questions designed to build a nuanced map of how the city-wide ecosystem is actually working.


HOW does the methodology work?

Steps:

- 1 On-line introduction
- 2 Survey questionnaire
- 3 Questionnaire analysis
- 4 Workshop for stakeholders
- 5 Assessment report to the city



Download Full Report



Annex II: Sample Assessment Questions

Civitas Novus Assessment Part 1: Values and Ideas	
<p>Welcome to the Civitas Novus Assessment for Urban Innovation. Building a better urban innovation ecosystem is essential for urban resilience, environmental sustainability, and prosperity. The assessment emphasizes personal learning and reflection, rather than checklists or indicators. This section asks you to think about two domains: 1) Valuing Innovation , and 2) The Flow of Ideas</p> <p><i>There are no right or wrong answers.</i></p> <p>-----</p>	
<p>This assessment is anonymous. However, please tell us the city department in which you work (or expertise) to help us better understand your city.</p> <p>-----</p>	
<p>DOMAIN 1: Valuing Innovation (8 questions)</p> <p><i>Core Competencies: Understanding and Defining Urban Innovation; WorkValues and Culture; Perceived Drivers and Priorities; Motivation</i></p> <p>-----</p>	
<p>1.1 Innovation is a "shared idea implemented to better the experience, management, and organization of urban life, looking towards the future and serving as a lesson and inspiration elsewhere"</p> <p style="text-align: right;">*</p> <p style="text-align: center;"> <input type="radio"/> Strongly Agree <input type="radio"/> Agree <input type="radio"/> Disagree <input type="radio"/> Strongly Disagree </p>	
<p>1.2 Please chose the top three types of innovation you think your city needs the most:</p> <p>-----</p>	
<p>1st priority</p> <p style="text-align: right;">*</p> <p> <input type="radio"/> Technological Innovation <input type="radio"/> Economic Innovation <input type="radio"/> Leadership and Vision <input type="radio"/> Regulation and Policy Innovation <input type="radio"/> Financial Innovation <input type="radio"/> Management Innovation <input type="radio"/> Social Innovation <input type="radio"/> Other (please explain in comment section at the end) </p>	
<p>2nd priority</p> <p style="text-align: right;">*</p> <p> <input type="radio"/> Technological Innovation <input type="radio"/> Economic Innovation <input type="radio"/> Leadership and Vision <input type="radio"/> Regulation and Policy Innovation <input type="radio"/> Financial Innovation <input type="radio"/> Management Innovation <input type="radio"/> Social Innovation <input type="radio"/> Other (please explain in comment section at the end) </p>	

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3rd priority * <input type="radio"/> Technological Innovation <input type="radio"/> Economic Innovation <input type="radio"/> Leadership and Vision <input type="radio"/> Regulation and Policy Innovation <input type="radio"/> Financial Innovation <input type="radio"/> Management Innovation <input type="radio"/> Social Innovation <input type="radio"/> Other (please explain in comment section at the end)				
1.3. Perceived Drivers: How often do you think the following factors drive transformation in your city?	Rarely	Often	Always	I don't Know
Big Ideas and Inspired Visions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Crisis and Urgency	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Community Demands	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Major Technological Developments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Economy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Partnerships with the Private Sector	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Working with Civil Society Organizations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Global Influences (like the SDGs or Paris Agreement)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Politics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1.4. Which innovation-related goals do you think are the important in your organization? -----				
1st goal * <input type="radio"/> Being Efficient with Limited Resources <input type="radio"/> Improving Group Performance <input type="radio"/> Creating and Implementing New Strategies <input type="radio"/> Making an impact in the community <input type="radio"/> Meeting short-term targets or policy goals				

2nd goal *				
<input type="radio"/> Being Efficient with Limited Resources <input type="radio"/> Improving Group Performance <input type="radio"/> Creating and Implementing New Strategies <input type="radio"/> Making an impact in the community <input type="radio"/> Meeting short-term targets or policy goals				
3rd goal *				
<input type="radio"/> Being Efficient with Limited Resources <input type="radio"/> Improving Group Performance <input type="radio"/> Creating and Implementing New Strategies <input type="radio"/> Making an impact in the community <input type="radio"/> Meeting short-term targets or policy goals				
1.5. How often do the following inspire you to take a risk on an innovative idea? <i>rank from 1 - never to 4</i>	Never	Rarely	Sometimes	Often
Making a Social Impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inspiring Leadership	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Working with a Committed Team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A Sense of Personal Accomplishment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Convincing Information or Research	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
New Policies or Regulations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1.6. What do you think is the most important quality for turning a new idea into reality? -----				
Most Important *				
<input type="radio"/> Resourcefulness <input type="radio"/> Adaptability <input type="radio"/> Collaboration <input type="radio"/> Creativity <input type="radio"/> Passion				

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<p>1.7 I think any big vision or new idea should to include values like:</p> <ul style="list-style-type: none"><input type="checkbox"/> A Commitment to Reducing Inequalities<input type="checkbox"/> A Commitment to Economic Growth/Job Creation<input type="checkbox"/> A Commitment to Health and Well-being<input type="checkbox"/> A Commitment to Protect the Environment<input type="checkbox"/> A Commitment to Protect the Welfare of the People in our City
<p>1.8. Open Response: Innovation is closely tied to risk, change, and uncertainty. What are the biggest areas of risk or uncertainty facing your organization and/or city?</p> <p>-----</p>
<p>1.9 Open for Comment: Do you think your organization values innovation? <i>please limit to 100-200 characters</i></p> <p>short answer</p> <p>-----</p>
<p>DOMAIN 2: The Flow of Ideas (6 questions) <i>Core Competencies: Types of Innovation Problem Solving; Curiosity, Creative Thinking and Inspiration; Generating Ideas and Roadblocks</i></p> <p>-----</p>
<p>2.1 I associate innovation with: <i>Personal assumptions</i></p> <ul style="list-style-type: none"><input type="checkbox"/> The Result of a Big Vision or Mission<input type="checkbox"/> A Bottom-up Community Led Process<input type="checkbox"/> Being Radical, even Disruptive<input type="checkbox"/> Always Incremental, Slow, Evolutionary<input type="checkbox"/> A Random Inspiration<input type="checkbox"/> Entrepreneurial, and Business Focused

2.2 I think we struggle with innovation in the following ways:
There are many reasons to seek out innovation and new solutions

Business as usual does work well anymore. We need to find new strategies

We often do not know how to test new ideas effectively

We need speed up or scale up implementation

We need to learn how to reallocate resources

We need to learn how to build consensus around a new idea

We need to learn about how to change our business practices

We need innovation - but new ideas are someone else's responsibility

Other (please add explanation at the end of the section)

2.3 I agree with the following statements about new ideas and innovation
Perceived risks around new ideas

Only radical ideas are really innovative

If the idea is new to me, I still consider it innovative

Innovative ideas are always risky

Public sector innovation is an oxymoron

Public sector innovation is an important skill

New Ideas are easy; it is the implementation that is hard

2.4 I typically deal with the following types of challenges at work: <i>Responsibility to seek out new solutions</i>	Never	Rarely	Often	Regularly
Preventative: Preventing problems before they start	○	○	○	○
Responsive: Implementing short-term solutions for often chronic issues	○	○	○	○
Transformational: Trying to change whole systems, policies or investments	○	○	○	○
Crisis: Implementing short-term solutions for immediate emergencies	○	○	○	○

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2.5 I work I use the following processes to generate ideas: <i>Looking for new ideas in many places</i>	Never	Rarely	Often	Regularly
Community Engagement: Creative ways to engage with our communities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comparison: Borrow new ideas from other cities/ organizations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Scenario Planning: Imagining different ways the future may happen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Collaboration: Working with other organizations (in or out of government)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Crisis Response: Finding creative ways to respond to crisis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Brainstorming: Working with my team to find new ways to use limited resources, money and time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Systems Thinking: Strategically think about structural forces and big concepts like circularity or climate change	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.6 Open Question. How important do you think innovative ideas are for addressing urban problems? -----				

**Civitas Novus Assessment: Part 2: Rethinking Urban,
 Implementation and Changing Paradigms**

Welcome to the Civitas Novus Assessment for Urban Innovation, Part 2. Building a better urban innovation ecosystem is essential for urban resilience, environmental sustainability, and prosperity. The assessment emphasizes personal learning and reflection, rather than checklists or indicators. This section asks you to think about Domains 3,4,5

DOMAIN 3: Rethinking the Future of Urban (6 questions)

Core Competencies: 21st Century Challenges; Collective Intelligence; Tearing Down Silos; Operational Roadblocks

3.1 In my opinion, the three greatest challenges our city faces today are:

There are no right or wrong answers

1st challenge

*

- Prosperity: Access to economic resources
- Resilience: Ability to adapt and respond to disasters, particularly climate-related
- Inclusiveness: Equal opportunities regardless of ethnicity, gender, or other factors
- Sustainability: Preserving the environment as a condition for human prosperity
- Health: Increasing physical and mental well-being, reducing the impact of diseases
- Safety: Secure work and living conditions, reducing crime and equal protection under the law
- Community Services: Basic services such as housing, clean water, sanitation and energy

2nd challenge

*

- Prosperity: Access to economic resources
- Resilience: Ability to adapt and respond to disasters, particularly climate-related
- Inclusiveness: Equal opportunities regardless of ethnicity, gender, or other factors
- Sustainability: Preserving the environment as a condition for human prosperity
- Health: Increasing physical and mental well-being, reducing the impact of diseases
- Safety: Secure work and living conditions, reducing crime and equal protection under the law
- Community Services: Basic services such as housing, clean water, sanitation and energy

<p>3rd challenge</p> <ul style="list-style-type: none"> <input type="radio"/> Prosperity: Access to economic resources <input type="radio"/> Resilience: Ability to adapt and respond to disasters, particularly climate-related <input type="radio"/> Inclusiveness: Equal opportunities regardless of ethnicity, gender, or other factors <input type="radio"/> Sustainability: Preserving the environment as a condition for human prosperity <input type="radio"/> Health: Increasing physical and mental well-being, reducing the impact of diseases <input type="radio"/> Safety: Secure work and living conditions, reducing crime and equal protection under the law <input type="radio"/> Community Services: Basic services such as housing, clean water, sanitation and energy 	*
<p>3.2 In my opinion, the three greatest urban challenges my department must deal right now are: <i>There These can be different from city-scale challenges</i></p> <p>-----</p>	
<p>1st challenge</p> <ul style="list-style-type: none"> <input type="radio"/> Prosperity: Access to resources <input type="radio"/> Resilience: Ability to respond to disasters, particularly climate-related <input type="radio"/> Inclusiveness: Equal opportunities regardless of ethnicity, gender, or other factors <input type="radio"/> Sustainability: Preserving the environment <input type="radio"/> Health: Increasing physical and mental well-being <input type="radio"/> Safety: security work and living conditions <input type="radio"/> Community Services: Providing basic services such as housing, clean water, sanitation and energy 	*
<p>2nd challenge</p> <ul style="list-style-type: none"> <input type="radio"/> Prosperity: Access to resources <input type="radio"/> Resilience: Ability to respond to disasters, particularly climate-related <input type="radio"/> Inclusiveness: Equal opportunities regardless of ethnicity, gender, or other factors <input type="radio"/> Sustainability: Preserving the environment <input type="radio"/> Health: Increasing physical and mental well-being <input type="radio"/> Safety: security work and living conditions <input type="radio"/> Community Services: Providing basic services such as housing, clean water, sanitation and energy 	*

3rd challenge * <input type="radio"/> Prosperity: Access to resources <input type="radio"/> Resilience: Ability to respond to disasters, particularly climate-related <input type="radio"/> Inclusiveness: Equal opportunities regardless of ethnicity, gender, or other factors <input type="radio"/> Sustainability: Preserving the environment <input type="radio"/> Health: Increasing physical and mental well-being <input type="radio"/> Safety: security work and living conditions <input type="radio"/> Community Services: Providing basic services such as housing, clean water, sanitation and energy				
3.3 How would you rate your cities' responsiveness to these challenges? <i>1= not responsive 4= very responsive</i>	1	2	3	4
Economic Prosperity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Resilience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inclusiveness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental Sustainability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Safety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Community Services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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3.4 Do you agree with the following statements? <i>Re-imagining cities requires public, private and civic innovation</i>	No	More or Less	Yes
Our city has inclusive and participatory processes for listening to inhabitants	○	○	○
Our city government is transparent about its performance and publishes data and reports	○	○	○
Our city celebrates and supports entrepreneurial people and organizations	○	○	○
Our city supports civic/non- profit organizations trying to make a local impact	○	○	○
Our city generally works well with regional and national governments	○	○	○
Our policymakers asks hard questions about things that aren't working very well	○	○	○
Our citizens feel engaged and listened to by city managers and leaders	○	○	○
<p>3.5 How does your department seek out and learn about community problems? <i>Actively anticipating and exploring challenges</i></p> <p><input type="checkbox"/> Inclusive Planning: Provide inclusive and participatory processes to listen to community members</p> <p><input type="checkbox"/> Private Sector: Create opportunities to discuss issues with the business community</p> <p><input type="checkbox"/> Civic Engagement: Engage with civic or philanthropic organizations</p> <p><input type="checkbox"/> Department Collaboration: Communicate and share data between departments</p> <p><input type="checkbox"/> Academia: Work with researchers or use their recommendations</p> <p><input type="checkbox"/> Professional Networks: Participate in city networks and other professional organizations</p> <p><input type="checkbox"/> Government Networks: Participate in government networks in your sector</p> <p><input type="checkbox"/> Policy Makers: Adopt guidance from local policy makers</p>			

3.6 Open Question: In your opinion, how important is innovative to build healthy, equitable and resilience cities?

Are existing tools, properly implemented, enough?

Optional

DOMAIN 4: Implementing Innovation (7 questions)

Core Competencies: Risk and Uncertainty; Evidence and Data; Technology and Science; Regulations and Policies; Financial and Budget Systems; Stakeholders

4.1 I think my department has the following processes for evaluating risk and uncertainty:

Please select all statements that you agree with

- Acceptable Outcomes - what defines success, or failure
- Realistic Timescale - how long do we have for a pilot? For scaling up a program?
- Flexibility - what elements have flexibility, what elements are locked in
- Resource and Funding - what are the biggest uncertainties about funding and resources
- Tactics - Criteria for how and when to change course, or look for a new solution
- Case Studies/Best Practices - Precedents we can borrow and adapt
- Ownership- Who decides when to take a risk, or when risk or uncertainty is too high
- Political Support - Who is responsible for the political risks
- I don't know/uncertain

4.2 We use the following types of evidence to defend and support new ideas:

Please select all statements that you agree with (mostly, or generally)

- Mandates: Compliance with regulations
- Mission: Support city-wide goals or policies
- Efficiency: We track data to demonstrate that we will improve our efficiency
- Effectiveness: We track data to show how we will improve our services
- I don't know/uncertain
- Other

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<p>4.3 At work we are able to use innovative technology/science for the following: <i>Please select all statements that you agree with</i></p> <ul style="list-style-type: none"><input type="checkbox"/> Address Disruption: Respond to new and/or disruptive technologies that are transforming how the world operates<input type="checkbox"/> Address Social Goals: Goals like environmental sustainability, resilience or climate change.<input type="checkbox"/> Attract Private Investment: Increase our ability to compete globally and attract private investment<input type="checkbox"/> Improve Services: Improve to our basic mission and ability to provide services<input type="checkbox"/> Educate and Train Our Staff: Improve skills and training of staff or the community (digital divide)<input type="checkbox"/> Improve Connectivity: Smart city and ICT enable us to work smarter and stay connected<input type="checkbox"/> I don't know much about technology investments/uncertain
<p>4.4 Our city has policies and regulation to make innovation easier including: <i>Please select all statements that you agree with(mostly, generally)</i></p> <ul style="list-style-type: none"><input type="checkbox"/> Decentralized Policy-Making: Increasing local control and authority<input type="checkbox"/> Innovation as Learning: Promoting pilot programs and experimental initiatives<input type="checkbox"/> Private Investments: Creating a environment for private entrepreneurs and small businesses<input type="checkbox"/> Partnerships: Allows joint government collaborations internally or with outside organizations<input type="checkbox"/> Procurement: Promotes quality-based products and services criteria, not just lowest price<input type="checkbox"/> Proscriptive Legislation: Enables rules that say what you CAN do, not what you CANNOT do<input type="checkbox"/> I don't know much about policies and regulation/uncertain<input type="checkbox"/> Other
<p>4.5 I am aware of ways my city reduces market and financial barriers for innovation including: <i>Please select all statements that you know about</i></p> <ul style="list-style-type: none"><input type="checkbox"/> Local revenue generation: new taxes, fiscal buoyancy, elasticity<input type="checkbox"/> Access to Borrowing: Private Investments, DFIs, climate funds<input type="checkbox"/> Reducing Budget Silos: Pooling or coordinating budget expenditures<input type="checkbox"/> Expenditure Controls: Modernizing processes; rethinking metrics<input type="checkbox"/> Zero-Based Budgeting: Create a new budget from the ground up, starting from zero<input type="checkbox"/> Controls and Auditing: Incentives; transparency<input type="checkbox"/> Procurement: encourages innovation, value-for-money over lowest cost<input type="checkbox"/> Public-Private Partnerships: Enter into fiscal partnerships with private sector<input type="checkbox"/> I do not know about budgets and finances/uncertain

4.6 We regularly use the following strategies to communicate and mobilize stakeholders

Please select all statements that you agree with

- Map stakeholders: Initiators, Partners, Investors, Researchers, Advocates, Colleagues, Media, Enablers
- Equity: We try to engage with historically less engaged or powerful groups
- Communication: We have a consistent and understandable messaging strategy
- Feedback: We ask for feedback via surveys, websites, or other
- Public Meetings: We ask for feedback about major decisions or changes in public meetings
- Participatory Decisions: We are moving beyond feedback to participatory decision-making
- I don't know much about communications/uncertain
- Other

4.7 Open Question: Do you think city management needs a new playbook for running a 21st century city?

200wordmaximum

200wordmaximum

DOMAIN 5: Changing Paradigms (5 questions)

Core Competencies: Accepting Risk and Allowing for Uncertainty; Jumping In and Taking the Risk; Managing the Consequences; Accelerating Transformation

5.1 Changing The Meaning of Success: I think we need to track our performance in the following ways

Please select all statements that you agree with

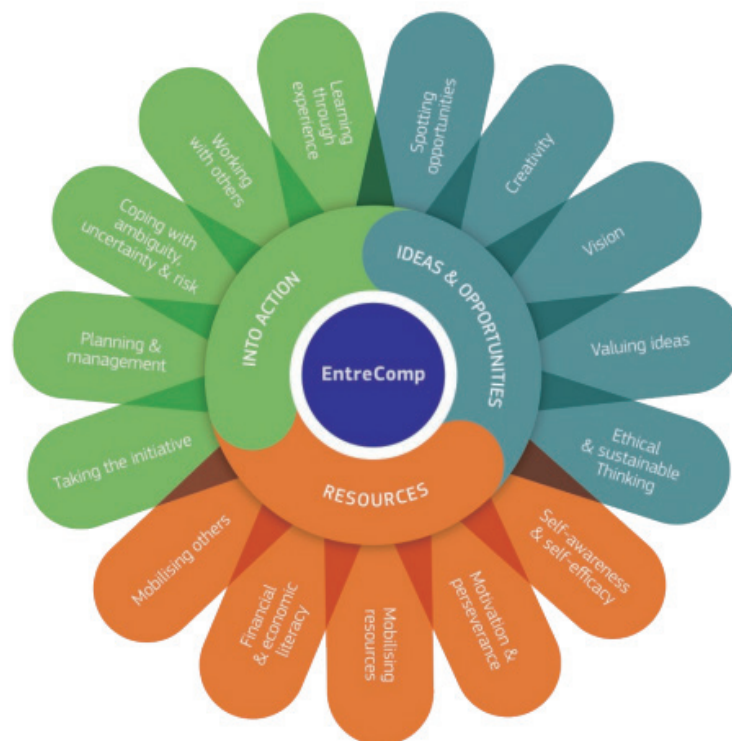
- Our performance indicators look at how effective our services are in the community
- Our performance indicators look at how well we hit our fiscal or budgetary targets
- Our performance indicators help us track effectiveness AND efficiency
- Our performance indicators track performance over time (continuous improvements)
- Our performance indicators track our work against city-wide goals like sustainability or resilience
- Our performance indicators encourage us to be innovative and think differently about how to reach our goals
- Our performance indicators help us communicate our work with stakeholders

<p>5.2 Changing Culture: I would like to see more <i>Please select all statements that you agree with</i></p> <ul style="list-style-type: none"><input type="checkbox"/> Political Leadership: acknowledge the need for new norms, new roles, responsibilities<input type="checkbox"/> Accountability Framework: Policies and business practices that support some risk of failure<input type="checkbox"/> Change Champions: People who help remove barriers and improve communication<input type="checkbox"/> Building Trust: We are transparent and able to build trust with our communities<input type="checkbox"/> Scaling: Commitment to turning 'pilot programs' into new practices and policies<input type="checkbox"/> Don't Know/Uncertain
<p>5.3 Changing The Idea of Risk: I think our department needs to improve how we deal with risk: <i>Please select all statement that you agree with</i></p> <ul style="list-style-type: none"><input type="checkbox"/> Patience, with urgency: culture doesn't change overnight, but we needs to accelerate where ever we can<input type="checkbox"/> Learn Together, or we fail: leverage everyone's knowledge, share resources, communicate often<input type="checkbox"/> Accepting Iteration: willingness and ability to listen, change tactics or direction; focus on results, not just methods or checklists<input type="checkbox"/> New Measures of Impact: Explore new performance indicators that measure outcomes, not just outputs<input type="checkbox"/> Lessons Learned: Take a structured approach to reviewing wins and failures
<p>5.4 Changing Communication: I think we need to improve: <i>Please elect all statements that you agree with</i></p> <ul style="list-style-type: none"><input type="checkbox"/> Evaluating Growth potential: How to Repeat, replicate, scale ...or pause?<input type="checkbox"/> Mission Changes: Identify how to change our mission and share those insights with the right people<input type="checkbox"/> Structural Changes: We can identify ways to change our business practices and communicate those issues with the right people<input type="checkbox"/> Power of Storytelling: We need to tell a compelling story about the impact of our innovations<input type="checkbox"/> Sharing: Opportunities to share lessons with other groups/stakeholders in the city<input type="checkbox"/> Learn from Other Cities: Work with other cities on how to solve problems
<p>5.5 What do you think? Is you department and city good at discovering and implementing innovation? -----</p>
<p>5.6 SUMMARY QUESTIONS: What do you think of these questions? Do you think this is a helpful learning experience? -----</p>

Annex III: Annotated Bibliography

Systems Change, A Guidebook for Adopting A Portfolio Approach (UNDP, 2022). An approach to help development practitioners prepare for and systems transformation using a portfolio approach in complex development sectors

European Entrepreneurship Competency Framework,2016. HEI Initiative and Entrecomp,2126. (European Institute for Innovation and Technology, Erasmus Programme of the European Union.) The entrepreneurial skills to be part of a workforce that is alert and responsive to change and capable of designing and implementing new solutions to complex problems.



Innovation facets and core values: how different forms of innovation can cause different reactions (Observatory of public Sector Innovation, 2019): Different types of innovation: mission oriented, anticipatory, adaptive, enhancement-oriented. (See image 2)

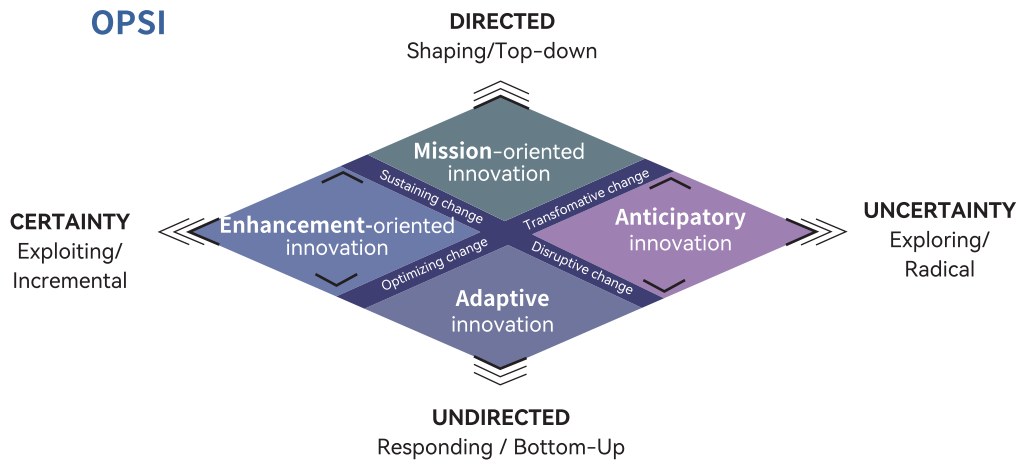
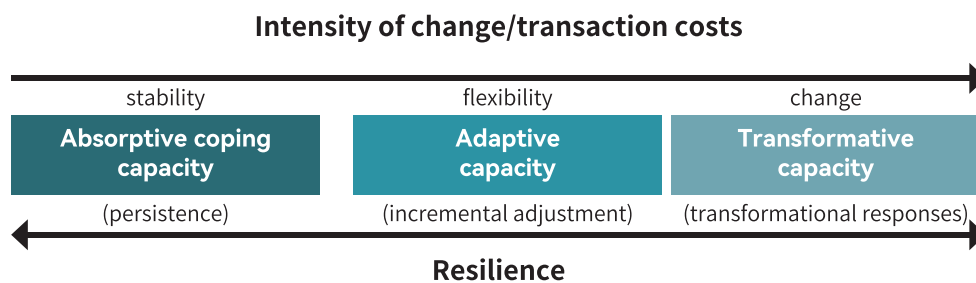


Image 2: Observatory of public Sector Innovation, 2019

Climate-KIC. "Opening-up the Sustainable City: Towards an Open Innovation Framework for Future Low Carbon Cities" 2019. Open Innovation is an approach commonly described as the antithesis to traditional innovation methods. Thus, instead of research and development (R&D) being pursued internally, and distributed later, Open Innovation encourages [collaboration of] ideas, knowledge, technologies, and competencies by working with customers, users, citizens ..with different backgrounds".

UNDP. "Future of Knowledge; A Foresight Report", 2022.

Figure 1.9: The 3D resilience framework



Source: Béné and others, 2012

Transformative capacity is built on two main characteristics – innovative capacity (i.e. the ability of the system to create an enabling environment fostering innovation and experimentation) and collaborative capacity (i.e. the ability to organize and act collectively). Innovation could be defined as a means of creating knowledge and providing answers to the urgent global challenges faced by our societies, and is often perceived as a driver of sustainable and resilient economic and social growth.

Urban Innovative Actions: new and experimental and not tried anywhere else (40). Additional: Participative (15), Transferable (10), and Measurable (15). This is in strategic assessment. Operational Assessment: Quality Check (20). Value addition to the topic at hand. Provides clear evidence of research into existing best practice in the area. Builds on existing policies and practices. Identifies obstacles and resistance and how to overcome it.

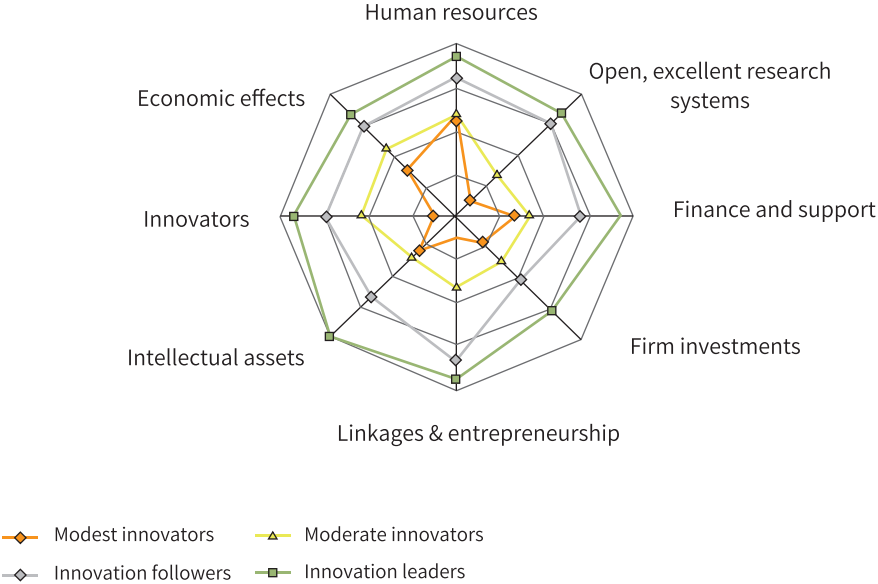
OECD: An innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations.

Innovation Nation (Department of Innovation, Universities and Skills, 2008): Successful exploitation of new ideas (Same as above). Focus on looking beyond traditional sights of innovation: expanding to arts and creative industries and understanding 'success' and 'hidden innovation'.

Innovation Report (Department of Business Innovation and Skills, UK, 2014): application of knowledge to production of goods and services.(See image 3 for EU Scheme)

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Source: European Commission (2013) Innovation Union Scoreboard

Image 3

Institute of Public Administration (Australia, 2020): Innovation awards given for Citizen Centered innovation, Harnessing Digital and Data Technology, Changes in Culture and Capability, Disruptor/Startup/Experimental.

World Economic Forum (WEF, 2015): Four principles which are core to complex urban problems: unleashing spare capacity, cutting out the peaks, small scale infrastructure thinking, people centered innovation.

Future of US Cities (BCG, 2019): Moving away from legacy approach to innovation; one focused on being opportunistic instead of strategic, concentrated on city hall, fragmented along bureaucratic, sectoral and geographical fault lines. Innovation must be anchored in legitimacy, equity, agility.

Landscape of Innovation Approaches (Leurs, UNDP Accelerator Lab Network, 2018): Four spaces which make up the landscape; Talent Space (Empowering people), Solution Space (Shaping reality), Intelligent Space (Understanding Reality), Technology Space (Enabling Action). (See Image 4)



Image 4

Compendium of Innovation Methods (Nesta, 2019): They put forth an innovation spiral consisting of : opportunities and challenges, generating ideas, developing and testing, making the case, delivering and implementing, growing and scaling, and changing systems.

Urban DNA Study of Indexes : Three major shortcomings of understanding Urban Innovation (See Image 4)

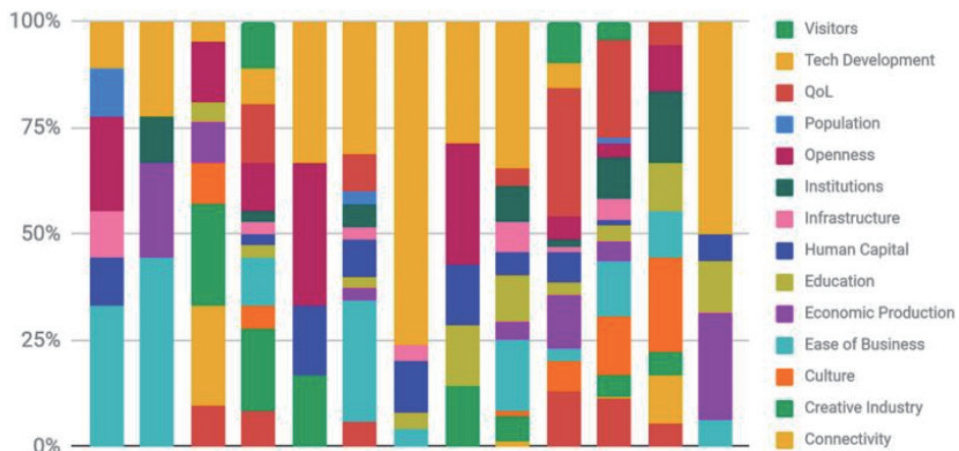


Figure 5: Visualisation of the terms that various Indexes consider comprise Urban Innovation

Image 5: Review of components of indexes of Urban Innovation

Additional Resources: Selected Biography List

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European Commission, Directorate-General for Research and Innovation, Mazzucato, M., "Mission-oriented research & innovation in the European Union : a problem-solving approach to fuel innovation-led growth", Publications Office, 2018, <https://data.europa.eu/doi/10.2777/360325>

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2Think Now. "Innovation Cities Program, City Rankings, Innovation Cities(tm) Index", <https://www.innovation-cities.com/162-standard-indicators/6365/>

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OECD Centre for Entrepreneurship, SMEs, Regions and Cities, and Bloomberg Philanthropies. "[Enhancing Innovation Capacity in City Government](#)"

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Pisano, Gary. "You Need an Innovation Strategy", Harvard Business Review, June 2015.

Senge, Peter, Hamilton, Hall, Kania, John. "[The Dawn of System Leadership](#)" Stanford Social Innovation Review, 2015.

Soumitra Dutta, Bruno Lanvin, and Sacha Wunsch-Vincent Editors. "Global Innovation Index 2020", 2020, 13th Ed. Cornell University, INSEAD, and the World Intellectual Property Organization (WIPO) <https://www.globalinnovationindex.org/about-gii#framework>

Max Sterns, "[Civic Fables: Developing New Language of Failure in Local Government Innovation](#)" The Mayor's Office of New Urban Mechanics, Boston MA

Terje Aven, Ortwin Renn, Improving government policy on risk: Eight key principles, Reliability Engineering & System Safety, Volume 176, 2018

UN Habitat Innovation Unit, External Relations, Strategy, Knowledge and Innovation Branch. "Fostering Innovation in Urban Programmes and Projects Guidance Note"

[United Nations Innovation Toolkit \(United Nations, 2019\)](#)

UCLG, Cities Alliance, UNDP. "City Enabling Environment Assessment", 2018.