

# POLICY BRIEF

## Transition towards urban sustainability and socially integrative cities

*Innovative practices and tools from eco- and smart cities  
for bridging the planning-implementation gap.*

*Deliverable 2.4 | May 2021*







This policy brief is aimed at city representatives as well as experts, researchers and academic partners working in the fields of spatial and urban planning and development.

The document outlines the central outcomes of work carried out by an interdisciplinary team of experts and researchers over the three-year **TRANS-URBAN-EU-CHINA** project. The outcomes compiled in this document tackle the gaps between urban strategic planning and implementation.

This brief presents a range of solutions that cities are encouraged to apply in the face of challenges currently affecting urban environments and their inhabitants. The solutions specified in this document have been tested and implemented in European and Chinese cities and can serve other cities as good practice examples. Based on these specific experiences of European and Chinese cities, the policy brief enables the reader to gain a focused overview of practical tools and methods that can help to narrow the gap between planning and implementation, leading to more sustainable, socially inclusive cities.

“In the end, implementation depends on the willingness of the community.” (Nebojša et al. 2018)

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# TOWARDS ECO- AND SMART CITIES

Our cities are constantly changing, sometimes for the better and sometimes for the worse. Intelligent urban planning makes use of these urban dynamics to reduce the ecological footprint of cities, to improve the living conditions of their population and to make cities more innovative and competitive.

Many cities have developed eco- and smart city strategies as management tools for these urban transformation processes. However, city administrations often find it **very hard to bring high-level strategies to the implementation stage**, and many smart and eco- city projects have failed to meet the relevant standards after implementation. It is therefore very important to discuss how the wide planning-implementation gap in smart and eco- cities can be closed, and what planning tools and instruments have proven to be successful in this regard.

This brochure is the result of the **TRANS-URBAN-EU-CHINA** project. As part of this project, researchers from top universities and research organisations from both Europe and China have successfully worked together for three years to analyse urban challenges.

Our analysis clearly shows that bridging the gap between planning and implementation is a big challenge for European as well as for Chinese cities.

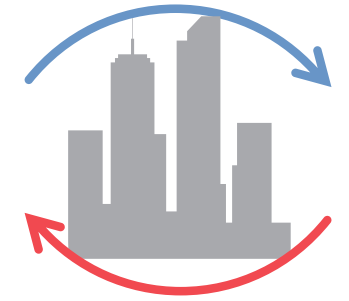
- We did not come up with one single ultimate solution to this problem, as there is **no one-size-fits-all-solution**: plans do and must change so as to move eco- and smart city projects forward towards

implementation. This means that the result can never be identical to the original plan. Consequently, this requires a certain **degree of flexibility** and especially **agile approaches** in urban planning. Furthermore, **quality management** is required to ensure that the guiding principles of the original concept are kept and enhanced and concretised as part of an iterative process.

- Moreover, the **geographical, economic, political and cultural context** in which smart and eco-city projects are developed in Europe is very different from that in China. Therefore, not all successful approaches from Europe will work in China, and vice versa.
- However, we identified a wide variety of approaches taken by European and Chinese cities addressing all dimensions of the planning and implementation process, from data management to citizen engagement and technical implementation for business modelling.

The aim of this policy brief is to share all of these valuable outcomes with all European and Chinese cities as well as with the international community of urban researchers and urban civic action groups to ensure that all the valuable knowledge created by the cities we analysed will become useful, not just within the boundaries of this project, but also in other cities and regions in Europe and in China.

# ECO- AND SMART CITIES



## Cities in transformation

Cities are facing challenges that require more flexibility, such as migration, climate change, urbanisation, less well-coordinated governance, acute industrial restructuring and other major challenges. These challenges have triggered transformation processes both in European and in Chinese cities.

In parallel, urban qualities are strongly influenced by social, environmental and technical changes, and traditional planning methods can no longer satisfy the growing demands on sustainable urban planning. Successful management and implementation of smart and eco-city strategies and projects are an important component to ensure that cities will be more sustainable and socially integrative in the future. In order to support the cities on their way towards smart and eco-friendly development, specific capacities such as flexibility and agility, leadership and coordination, proactive planning, multi-actor/ multi-level governance and many others need to be strengthened.

However, building these capacities and managing urbanisation, while at the same time introducing sustainability into the process is a complex issue. It is technically, socially and financially challenging, as well as from a governance perspective.

How can we understand the long-term, multidisciplinary impacts of technical developments or improper/ delayed action?

How can we make people embrace complexity in today's world and make them accept change?

What financial instruments and strategies deliver optimal results?

What sources of funding should be utilised?

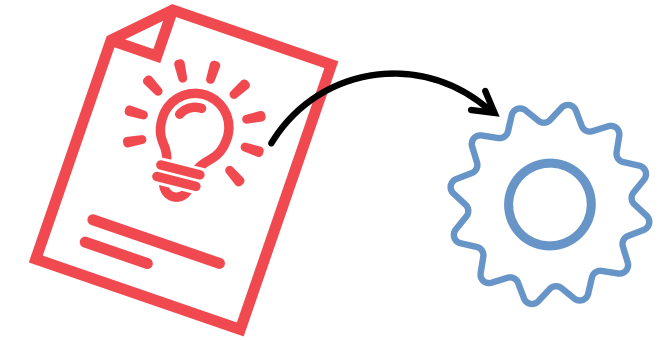
Cities are key locations for how to tackle and respond to these fundamental questions and challenges. They look for unconventional solutions to manage and eventually overcome these challenges by unlocking their innovative potential and encouraging niche innovations. Furthermore, they establish new institutional structures, practices and modes of action which have greater potential for successfully leading to more sustainable and socially integrative urbanisation.



*A socially integrative city is defined as a socially mixed, cohesive, liveable and vibrant community. Compactness, functional mix, and intra-urban connectivity play an important role. Environmental quality, quality of public spaces and quality of life contribute to the well-being of the population.*

# FROM STRATEGY TO

# IMPLEMENTATION



## The gap between planning and implementation - a challenge

### Characteristics of socially integrative approaches

- Diversity of the actors involved, resources for actors to become active
- Continuity of active actors across multi-level governance
- Cross-sectoral integration in strategy/ planning and implementation
- Common vision shared by all actors at the beginning
- Opportunities for experimentation and testing
- Evaluation and monitoring from strategy to implementation
- Working across agency levels which brings experience and history of existing cooperation
- Working across political-administrative levels and across geographical scales so that cities and actors can exchange experience and expertise at a national and/ or international level

Building socially integrative cities is high on the European agenda, and it has also become one of the top priorities of the Chinese government's commitment to foster sustainable urbanisation and the development of smart cities. Yet, there is still a gap between these aspirations reflected in strategic documents and urban plans and the actual implementation of these aspirations in practice.

### Bridging the planning-implementation gap

It is important to note that the gap between strategic planning and implementation should be understood within the framework of the locally differentiated and specific contexts.

**Transformation pathways may take many forms and there is no 'one-size-fits-all' approach.** Many European and Chinese cities have strategic plans that provide guidance for their development into, for example, eco-cities or smart cities in the medium to long term.

Strategies are an important milestone at the government level, but in times of rapid developments and changing framework conditions, both at the global and local level, cities need to constantly re-adapt. More flexible ways are required for implementing measures and governing processes – while still remaining in accordance with the planned long-term strategies.

Usually, eco- and smart city strategies aim to develop new solutions to urban problems with more flexible, integrative approaches, based on dynamic and real-time urban data. Research and innovation programs offer an incentive to create such new approaches.

What we see is that urban transformative capacity is a prerequisite for long-term transformative change. According to Walker et al. (2004), transformability as such is the capacity to create a fundamentally new system when ecological, economic, or social structures make the existing system untenable. Similarly, Loorbach et al. (2016) relate the term 'transition' to *"locked-in regimes that are challenged by changing contexts, ecological stress and societal pressure for change as well as experiments and innovations in niches driven by entrepreneurial networks, and creative communities and proactive administrators"* (Loorbach et al. 2016). Transformative change from unsustainable to sustainable development paths can be seen as multi-actor processes, which entail interactions between social groups (cf. Geels 2010).

According to Wolfram (2016), transformative capacity can be defined as the *"collective ability to conceive, prepare for, initiate and perform path-deviant urban change, thus enabling future development within planetary boundaries"*.

Pathways towards transition for integrative planning can be derived based from the understanding of transformative capacities and the building of such capacity.

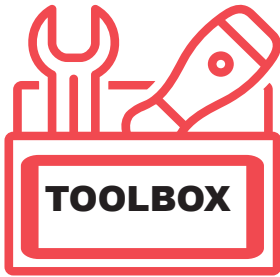
European and Chinese case studies show some critical measures and activities for inducing long-term transformative change, for example:

- Diversity of actors and appropriate resources
- Leadership and ownership by appropriate key actors
- Continuity of actors across multi-level governance/bodies
- Expanding existing planning tools with informal tools (networking, mobilising and agile institutional arrangements)
- ICT enables new tools but local challenges must be in focus (place-based and tailor-made tools)
- New approaches need more mutual understanding and engagement - social and behavioural aspect should not be underestimated

Most reasons for the implementation gap are not new but they need structural change in the city departments, open-minded stakeholders and space for innovation and exchange.



# PRACTICAL TOOLS TO NARROW THE PLANNING-IMPLEMENTATION GAP



We have conducted a comprehensive analysis of the transformative capacity of European and Chinese showcases and identified the most innovative approaches taken by European and Chinese cities to implement their strategic smart and eco-city goals at the project level so as to narrow the planning-implementation gap.

The table below and the following pages give an overview of the most innovative tools and mechanisms we identified and show how these tools and mechanisms are used in practice.

It is often necessary to combine different tools and mechanisms for a successful implementation. The ten tools and mechanisms presented can therefore be understood as a toolbox from which cities can select the tools they need based on their challenges, environment, involved actors, and goals.



More details on the tools and mechanisms can be obtained from Deliverable 2.3 (Neumann et al. 2021).

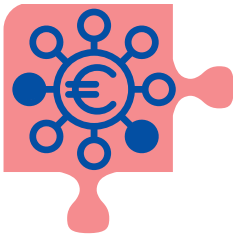
The tools are also described on the project website, the QR Code provides direct access.



## PRACTICE EXAMPLES FOR SUSTAINABLE AND SOCIAL INTEGRATIVE TOOLS AND MECHANISMS

<p><b>Responsibility decomposition approach for short-term construction projects</b></p> <p>Citylab as a modular, interdisciplinary dialogue platform to develop solutions</p> <p>Involvement of citizens through "Reunions" (round tables). Multidisciplinary teams develop places and neighborhoods</p> <p>Neighborhood support through a volunteer service team</p> <p>Task decomposition approach for Sponge City pilot construction: from planning, implementation to institution</p> <p>Smart City Investment fund</p> <p>Experts discussions to formulate a smart community construction plan; Involvement of Governments in pilot programs</p>	<p><b>Building a comprehensive energy service platform (services for citizens) for an sustainable development</b></p> <p>To monitor the progress in a transparent way the city uses a kanban board</p> <p>Identifying ideas and needs of the citizens with (brainstorming) meetings</p> <p>Mirco-center approach to provide resident-centered services in the neighborhood</p> <p>Agile communication with the different stakeholders and partners through digital tools and an agile process with feedback loops</p> <p>Combination of municipal urban renewal project and affordable housing project</p>	<p>Strategic plan defined monitoring metric and principal responsibility and monitoring responsibility; Annual Stockholm Development Administration report</p> <p>Ensure replication through own work package</p> <p>"3Yan" Application Innovation Park (AIP) to build a user-centered application innovation platform</p> <p>Establishment of Eco-city Green Industry Alliance</p> <p>Smart City Platform</p> <p>Communication strategy for the whole city</p> <p>Different stakeholders work together on public problems through an open working platform</p> <p>Special funding for Sponge City Projects</p>	<p><b>Strengthening the management of the city through a common smart city construction project database and the use of technical aspects for standard specification and system integration</b></p> <p>Participatory planning with professionals, residents, students, etc.</p> <p>Responsibility decomposition approach for short-term construction projects of Optical Valley</p> <p>Coordination of smart city activities between Greater London Authority</p> <p>Urba Laboratory for testing technology</p> <p>Citizen Involvement through public display and online information campaign</p>	<p><b>Citizen engagement through events; exhibitions; questionnaires</b></p> <p>Thematic working groups/ civil contracts as well as feedback loops</p> <p>Several digital platforms are used within the smart city ecosystem</p> <p>Capacity Development Program with seminars/ forum</p> <p>Urban grid management</p> <p>Special funding for information infrastructure</p> <p>Intelligent-Twins for urban safety guarantee</p>
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## EXAMPLES OF USE IN PRACTICE



**Funding structure and financing** are the backbone of the plan implementation process. Smart cities cannot and need not be funded by the public sector alone. Cities and financial institutions develop new financing instruments that can complement and gradually replace public funding.

### Practical example

The Greater London Authority (GLA) has initiated an investment fund that should attract private capital to finance innovative infrastructure projects and thus bring the smart city development of London to the next level (Colclough 2016).

Other examples: funding from different funds and private-public partnerships.



**Multi-actor governance** sets the framework for interdisciplinary and cross-sectoral co-operation of experts, city administrations

and a range of stakeholders; it enables the emergence of new perspectives and more innovative and qualitative solutions through the coupling of different fields of knowledge.

### Practical example

**Stockholm Royal Seaport Development - early involvement and commitment of various actors**

During the planning process, the city established **thematic working groups**. This format created space for exchange between representatives of the city administration and the private sector. **Feedback loops** were built in between the appointees overseeing the overall strategy at city level and experts from the thematic working groups. Close monitoring of the implementation performance was assured through regular public sustainability reporting. **Civil contracts** were applied as a legal instrument, ensuring implementation of the set strategic planning goals.

Other examples: discussion with the city department and practical experts.

### Overview of the categories

- Funding structure financing
- Multi-actor governance
- Citizen participation and actor involvement
- Living Lab approach

Government-Bank cooperation for business district projects

Cloud platform for planning (CITYIF)

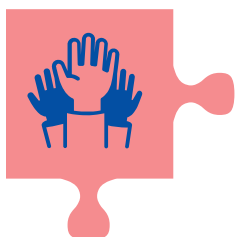
Regular internal reporting

SITEE replicability tool

Funding for refurbishment of social housing

- Capacity development
- Agile project management
- Monitoring and evaluation
- Awareness raising
- Setting up replication mechanism
- Digital planning tools

# PRACTICAL TOOLS FOR ECO- AND SMART CITIES



## Citizen participation and actor involvement

The knowledge of the population as local experts complements the know-how of the technical experts

and leads to better sustainable development outcomes. The goal is to find a reasonable balance between the interests of the residents and the collective requirements of growing cities. Through the involvement of citizens and actors, the strength of the plans and the degree of success in their implementation can be tested and improved.

### Practical example

*Madrid: 'Reunions' - round tables for strategic planning actions*

The city used a decentralised, but top-down initiated approach to citizen engagement. Each city district 'owns' a citizen participation process called a 'Reunion'. The facilitation of a Reunion event is set up in two segments. The first segment is composed of **thematic input** presented by the city planners and city administration. The second segment involves **round table discussions and working sessions**. The Reunion events generate a list of shared actions that are reviewed and prioritised by every district. The proposed actions are evaluated by the city council and decisions are made in line with the preceding process and outcomes.

Other examples: promoting meetings between companies from different sectors, ideas prioritised by the public and then implemented, citizen information about

ideas and plans displayed in popular public places and with online information campaigns, involving professional design teams, residents, children, students, people from various fields and practical experts in the planning process.



## Living Lab approach

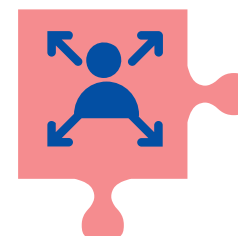
Living Labs enable cities to develop innovative solutions in a real-world environment and based on a collaborative well-moderated setting, together with citizens, stakeholders, experts and any other groups of actor's. The approach provides a framework for co-creation, testing and validation of solutions by involving, mobilising and including different groups of people, allowing to access to local knowledge and providing an immediate reality check.

### Practical example

*Vienna: Seestadt Aspern*

The 'Citylab' was established in a new urban development project called 'Seestadt Aspern' in Vienna. It is a modular, **interdisciplinary dialogue platform** and space dedicated to developing, discussing and promoting forward-looking solutions, based on exchanges between different stakeholders. The Citylab participants **work on concrete questions** related to the planning processes, such as investigating the framework conditions and instruments for developing different types of spaces. Interested individuals and experts are openly invited to engage in the discussion and co-

creation process. The outcomes generated in the Citylab serve to identify and fine-tune urban development strategies and measures.



## Capacity development

The complex nature of urban planning and implementation requires capacity development on different levels.

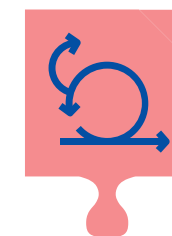
The aim is to strengthen the existing skills, capacities and knowledge of the various stakeholders involved. Capacity development enables a range of urban public and private stakeholders and actors to acquire new skills required for the planning and implementation of integrated and sustainable urban projects. It is a long-term development process that requires adequate resources, investment, ongoing attention, coordination and commitment. Different cities usually develop tailored solutions and approaches that best suit their current state of planning and development culture.

### Practical example

*Stockholm: Royal Seaport - capacity development programme*

One of the best practice examples for the application of this tool and mechanism is the ongoing capacity development programme of the City of Stockholm, which was launched in 2010. This programme is composed of a wide range of capacity building activities including **seminars** for developers and consultants, city representatives and city personnel involved in urban planning. An important building block of this capacity development programme is a **Forum for Sustainable Urban Solutions**. The Forum provides

space for 'matchmaking seminars' that enable different stakeholders to meet and exchange their expertise on different sustainable solutions, services and products.



## Agile project management

This supports a dynamic, non-linear and adaptive project implementation process and therefore fits the nature of urban development and

implementation projects that require multiple feedback loops and coordination steps between different stakeholders, actors and citizens. The flexible and dynamic nature of this approach to project management provides scope for adjustments as needed throughout the project implementation process. It empowers all project stakeholders to work together to adapt to the changing project environment, context, and conditions and increase the level of ownership. The approach is often misinterpreted/ -reduced to technical tools, such as scrum, etc., which can, but do not have to be applied in the project implementation process.

### Practical example

*Vienna: Smarter Together*

Agile project management has been successfully applied in the planning and implementation of the 'Smarter Together' project in the City of Vienna, Simmering district. The project team has applied agile project management from the very start of the project in two different ways. On the one hand, **digital technical project management tools** were used for agile communication with the different groups of stakeholders and partners. On the other hand, the **process** itself was also **agile** as expressed in the Continuous Quality Improvement (CQI) approach. That means that feedback loops



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were introduced after each implementation step, and these insights were incorporated into the next steps, also known as a PDCA cycle – **Plan-Do-Check-Act**.



## Monitoring and evaluation

The aim of monitoring and evaluation is to consistently track and determine the level and

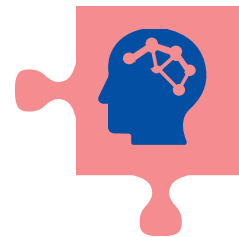
the degree of success achieved in the implementation of agreed strategic goals, actions and measures. Therefore, clearly defined, reachable goals are needed. Specific indicators are required to ensure effective monitoring and evaluation leading to a clear and transparent evaluation process. Regular and real-time monitoring and a successful evaluation process enable the involved to make suitable and adequate adjustments, where necessary.

## Practical example

*Stockholm: Royal Seaport - frequent & collaborative monitoring*

The monitoring and evaluation process was **outlined in the strategic plan** by defining monitoring metrics and specifying the related responsibilities and roles. The instrument of **civil contracting** between the City of Stockholm and the developers (who are an inclusive part of interactive working groups) and the **monitoring and reporting loops** are embedded in the implementation process. Such 'built -in' **frequent reporting practices** (Annual Stockholm Development

Administration reports) create direct feedback on the achievements of the sustainability requirements relating to implementation activities and share the lessons learned from the different stakeholders. In addition, all working group participants are requested to **share their experiences within their administration**. Furthermore, a continuous exchange of information between different projects is common practice in Stockholm. Such different forms of experience exchange and progress tracking enable monitoring and evaluation to become a central part of the development process.



## Awareness raising

is a process which informs and educates people about a topic or project and manages expectations, behaviours and beliefs about the

achievement of a defined purpose or goal. The instrument usually combines a variety of campaigns while applying varied channels of communication, because the channels for raising awareness must fit the target group. And there are always risks that different groups of society may not be reached.

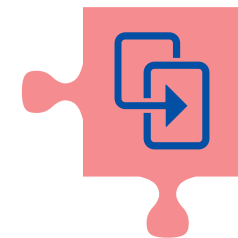
## Practical example

*Vienna: Smart Management for Smart Cities (Strategy)*

Forward-thinking development can only be successful if based on broad acceptance and commitment, understanding, interest, awareness and recognition of benefits

and responsibilities among various actors. Therefore, Vienna has tailored a specific communication and involvement approach by adopting short- and long-term cross-media communication strategies, including **website operation, social media presence, offline events, advertising, PR and media coaching for experts** at all relevant units, as well as event and participation management.

Other examples: Neighbourhood Convention/ volunteer service teams



## Setting up replication mechanisms

is important from the point of view that pilot projects should not remain a 'one-off' exercise. The aim is to ensure successful implementation;

there is no-one-size-fits-all approach. Local conditions can have a strong impact and expose a range of barriers as well as enablers. While numerous approaches and technologies address urban challenges, the processes of urban road-mapping and vision development remain complex. In many cases, successful solutions that work in one urban context fail dramatically when transferred to another urban setting. It is risky and not sufficient to attempt to copy and paste an existing solution from one urban environment to another, as various local factors may counteract the well-intended aims. Therefore, it is necessary to follow a range of principles and guiding steps required to identify the most replicable urban solutions to match different urban contexts.

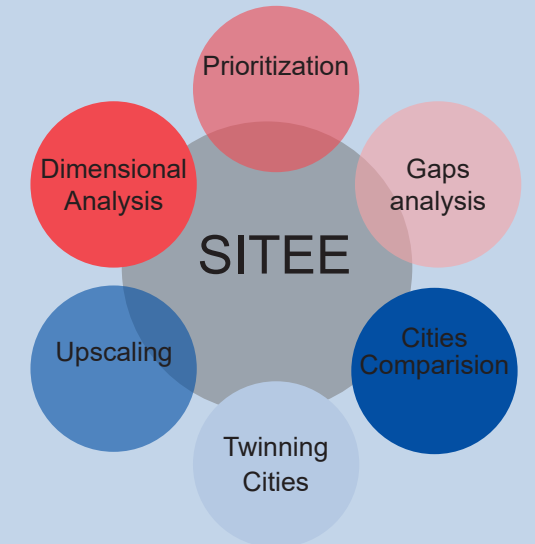
*"Smart city pilots involve developing and/or testing technologies and new approaches, which are geared towards improving the quality of life*

*and efficiency of services offered to city inhabitants. To avoid the situation where pilot schemes are a 'one-off' exercise, opportunities to scale-up or replicate successful and innovative pilots are often sought" (Ferrer; Taranic 2020: 8).*

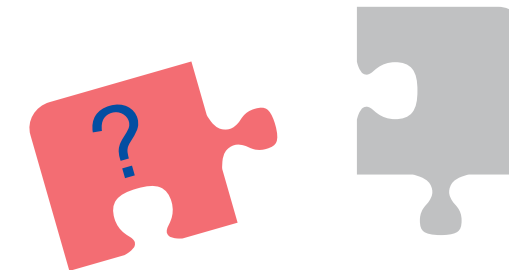
The SITEE tool was developed to identify the most replicable urban solutions for different cities. The approach is based on the analysis of 5 dimensions: **Sociocultural**; **Institutional**; **Technological**; **Environmental** and **Economic**. SITEE is an experimental tool that was developed by ISINNOVA during the second year of the project.

## Practical example

*SITEE*



The goal of SITEE is to identify the replication potential of different urban solutions in a specific place, taking into account the full range of local factors that could influence their applicability. The ambition is to support cities in selecting the most suitable solutions for their local context. In order to validate the methodology, it was decided to test it in one of the project's Urban Living Labs Wuhan, involving Chinese Academy of Sciences (CAS) as the local reference and contact



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point of the city. The aim was to estimate the replication potential of a set of European urban solutions in the city of Wuhan. The outcomes of this test are relevant for the validation of this new method and for identifying areas for further improvement across the whole process, based on the ambition to build a solid and robust approach for estimating replicability that could be extended to other Chinese cities.



### Digital planning tool

Digital applications are used to better manage the increasing urban complexity, the heterogeneous context and the variety of overlapping trends. Digital

tools can support decision-making processes with information derived from real-time data. Digital planning tools support different aspects of spatial planning, such as problem diagnosis, data collection, data mining and extraction, spatial and temporal analysis, data modelling and visualisation. The risk of using digital planning tools is that they are disconnected from human needs. They may fail to provide a real added value and thus turn into a 'nice to have' solution. The complexity, structure and user friendliness of digital planning tools will determine whether these will be applied.

### Practical example

#### *Santander Smart City Platform (ES)*

The Santander Smart City Platform integrates heterogeneous data derived from

all municipal services. This platform provides a flexible and agile environment capable of creating, facilitating and storing a common repository of information. The municipality and the university signed an agreement on joint ownership of the database. The data **platform is set up to allow for data sharing** (real time data, such as traffic, parking sensors, street lights etc. as well as statistical data). The set-up of a data market-place and the deployment of different services and apps have been prioritised from the beginning of the Smart Santander development process.

Other examples: data platforms which enable different services and apps for various scenarios.

## CONCLUSIONS AND RECOMMENDATIONS

The case studies reveal that certain transformative capacity-building measures and activities are critical across Chinese and European cities, such as the diversity of actors and appropriate resources, strong leadership and problem ownership as well as the continuity of actors across multi-level governance. These measures are particularly important when it comes to building capacity for effectively closing the planning and implementation gap.

However, while there are commonalities in the importance of certain transformative capacity-building measures between Europe and China, these capacity measures and activities always embody the local context as well as the specific stage of the policy cycle.

### China

- Chinese cities express this diversity of actors and resources from a more vertically organised governance perspective.
- Top-down approaches to smart city planning and the provision of smart city programmes is one of the success factors in China.
- The government-led pattern of leadership and ownership further catalyses and stimulates the enthusiasm of all sectors of society and empowers actors at lower administrative levels.
- Chinese cities have developed a strong focus on structured peer-to-peer learning among urban development officials and on bi-lateral learning and experience-

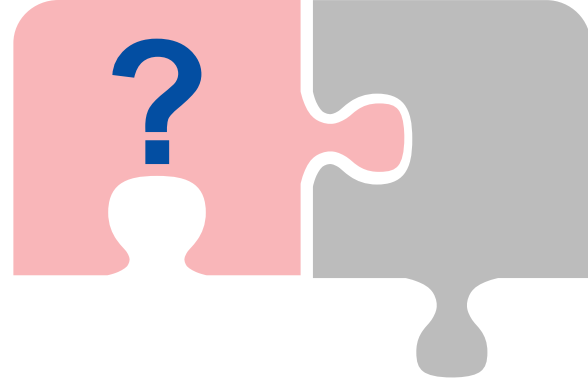
sharing partnerships with dedicated cities outside of China, thus fostering the capacity of reflexivity and social learning for long-term transition pathways.

### Europe

- European cities show a strong tendency to organise and substantiate the diversity of actors in a horizontal way, which goes hand in hand with a more distributed and decentralised interpretation of 'leadership and ownership' measures in smart city development.
- Instead of top-down approaches, smart city planning and implementation success in Europe builds on more bottom-up approaches.
- European cities have used innovative approaches and processes to facilitate cross-departmental as well as cross-jurisdictional collaboration, even though this comes with higher transaction costs due to additional coordination efforts.
- Monitoring and evaluation are crucial in Europe as transparency is seen as an opportunity to facilitate learning between stakeholders and to allow for flexibility and adaptation in planning and implementation processes. Good practice examples and lessons learned are to be shared with a wider group of stakeholders in order to enable knowledge transfer and capacity building.

As our case studies have shown, Smart Cities in Europe and in China have successfully applied the tools presented in this report





## CONCLUSIONS AND RECOMMENDATIONS

to build transformative capacities and thus close the gap between their strategic long-term objective and their implementation at the project level.

The tools, however, need to be selected in a context-specific manner, as not every tool will work in every city. A good understanding

of the local needs and of the transformative capacities of the city is therefore very important. This understanding is not only key for selecting suitable tools and mechanisms, but also a prerequisite for planning and building socially integrative cities.

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### Pictures

- **Front cover**: Fang; Stephen 2020, Summer in Wuhan. Available: <https://unsplash.com/photos/c7AexGJdzpU>
- **Back cover**: Leyy . 2019, Busy Street in Vienna. Available: <https://unsplash.com/photos/x5icsOgc7Lw>

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### Acknowledgement

Loriana PAOLUCCI, Andrea RICCI (ISINNOVA)  
 Jianming CAI, Yan HAN, Jing LIN, Empu MA, Wei HAN (CAS)

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Anthony COLCLOUGH, Arianna AMERICO (EUROCITIES)





This Policy Brief has been elaborated and published online by the TRANS-URBAN-EU-CHINA project consortium. The material reflects only the authors' views. The European Union is not liable for any use that may be made of the information contained therein. The project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No. 770141.

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ON THE PROJECT HOMEPAGE:**

