DEMOS HELSINKI

People First: A Vision for the Global Urban Age

Lessons from Nordic Smart Cities

DEMOS HELSINKI

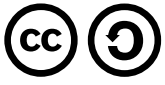
“Cities have the capability of providing something for everybody only because, and only when, they are created by everybody.”

Jane Jacobs, 1961

People First: A Vision for the Global Urban Age

Lessons from Nordic Smart Cities

This publication is the result of a collaboration process of the Nordic think tank Demos Helsinki and the four biggest cities of Finland: Espoo, Helsinki, Tampere, and Vantaa. The content of this report is based on learnings gathered through a literature review, joint benchmarking trip to Barcelona in October 2019, and separate workshops with each of the partner cities. The work has been jointly funded by the partner cities and Demos Helsinki. The content of this publication represents the views of the authors only and is their sole responsibility. It cannot be considered to reflect any official views of the partner cities.



Cite this publication as
Bremer, O., Kinnunen, N., Koponen, J., Laurila, L., Leppänen, J., Malho, M., Mokka, R., & Suikkanen, H. (2020). People First: A Vision for the Global Urban Age. Lessons from Nordic Smart Cities. Helsinki: Demos Helsinki publications.

DEMOS HELSINKI

Publisher
Demos Helsinki

Authors (in alphabetical order)
Olli Bremer
Niko Kinnunen
Johannes Koponen
Louna Laurila
Juha Leppänen
Maria Malho
Roope Mokka
Henrik Suikkanen

Working group from partner cities
Päivi Sutinen, Veera Vihula & Wilhelmiina Griep, City of Espoo
Pasi Rautio & Jussi Vehviläinen, City of Helsinki
Teppo Rantanen & Tiia Joki, City of Tampere
Mirka Järnefelt & José Valanta, City of Vantaa

Layout
Kirmo Kivelä

Images
Unsplash

Publication year
2020

ISBN
978–952–5844–48–1 (PDF)

Contents

Executive summary

The smart city development is at a critical crossroads, where power and politics have become central to the way digital technologies are used in cities. The vast criticism of digital technologies being used to monitor, control and even manipulate people, and to centralise and take power away from citizens and public administrations, is risking the legitimacy of the smart city project. What has been the key function of the smart city project – using digitalisation to seek efficiencies in various city operations – has given way to a new phase with competing models for governing the city and the citizens.

Despite the discontinuity of the smart city development, the promise of digital technologies and operating models for cities is unparalleled. It is most evident in driving efficiency of the built environment and other urban infrastructure which offers new ways to govern urban dwellers and foster collaboration. This is a critical element of a well-functioning city of the 21st century so the need for digital tools is not going away.

A new narrative for using technology in cities is emerging

While it is argued that smart city development is at an impasse, we argue that it is at a crossroads. It is possible to simultaneously develop and adopt new technologies and strengthen people's rights.

This has been proven in the Nordic cities and Barcelona. The People-first vision presented in this report shows how it is possible for all cities.

People-first Vision

The People-first vision is a new perspective to how cities can govern and benefit from digital technologies in the global urban age, by developing people's rights and technologies in harmony. It is based on an analysis of different ways of how this is done in Nordic cities, Nordic city networks, and in Barcelona.

The People-first vision offers an alternative to technocratic governance models that are, on the one hand, being criticised for their inclination to compartmental optimisation and, on the other hand, contributing to breaches of privacy and narrowing human rights. In the People-first vision, the mandate for governance comes directly from the people itself and hence, the technological tools are used respecting their rights.

There is a number of cities that show us glimpses of how the new phase of city governance could look like by actively leading their smart city ecosystems and by putting people first. In this report, the case studies of Nordic cities (Espoo, Helsinki, Tampere, and Vantaa), a city network (Nordic Smart City Network), as well as the City of Barcelona in Spain demonstrate that cities that want to take full benefit of digital technologies have to give them sufficient priority in the city organisation, move from facilitating smart city ecosystems to leading them, and recognise that different sectors of society – civic, public, and corporate – all have unique ways of creating value.

The report thus promotes a new, Nordic-born yet universally applicable way of governing digital technologies and using them to govern a city. What is presented here is not another smart city model but an alternative to the existing approaches: a new narrative of how cities can benefit from digital technologies. The narrative defines three fundamental characteristics of smart city governance that protect and promote people's interests in a city. The three characteristics of people-first city governance are:

- **Unbounded:** City governance is cross-sectoral, highly networked and organised around people's life events and universal services rather than public sector departments.
- **Vision-driven:** Smart city initiatives drive the city's long term and strategic goals (and vice versa), the city leaves space for experimenting with new initiatives, and the user point of view is in harmony with the ideal of active citizenship.
- **Regenerative:** The city aims to empower people and allow "emergence" of digital technologies, strengthens democracy through innovations in participation and digital markets, and creates services that allow competition and real choice.

These three characteristics in the cases studied explain how Nordic cities, in particular, have managed to maintain the high usability of digital services along with promotion of people's voluntary action.

As the smart city project has been the de facto development paradigm for cities since the 2000s, the insights gained in this study yield a wider lesson to governing cities in the urban age. The discontinuity of the smart city development is symptomatic of a far deeper change in how cities are governed.

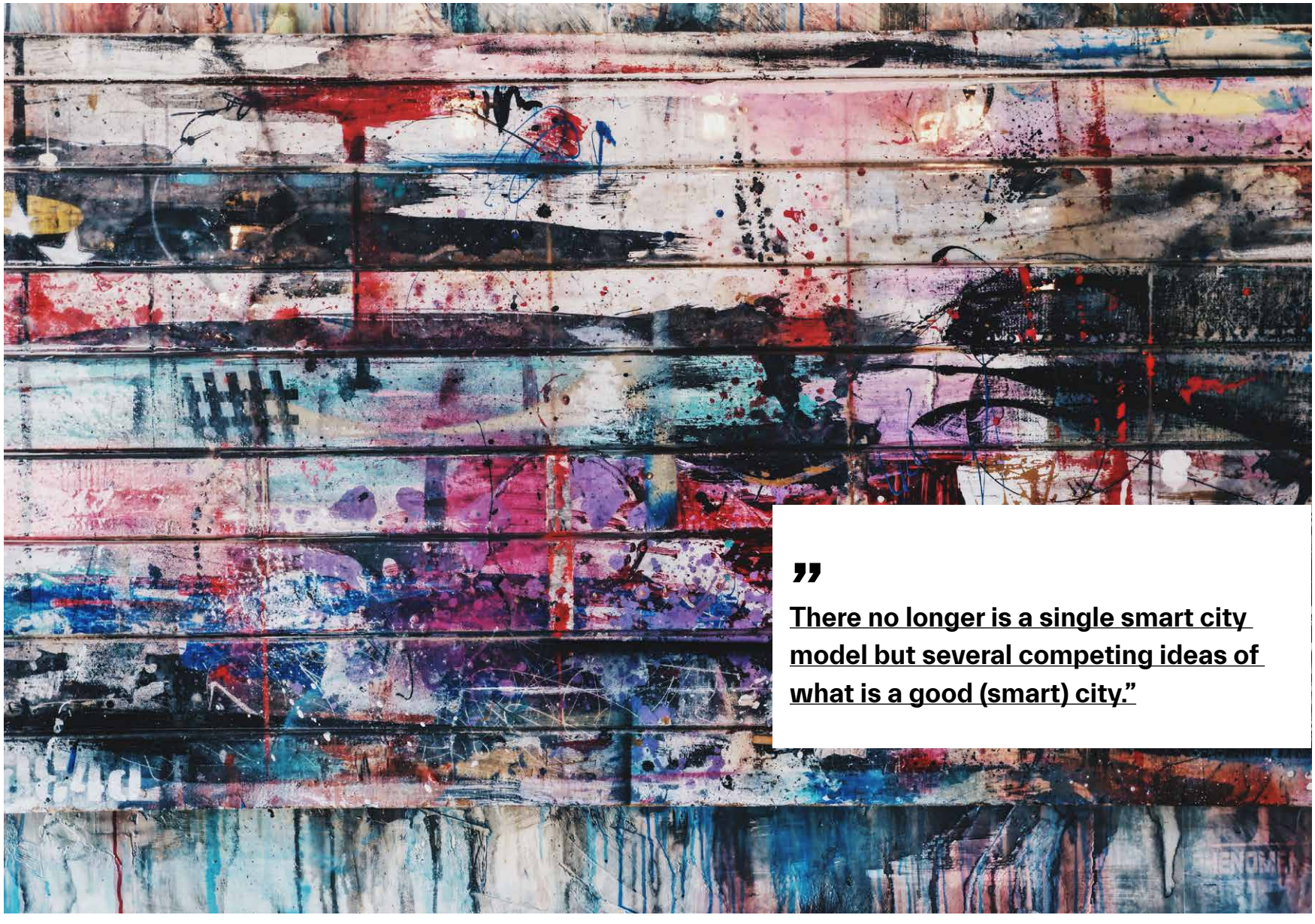
In city governance, there is an apparent move away from the passive ecosystem facilitation role to more active modes of governance. As a consequence, different and competing ideas and ideals are emerging. The main competitors to the way of governing presented in this report are the so-called Chinese authoritarian model where states and regions hold large powers, and the so-called Silicon Valley platform model where big technology companies take the responsibilities of the city. The People-first vision unites the powers of the city organisation and the urban dwellers in order to govern global issues such as digitalisation, climate change, and migration without giving away the democratic powers to, for example, the state or the private companies.

The People-first vision essentially introduces a new philosophy for the strategic management of cities based on the ideas of active citizenship and ecosystem leadership. In practice, the People-first vision enables cities to show direction and lead the ecosystems instead of just facilitating or orchestrating them. It gives cities a better view of the interactions of people, markets, and the public sector than the current public-private-(people) partnerships provide.

The People-first vision also allows city administrations to form alliances with other cities and regional or international organisations that go beyond just sharing best practices. Most importantly, it gives the grounds for city organisations to abandon the view that public services alone create wellbeing and begin to see the potential and assets of the whole urban ecosystem.

INTRODUCTION

The Smart City Development Is at a Crossroads



”

There no longer is a single smart city model but several competing ideas of what is a good (smart) city.”

The smart city development is at a crossroads

In this introductory chapter, the reader learns how smart city development has gone through distinct phases and how this development is now being disrupted. The two first phases of smart city development are radically different from the latest one, which reintroduces power and politics in the technology and innovation agenda. We also learn that digital technologies remain crucial as they may have solutions to some of the most burning issues of cities.

FIGURE 1. Recent headlines of smart city development.

The power phase of smart city development

For the past ten years, "smart city" has referred to the digitalisation of the urban sphere. Until recently, smart cities' overall aim has been to improve the data-driven management of their different functions, from traffic management to participation. In other words, smart cities seek to increase efficiency, primarily through optimising the operations of each function of the city (compartmental optimisation).

Smart city development can be divided into three distinct phases: the two first phases have been well documented (and thoroughly critiqued in academic literature),[1] but the third one is only now emerging. This new phase brings power and politics to the table, and it means there no longer is a single smart city model driving for efficiency but several competing ideas of what is a good smart city.

1. **The ICT-driven control (2008–2015) phase** (also called the technology and ICT-oriented approach) focuses on the efficiency of infrastructure and technology (e.g. energy, transportation, communication, waste, water) through ICT. In this phase, the smart city integrates and monitors all of its critical infrastructures, optimises its resources, plans its activities, and, in this way, maximises its services. It does this by optimising infrastructure but also by increasing collaboration among economic actors, providing more efficient services to citizens, and "supporting innovative business models across private and public sectors."[2]
2. **The bottom-up apps for consumers and citizens (2010–2017) phase** (also called the people-oriented approach) grew partly in reaction to the ICT-driven approach, but also as a byproduct of smartphones and the apps they were able to offer to people. This phase, however, describes the smart city as a way of enhancing the quality of life of individual citizens, both in terms of user satisfaction and participation.[3] These characteristics were each seen to drive the attractiveness, attachment, and, thus, the prosperity and competitiveness of the city.[4]
3. **The power (2017–) phase** is the third wave of smart city development. It has started to become visible in the last two years in high-level industry and think tank reports,[5] as well as through upsurges of civic activity and newspaper writings. A study of the reports reveals that while the third phase is already evolving quickly, it is not making the problems and aims of the first two phases obsolete but merely adding to the already complex nature of smart city development. The reports highlight that the new phase involves centralising power and shifting it away from city and national governments, a key distinction from previous phases of smart city development (for a more thorough analysis, see Annex 1).

The promise of digitalisation of cities is paramount

The promise of smart cities is still (and perhaps even more than ever) relevant. Despite the nonlinear and uneven development of the smart city approach, the promise of digital technologies is vast. Furthermore, there are only a few serious challengers (see Chapter 3) to the smart city as the de facto city development paradigm. **The promise of digital smart cities is unparalleled on three accounts: efficiency of the built environment, governing people, and facilitating collaboration.**

As digitalisation can change the way cities use infrastructure, it can produce excellent efficiency gains.[6,7] This capability is central to cities for two reasons above all. Firstly, as value creation in the digital age becomes ever more geographically concentrated,[8] it becomes central to value creation itself to find new efficiencies in the use of assets such as transportation systems or office capacity. The second primary motivation for getting more out of existing infrastructure and other urban assets is climate change. Cities already present a significant source of emissions: for example, 75% of all carbon dioxide comes from energy use in cities.[9]

City governments should also be very interested in their new abilities to govern and regulate through data and platforms. This new way of governing people is particularly intriguing for civil servants looking for ways to deliver democratic decisions in an age where the legitimacy and powers of democratic institutions are otherwise plummeting.[10]

Additionally, the promise of achieving synergies by facilitating collaboration[11] (both market and non-market) between citizens is hugely promising for cities. In areas with dense populations collaboration can be seen as the key factor or even the primary source of success of cities.

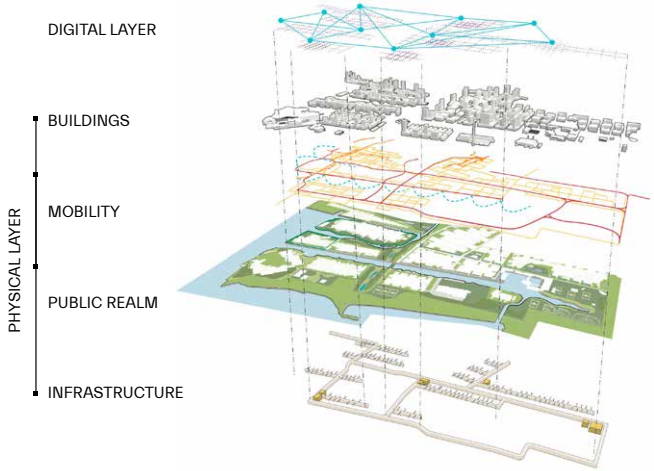
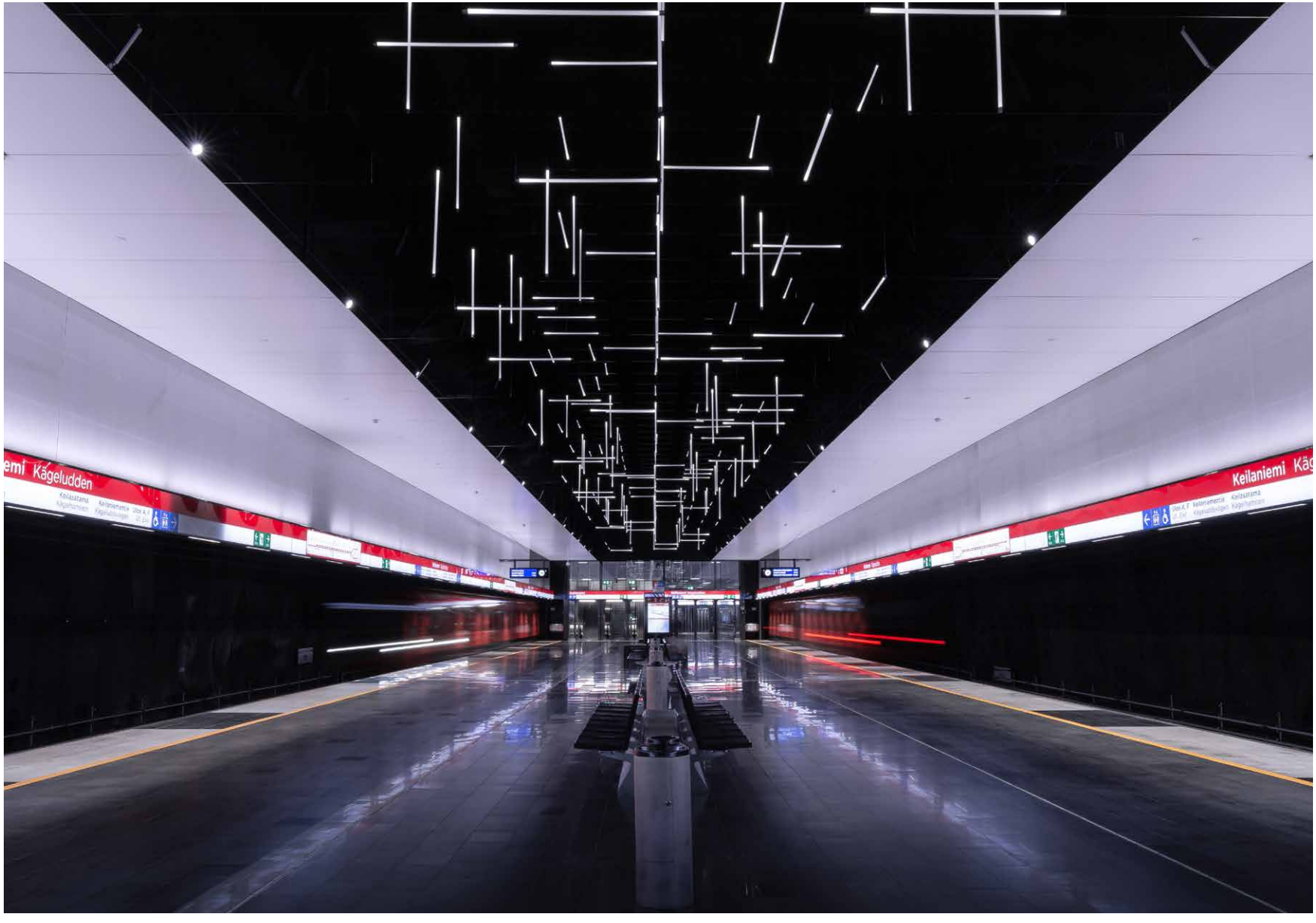


FIGURE 2. Digital skin being overlaid on physical layers of the city. Toronto Waterfront plan 2018.[12]

CHAPTER

1

In Search of the New Smart Cities from the Nordics and Barcelona


Kägeludden
Keilaniemi

Meet the smart cities that put people first

In this chapter, the reader learns how four Nordic cities have developed an alternative approach to digitalisation, setting them apart from generic smart city development. The case studies illustrate how the city organisation can have a more active role in urban ecosystems. Additionally, we study the City of Barcelona's approach in which a strong narrative links both a change in the city's overall strategy and its smart city programme.

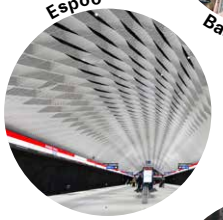
> **Cities have the capability of providing something for everybody, only because, and only when, they are created by everybody," wrote Jane Jacobs, the great American theorist, economist, and urbanist, in 1961.**[13]

In the 1960s, Jane Jacobs was among the first thinkers to associate urban creativity with the people: not the elite, the artists, the inventors, the industrialists, the mesenati, the entrepreneurs, or the city governments – but the people.

For Jacobs, the streets were the foundation of creativity. On the street, she argued, everyone has equal access, and, therefore, cities allow people from various backgrounds to continually interact and engage in defining what is normal and what is possible. Because of this, cities can create unlimited amounts of "new ways of doing things".[14]

This view of human creativity and flourishment is what the cities we studied represent. The cities of Barcelona, Espoo, Helsinki, Tampere, and Vantaa as well as


Barcelona


Espoo


Helsinki


Tampere

Vantaa

the Nordic Smart City Network show glimpses of the potential of an emerging city governance paradigm in the power phase of the smart city development. These European cities are among many that have been able to intuitively "get it right" despite differing societal systems.

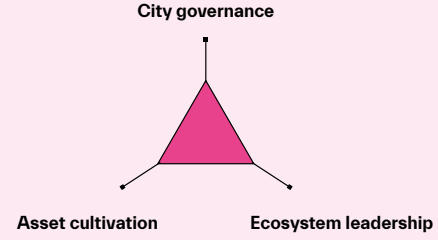
In the next pages, you will be able to read about the kind of experiments, programmes, and operations our case study cities have in place for their everyday actions. At the heart of all of these examples are, in one way or another, the ideas of active citizenship, people's voluntary action, and urban creative governance.

By empowering people and experimenting with representative democracy, these cities have each in their own way succeeded in taking new perspectives on the tensions brought forward by the promises of digitalisation. The cases highlight existing places, actions, and people that have enabled and furthered a shift towards prioritising people in the government, leadership, and asset management of the cities.

In the following pages, we study **initiatives where fresh thinking on how cities can benefit from digital technologies is present.** We do not simply study the smart city models of each city, but how the smart city thinking develops in action. Each case study is followed by lessons to be learned for smart city governance, ecosystem leadership and asset cultivation.

The three main questions of the study are:

1. How is the smart city agenda **governed** within the city?
2. How is the city practicing **leadership** in the smart city ecosystem?
3. How does the city cultivate the central **assets** of the smart city ecosystem?



Case Study 1:

City as a Service, Espoo

The City of Espoo provides services for and with the city community

The City of Espoo, Finland, has been promoting an approach that recognises the human and social capital of its inhabitants for more than a decade. At the core of Espoo's approach lies the idea of serving the needs of citizens in the best possible manner, which is one of the primary duties of municipalities in Finland.

What has been unique in Espoo's approach is that it believes the public services and solutions to citizen's challenges should be created collectively by the people and the whole city community. Here, the city is more a city community rather than a bureaucratic organisation. This viewpoint is a critical change in thinking which Espoo has been leading during the past years.

In 2010, the Espoo city management wanted to develop their understanding of competitiveness in the context of their city. Espoo's financing comes mainly from income taxation of citizens, which means that changes in employment, consumption and behaviour of citizens affect the finances of the city organisation. The city is also the home of many multinational companies, including the global telecommunications company Nokia and the lift manufacturer KONE. As both the taxation of work and perspectives of global companies are sensitive to changes in the global economy, Espoo is rather dependant on global markets.[15]

Espoo wanted to become less sensitive to changes in the global economy and started working to develop a new way of looking at competitiveness. The result of this work was the idea that the city's most important function is to enable and orchestrate the assets located in the city – be they public, human, or corporate. This result means that the role of the city is not solely to take care of the public realm but actually to become the enabler of different types of assets.

Already ten years ago, Espoo understood that it was only as powerful as its inhabitants and companies. Since then, Espoo has been actively working to create new ways of thinking, culture, activities, and innovations based on the idea that the role of the public administration is to empower citizens and companies to tackle issues instead of trying to do everything by itself.

The new understanding of the city organisation's role and purpose is most clearly visible in the City as a Service (CaaS) model,[16] which was first created in Espoo in 2012. After some

years of developing the model, CaaS was included in the strategy of Espoo in 2017.

CaaS is an approach that shifts the role of the city organisation from being an operator and a service provider to a close partner of citizens, communities, companies, and universities. This way, different forms of capital (industrial, human, social, and ecological) become available for use in the city. Not only does the city organisation produce services and seek solutions, but the whole urban community takes responsibility instead.

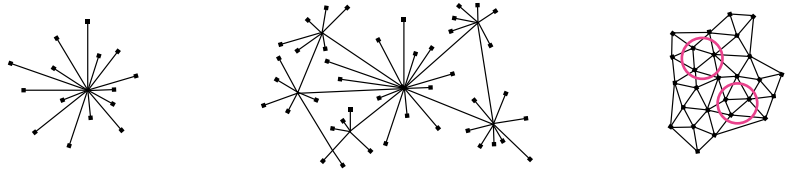
Applying the CaaS model provides a new approach to city leadership and strategic management. In the CaaS model, the public administration orchestrates the actions of the entire city as a community in distributed networks. This is a fundamentally different approach compared to only focusing on providing public services guaranteed by law in a centralised industrial city.

Traditionally, city leadership and management are a line organisation. In a line organisation, each function typically has its authority delegated to the city council which mainly supports development work from the city organisation's perspective. The city council owns and manages premises designed for one purpose, such as primary and upper education, social services, and sports venues.

In the CaaS model, the city is understood as a community made up of actors around the city organisation (e.g. companies, universities, civil society). The operations of the city organisation are focused on providing the community with the right services at the right time. However, the services can be produced by actors other than the city organisation such as citizens, companies, and other organisations. New value is co-created in these interaction networks where the different actors operate together in providing e.g. care, urban culture, information sharing, or innovation.

In other words, the traditional city leadership and manage-

City as a Service model is based on Distributed Networks and Service Dominant Logic



Centralized (A) **Decentralized** (B) **Distributed** (C)

In service dominant logic the value is created with the customer

- Customer as a stakeholder
- Co-creation
- Modularity
- Innovation platforms
- Data
- New rules and contracts
- Shared capabilities

FIGURE 3. City as a Service operating model based on distributed networks and service dominant logic.[17]

ment structure leave many urban assets underdeveloped and underutilised. The CaaS model adds to the traditional approach of public asset management the idea that the city organisation can also orchestrate the use of other assets, such as private companies, civil society organisations, and citizens. This way, the city community can benefit from all the urban assets it has and manage distribution, services, and development better than with the traditional model.

Espoo has many experiments and pilots in place to test the CaaS concept in practice. One example of CaaS being applied in the context of education and learning is the School as a Service experiment[18,19]which started in Espoo in 2016.

The School as a Service model revolutionises the way we understand school and teaching: school does not refer to a particular school building, and teaching does not require a specific teacher.

In the School as a Service model, schooling and educational services can be provided together with other organisations in the city community – it creates a model for networked teaching. Equally, the school's resources, such as their facilities, may be available for various uses in the city community when the students are not using them.

As part of one of the School as a Service experiments in Espoo, the Haukilahti general upper secondary school moved to the Aalto University campus, and now the services and resourc-

FIGURE 4. School as a Service students at Aalto University campus in Otaniemi.[20]

es of the area are also used to run the upper secondary school. For example, students use the Department of Architecture facilities for art classes and the Aalto University laboratories for physics and chemistry. Physical education classes take place at a local sports hall, and the premises of Varma, a nearby employment pension insurance company, are used for serving lunch.

The School as a Service experiment demonstrates that education can happen by using various types of assets from the city community.

Espoo's CaaS model shows that the way Espoo is enabling and orchestrating the operations of the whole city community gives the city more resources and assets. Rather than just seeing itself as public administration implementing the national laws, Espoo prioritises providing services that meet the people's needs – with a wide range of means and tools. CaaS is not about maintaining a single school building or a sports facility but making sure that the people get the right services at the right time – irrespective of who produces them.

Case: City as a Service

↓ Lessons learned		
Lesson for governance of the smart city agenda within the city	**Lesson from how the city is practicing leadership in the smart city ecosystem**	**Lesson in how the city cultivates the central assets of the smart city ecosystem**
Espoo's City as a Service is a spearhead for moving the city from production logic to service logic and capitalising on the resources and designed services that are spread throughout the community, thus combatting silos and taking advantage of networks.	In Espoo's City as a Service model, the city is enabling and orchestrating the operations of the whole city community (not just publicly owned assets) and, thus, releases more resources and assets for use by public services, private companies, and the people.	The City as a Service model complements the traditional approach to public asset management with the idea that the city organisation can also orchestrate the use of other assets, such as private companies, civil society organisations, and people. From this perspective, the city's role is to cultivate and renew these assets: human, social, industrial, and environmental.

Case Study 2:

MyData, Helsinki

The City of Helsinki defines data rights as the foundation for serving citizens

The City of Helsinki wants to become the most functional city in the world by using digitalisation effectively.[21] To achieve this position, the city has to make full use of its data: this requires agreeing on rules for the collection, use, and sharing of data with the whole city ecosystem. Helsinki is both the capital and the largest city of Finland, and, for many years, it has been a pioneer in developing and using digital tools as well as using and offering data for the benefit of the people.

One key component in this strategy is the Helsinki profile. The Helsinki profile is a personal customer profile that each citizen has and can use to manage e.g. their electronic identifications, permissions, and communications in many services provided by the city. The Helsinki profile is shared across the city organisation's functions, so the citizen does not have to separately provide the information to each sector but can supervise the use of data and sharing of information in a centralised manner.

The Helsinki profile is based on MyData principles (see figure 5).[22] MyData is an infrastructure-level approach for ensuring data interoperability and portability independent of sectors and based on individual consent.

↓ MyData principles
1. **Human-centric control of personal data**
2. **Individual as the point of integration**
3. **Individual empowerment**
4. **Portability: Access and re-use**
5. **Transparency and accountability**
6. **Interoperability**

FIGURE 5. MyData principles.[23]

The MyData approach is developed by MyData Global which is an international non-profit organisation with 90 organisation members and 600 individual members all over the world. MyData provides both an alternative vision and guiding technical principles for the next generation of human-centric data management. The City of Helsinki is one of the founding members of MyData Global.

The goal of MyData is to empower individuals to use personal data to their own ends and to share it securely as they please. This goal is an explicitly human-centric approach to data management. The MyData approach is built on the idea of individuals as empowered actors rather than passive targets.

The MyData approach claims that current methods for handling data need to change in three areas: first is a shift from formal to actionable rights which means real transparency and informed consent instead of difficult-to-enforce and obscure formal rights. Efficient and straightforward data rights should be so-called one-click rights in people's and organisations' everyday interactions.

Secondly, the shift from data protection to data empowerment: MyData aims to change standard personal data protection practices towards both protecting and empowering individuals to use their data. This could mean, for instance, simplifying administrative standards or personalised AI assistants.

Thirdly, MyData wants to move from closed to open ecosystems to enable the free flow of data, in contrast to just a few platforms collecting and processing large masses of personal data. The goal is to have a balanced, fair, and diverse digital economy.

Finland is already internationally well-known for having one of the best public registries which has required long-term vision from lawmakers and registry implementers. More recently, sophisticated sensor networks which collect data as well as policies for sharing these resources have spawned new kinds of data ecosystems.

MyData Model

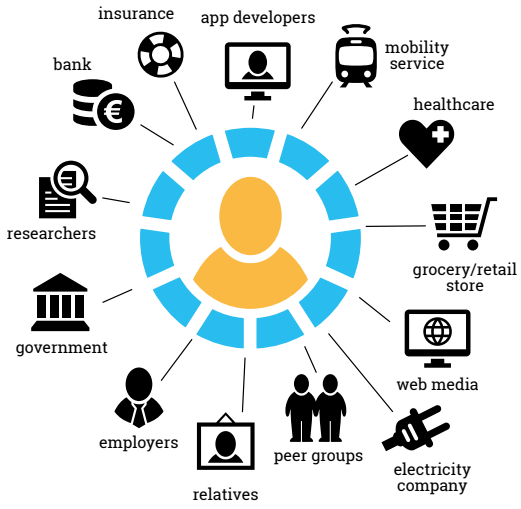


FIGURE 6. MyData Model with the citizen at the centre.[24]

The MyData approach is currently the most sophisticated example of a new kind of data ecosystem. MyData can be understood as a transformation to a new data paradigm where data is no longer considered as public property but as a universal one. This idea is the first step towards applying the principle of universalism to digital assets.[25]

The City of Helsinki has been an active and internationally well-connected member of the community building the next generation model for digitalisation and data management. In 2017, the City of Helsinki committed to following the MyData principles.[26] Even before this decision, since 2013, Helsinki has been creating an approach and rules for allowing personal data to be used to provide better services in the city, for instance, by commissioning a report on how to utilise the MyData model effectively in public service development.[27]

Helsinki has also been consciously investing in open data development for more than a decade. The best example of this work is the Helsinki Region Infoshare (HRI)[28] service. The goal of HRI is to make regional information quickly and easily accessible for all through an open data web service. The data may be used for free by anyone: citizens, businesses, universities, research institutions, or municipal administrations.

The shift from perceiving people solely as consumers to seeing them as co-creators of data has produced new use cases for personal and public data. Open and accessible data has given Helsinki new possibilities for serving its citizens in the form of more personalised services. For example, parents with preschool-aged children in Helsinki are automatically assigned placement in a preschool based on the age and home address of the children. This information is communicated to the parents by an automatic SMS, where the parents can either accept or reject the suggestion.

In addition to offering more personalised services, Helsinki has been experimenting with a service which enables people to roam across cities, since the data is interoperable and shareable across cities in a harmonised way. For example, a student living in Turku is able to visit Helsinki and enjoy student discounts when using Helsinki's public transportation.

Roaming enables more inclusive systems not only for permanent citizens but also for visitors. For individuals, it enables wider mobility and gives more freedom of choice but also better insight into one's own behaviour through self-tracking. Roaming empowers people as it creates a more balanced interaction between an individual and an organisation in terms of data transfer as well as new ways to interact between companies and the public sector.

All of these developments form part of the Helsinki profile, which in April 2020 has its first version in use in some personal services. Helsinki has also started to build the operator capacities for the system, and the aim is to have them in place in the first months of 2021.

The Helsinki profile is built on the foundations of GDPR legislation and, thus, has the security and privacy of personal data at its core. It also relies on the principle of universalism in

declaring that digital assets and services should be accessible to everyone. The Helsinki profile benefits the citizen through easy access and the power to determine the use of their own personal data. At the same time, it simplifies the operations of the city organisation by centralising the data of each citizen.

The case of Helsinki shows that by increasing the sharing and reuse of data, cities can offer their citizens, professionals, tourists, and students better, more personalised and universal services. Pushing the boundaries of free and accessible assets brings the whole city ecosystem opportunities to create better services, businesses, and collaboration. Having a shared vision and rules for data management and simultaneously opening city-wide datasets and APIs is an interesting first step towards common basic assets.

Case: MyData

↓ Lessons learned		
Lesson for governance of the smart city agenda within the city	**Lesson from how the city is practicing leadership in the smart city ecosystem**	**Lesson in how the city cultivates the central assets of smart city ecosystem**
Helsinki has brought the smart city agenda (data in particular) to the Mayor's office and made extensive use of the MyData movement and knowledge networks. The city is building the Helsinki profile to allow each citizen to control their data in a centralised manner across all city services.	The City of Helsinki is taking an active role in defining the rules for collecting, sharing and using data, from the point of view of the people. MyData is an infrastructure-level approach for ensuring data interoperability and portability independent of sectors and based on individual consent.	MyData can be understood as a transformation to a new data paradigm where data is no longer considered as public property but as a universal one. Data is co-created by all of the actors of the city ecosystem instead of just the public sector. This shift allows more value to be created as more people and institutions have consent to utilise the data.

Case Study 3:

Collective Engagement Model, Tampere

The City of Tampere goes beyond participation

The city of Tampere in Finland is an excellent case to learn from when talking about how to understand people's participation and engagement in cities. Tampere's operations show that it is questioning the assumption that the city should only refer to the city organisation – actually, the city is and should be equal to its inhabitants.

During the 2010s, Tampere brought its model for collective engagement directly to the core of its strategy.[29] Supporting collective engagement and people's participation is therefore one of the most important parts of the strategic management of the city. It directs the action of the city organisation in the same way as public service production or support for private businesses.

In 2018–2019, Tampere made an evaluation of the impact of its collective engagement model. According to the results, the areas requiring most attention are the inclusivity of participation, impact of participation, and support for participation.

Inclusivity means that it should not only be the most active people that participate but the so-called quiet groups too. Tampere believes that there should be new, easy, and quick opportunities for participation – this is to understand participation itself in a new way. Improving digital participation opportunities and information sharing offer potential paths toward this goal.

Tampere has noticed that the impact of participation is important: people are not interested in participating in something where they are not sure that it will have an effect. Ostensible participation is not interesting. For this reason, it is essential to communicate the meaning and reason for people's participation.

People's voluntary action or engagement does not come from nothing. Voluntary action needs to be enabled by and requires concrete support from the city organisation. Things mentioned in the Tampere model evaluation include coordinating and communications support as well as offering spaces for people's action. These approaches are designed to allow city activism to flourish.

On the grounds of this evaluation, Tampere has defined three principles and three goals for collective engagement in the city. The accomplishment of these principles and goals is monitored by the city government at least every other year. There is a process for updating the goals every four years, in sync with updating the city strategy.

Moreover, the collective engagement model is also an overarching category for decision-making in every city committee. This means that all the decisions and operations in the different sectors of the city are based on the principles and goals defined for collective engagement.

The principles for collective engagement in Tampere are: 1) sharing information and active dialogue with the people; 2) developing the city and services together with citizens; and 3) supporting communities and citizen action (see figure 7). These three principles can be understood as three areas of participation: information participation, participation in planning and decision-making, and participation in action.

Based on these three principles, Tampere has created three concrete goals that also serve as the goals for the city strategy. The aim is that community action and participation has risen, citizen experience is better, and innovation capabilities in the area have strengthened (see figure 7). These goals related to collective engagement directly guide the action and operations of the city organisation.

This pioneering work in Tampere demonstrates that it is possible to value participation and engagement as an end in itself and create principles and goals that direct action based on supporting collective engagement and the voluntary action of people.

FIGURE 7. Tampere Collective Engagement Model 2019: principles and goals.[30]

Tampere has successfully built a collective engagement model through a joint, collaborative process that includes residents, NGOs and companies within the area. The model includes principles and goals for participation in the city strategy, includes focus areas for development and indicators for evaluation, and divides responsibilities between the different entities of the city organisation. This is one way to understand what a people-first city could mean.

One interesting example of how the collective engagement model works in Tampere is the crowdfunding experiment in 2018–2019. Tampere was the first city in Finland to launch an experiment to support projects initiated by citizens and communities by combining crowdfunding with city funding.

The city has defined particular criteria for potential projects such as improving collective engagement or strengthening the capabilities of inhabitants. The city offers support in planning the crowdfunding campaigns, communications, and the digital tools required for implementation. For those campaigns that obtain 60% of their funding goal, the city completes the funding by contributing the remaining 40%.

Altogether 14 campaigns applied for the experiment and, in the end, 10 of them were realised. Most of the initiatives were about organising events, arts workshops, the shared use of spaces, and supporting children or the elderly. Apart from the city funding, a total of 235 private citizens and different kinds of organisations funded the projects.

As the experiment proved to be successful, Tampere has initiated a continuation of the experiment for 2020–2021. The idea is to combine the benefits of participatory budgeting and crowdfunding to form a new hybrid funding model. This should particularly serve the fourth sector and voluntary action of people which has, until now, often been excluded from traditional city funding schemes.

Tampere wants to find ways to include residents that are not currently active, and offer people a variety of ways to participate that are tailored to their needs. This shows that Tampere is proactively finding ways to invest in people that would otherwise be left out – participation is not real or impactful if it only concerns the most active individuals. People's capabilities need to be built inclusively, and this requires investing in the most vulnerable and least engaged too.

The crowdfunding experiment is not the only pilot project going on in Tampere. The new approach to collective engagement and participation has also brought about various other initiatives and projects, including participatory budgeting and digital participation.[31]

The most important lesson to learn from the example of Tampere is that the city is already quite good at participatory processes, where the needs, goals, and ways of participation have been defined by the city organisation itself. But with the new collective engagement model, Tampere takes a leap forward as it is not anymore about participation only but instead about people's voluntary action in the city.

By formalising and institutionalising the collective engagement model in the city strategy, city government and city committees, Tampere has prioritised and normalised citizen-led action. This has become one of the core operations and raison d'être of the city. The example of Tampere reminds us that the city is not only about buildings, processes, and laws but firstly about the people who live in it.

Case: Collective Engagement Model

↓ Lessons learned		
Lesson for governance of the smart city agenda within the city	**Lesson from how the city is practicing leadership in the smart city ecosystem**	**Lesson in how the city cultivates the central assets of smart city ecosystem**
Tampere has heightened the importance of the smart city agenda on the level of city governance by combining it with the digitalisation of public services, the support of the business ecosystem, and the sustainability programmes of the city.	Tampere has brought its model for collective engagement directly to its strategy. Collective engagement is hence one of the three most important parts of strategic management of the city. It directs the action of the city organisation in the same way as public service production or support for private businesses.	Tampere shows that it is possible to value participation and engagement as an end in itself. Additionally, combining the economic, public service, and sustainability interests in the smart city agenda allows value creation across sectors.

Case Study 4:

Vantaa Together

The City of Vantaa provides the grounds for a vibrant city for residents

Vantaa is the fourth most populated city in Finland and an essential part of the Helsinki metropolitan area. Vantaa is known to be a good place to live with its family-friendly residential areas, well-functioning public transportation and international airport as well as growing business opportunities.

During the 2010s, the City of Vantaa has created a development paradigm called Vantaa Together[32]: as is apparent from the name, the idea is to develop the city together with its residents, businesses, and educational institutions, the common goal of all of the actions being to cultivate the vibrant city. The City of Vantaa is still developing the model and trying to find an optimal although constantly changing way to develop the city together.

The Vantaa Together model is based on the principles of openness and cooperation. Openness means that Vantaa is openly "showing its cards" and, as a result, building trust as the grounds of cooperation with businesses, educational institutions, and the people. Cooperation means that everyone can strive to achieve the shared goals through collaboration between the different actors of the city.

In the spirit of openness and cooperation, Vantaa organises common forums, discussions, and collaboration with the companies and residents concerning urban development projects, such as zoning plans, needs for public transportation, or the accessibility of services. The Vantaa Together model values cooperation as a goal itself: it is not only about reaching a conclusion as efficiently as possible but, rather, making sure the decisions are acceptable to everyone.

The Vantaa Together model is presented in figure 8. The most important thing is the common goal of a vibrant city of Vantaa in the middle. The goal can be achieved primarily with the activities and cooperation of the residents and companies of the city. The branches of the city organisation form the foundation to the actions of the residents and companies.

In practice, this means that the functioning of the city is coordinated and planned within the city organisation, but the goals and actions are co-created together with the other actors in the city. Vantaa believes the city organisation is a means to

ensure the good life of the residents in a vibrant city.

Vantaa has two core elements in understanding how the city organisation can be the means to create a vibrant city. Firstly, educational institutions are important partners of Vantaa in creating services for and with the people. The city organisation receives direct feedback from the residents to validate the plans for the future, but educational institutions provide the skills and capabilities for residents to be able to discuss and assess these plans.

Secondly, Vantaa takes the benefits from digitalisation and data for service provision: for example, studying the data of the city, it seems that wellbeing is one of the fastest growing interests of residents, which has made Vantaa consider broadening its services in this sector. Vantaa is also offering digital service sector companies the possibility to test their products and services in the real world directly with customers to support their product development.

The most interesting aspect of the Vantaa Together model is that the cooperation between different parties and networks is designed, from the start, to be long-lasting. The city is not seeking for instant wins but, instead, has a long-term approach.

Vantaa believes we talk too much about concrete operations and actions instead of having a shared understanding of the vision and goals for action. When the different actors in the city can agree on the vision and goals, it is much easier to decide who does what and share responsibilities. This progressive thinking shows that the City of Vantaa is a forerunner in

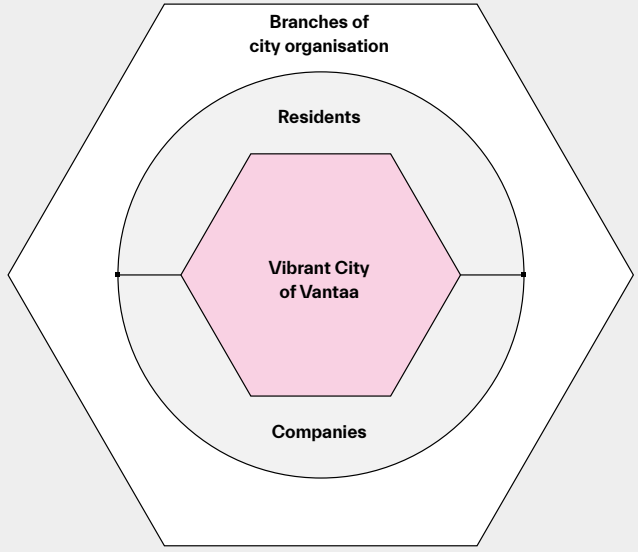


FIGURE 8. Vantaa Together model.[33]

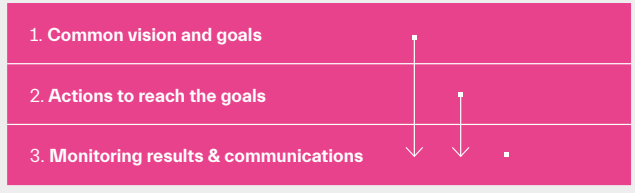


FIGURE 9. Outline of City of Vantaa futures thinking model.[34]

applying futures thinking into governing the city.

There are many examples of how these models of Vantaa Together and futures thinking are currently applied in different projects and experiments in Vantaa – two of them are briefly presented below.

The Myyrmäki forum[35] is an informal network of Myyrmäki neighbourhood local companies, civil society associations, city activists and the City of Vantaa. The idea is to together find solutions to the challenges of the livelihood of the area. Now the Myyrmäki neighbourhood is being developed with economic policy objectives with the local companies, residents and City of Vantaa.

The Myyrmäki forum had its first gathering in 2016, and it has since been actively working especially to find ways to support the businesses in the neighbourhood. In April 2020, the fifth gathering of the Myyrmäki forum is organised with the theme "2000 new jobs to Myyrmäki".

Another example of applying the Vantaa Together approach are the activities of the registered association called Lively Tikkurila[36] founded together by local companies and the City of Vantaa. The Tikkurila neighbourhood is located by the railway and has good connections both to the centre of Helsinki and the international airport. It is one of the fastest growing mobility land business hubs in Finland.

The Lively Tikkurila association supports the development and growth of the area but has raised a concern about most of the area being covered with worksites for construction and infrastructure projects. The association wants to make sure that the area is developed from the perspective of the businesses and services, to serve their and customers' needs also during the construction. The association is a way to work together with the businesses, construction companies and the city to ensure the businesses' needs are taken into account.

FIGURE 10. Art work in a passage in the Myyrmäki area.[37]

Both the Myyrmäki forum and the Lively Tikkurila association are examples of how everyday collaboration between the residents, companies, and the city organisation are promoted with the Vantaa Together model. Many important interactions happen also on an informal level, and the networks and ways of cooperation are built not only for the next 3–6 months but for the longer term.

The Vantaa Together and futures thinking models show how much effect the way the city organisation thinks of itself has on the activities of residents and companies. When Vantaa portrays itself only as the actor providing the context for the actions of the residents and companies and aims at developing collaboration and networks in the long-term, it gives more space for the voluntary action of residents and companies. This makes an excellent example of the people-first vision in action.

Case: Vantaa Together

↓ Lessons learned		
Lesson for governance of the smart city agenda within the city	**Lesson from how the city is practicing leadership in the smart city ecosystem**	**Lesson in how the city cultivates the central assets of smart city ecosystem**
Even though Vantaa is utilising digitalisation and data to develop city services, it has no centralised smart city agenda. This enables taking advantage of the knowledge networks within the city based on Nordic strengths such as trust and openness.	Vantaa has defined its role as the visionary leader of the city ecosystem providing the grounds for action for the residents and companies. The outspoken values show the direction but leave a big space for the other actors to maneuver. The long-term futures thinking is apparent from the idea that the common vision is more important that individual actions.	The core pillars of Vantaa Together model are openness and cooperation. By being open and building trust, Vantaa makes sure everyone can strive to achieve the shared goals through collaboration between the different actors of the city. The value of informal cooperation is also recognised.

Case Study 5:

Barcelona Digital City

The City of Barcelona puts technology at the service of people

The Catalan city of Barcelona in Spain is an example of a city that has consciously conceptualised what a people-first vision to digitalisation could mean – using these exact words.

In Barcelona, there has been a change in how the city sees itself benefiting from digital technologies since the 2015 municipal elections, after which the left-wing politician Ada Colau was elected as Mayor of Barcelona.[38] The Barcelona approach is still in its infancy, and the results are only starting to show. However, the new approach has allowed Barcelona to initiate several strategic institutional experiments during these years of intense development of the digital economy.

At the start, Barcelona had the typical problems indicative of a lack of digital governance: endless silos, the benefits of digitalisation going to big technology companies through bad contracts and technology lock-ins, unwanted market disruptions in housing and transportation, and unfair competition within the local tech ecosystem.

By 2015, it had become clear to the new leadership of the city that large investments in IT and smart city initiatives had not led to a city benefitting from digitalisation: instead, Airbnb was turning residential areas into tourist accommodation,[39] and the city was not receiving data from the services it was procuring.[40]

Moreover, all technology and data were siloed, difficult procurement and technology lock-ins forced the city to work with only the big technology providers, and the local developed technology ecosystem had limited access.[41] These problems are by no means atypical demonstrations of the tensions that difficulties in governing issues, such as digitalisation, democratic decline, or climate change, can create.

To solve these issues, Barcelona started examining another approach to governing the global moving target of digitalisation. The city changed the focus in governing digitalisation to people, thus giving it a better mandate and more tools by tapping into the unique resources globally in, for example, technology, law, economics, funding, and policy. Digitalisation was no more about adopting specific technologies but putting technology at the service of people.

The most important consequence of Barcelona's approach is that it brought attention to the debate over smart cities globally. It appears that instead of linear development, different smart city models with different ideologies and views of people are now emerging. Barcelona's Digital City approach is one of them.

There are various reasons that can explain why the Barcelona Digital City Plan has been already somewhat successful. One of them is that, in the urban age, city mandate is not given only through representative democracy and participation but through allowing citizens to engage more directly with the solutions to the emerging tensions of life in the city.

By emancipating citizens to take digitalisation in their own hands, Barcelona is hoping to not only add new resources to taking advantage of digitalisation but to also allow people to obtain those benefits directly without the mediation of either the state or the market.

The change in course happened by extending the previous two-pillar digital strategy of Barcelona[42] with a third pillar: citizen empowerment (see figure 11). This shift brought about a change in the way the digital operations were led and key performance indicators were set for empowering people alongside public service provision and developing the commercial innovation ecosystem.

In other words, Barcelona introduced a third core function to city governance. Alongside service provision and economic competitiveness, the equally important core function is to empower people into taking autonomous action which is not directly subordinate to the city's own objectives and services or directly benefiting the local businesses through participation in production or consumption of goods and services.

This change in strategy allowed Barcelona to unleash a number of strategic experiments that the city hoped would solve some of the tensions identified in the digital economy during the 2010s. It is still early to say whether Barcelona succeeds in overcomíng contemporary challenges of digitalisation and utilising digital tools more functionally as a part of the city's strategic ventures, such as urban planning, participation, and procurement[43].

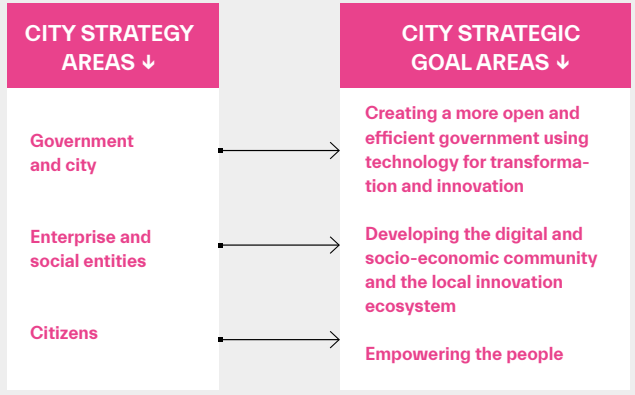


FIGURE 11. Barcelona Digital City Plan adds citizen empowerment on the smart city agenda.[44]

Nevertheless, Barcelona's example of putting people first reveals that urban governance is, in the end, about power. The mandate of the city of Barcelona has broadened not by forcing participatory processes but by emancipating citizens to create their own visions, goals, and processes in the field of digitalisation. At best, the same methods could be applied to other issues and sectors as well.

Case: Barcelona Digital City

↓ Lessons learned		
Lesson for governance of the smart city agenda within the city	**Lesson from how the city is practicing leadership in the smart city ecosystem**	**Lesson in how the city cultivates the central assets of smart city ecosystem**
Barcelona changed the way it governs digitalisation, giving it a higher status in city governance (between the political and operational levels), thus giving it a better mandate and more tools by tapping into the unique resources available globally in, for example, technology, law, economics, funding, and policy.	Barcelona Digital City is a vision-led approach where the city has developed tools most importantly for procurement, data management, participation, and transnational city collaboration to strengthen its mandate to deliver the vision.	Barcelona introduced a third core function to city governance. Alongside service provision and economic competitiveness, the equally important core function is to empower people into taking autonomous action. People's autonomous action is not directly subordinate to the city's own objectives and services or directly benefiting the local businesses through participation in production or consumption of goods and services.

Case Study 6:

Nordic Smart City Network

City network taking a leap from learning to doing

The Nordic Smart City Network[45] is a collaboration initiative of five Nordic countries and 20 Nordic cities that has been running since 2018. The goal of the network is to explore the Nordic way to create livable and sustainable cities. The current members of the network are the cities of Aarhus, Copenhagen, Vejle, Lyngby, Syddjurs, Bergen, Trondheim, Oslo, Stavanger, Tromsø, Kristiansand, Reykjavik, Helsinki, Tampere, Oulu, Espoo, Vantaa, Turku, Stockholm, and Malmö – representing approximately 5.3 million people.

What sets the Nordic Smart City Network apart from other Transnational Municipal Networks (TMNs) is its ability to invest and initiate projects that run in multiple cities at the same time. In other words, it goes beyond the TMNs that typically focus on sharing best practices and lobbying national and supranational agencies.

The theory of change behind Nordic smart cities is more pragmatic: it focuses on doing things together (thus also spreading best practices and impacting policy). The Nordic Smart City Network is explicit about shared values, such as openness and the active role of residents. This makes all the cities present in the network active participants and the level of engagement high.

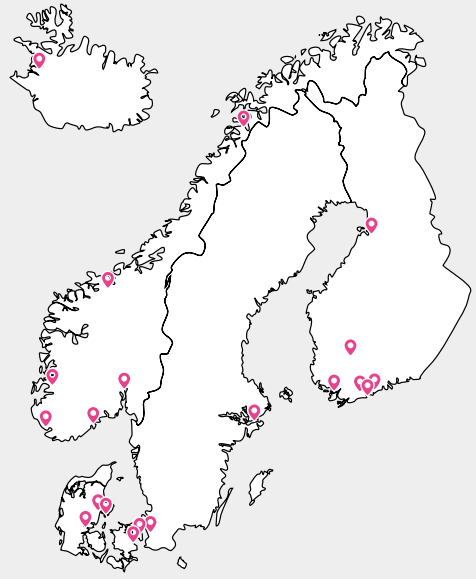


FIGURE 12. Member cities of the Nordic Smart City Network.[46]

What can we learn from the case studies?

Although the Nordic cities and Barcelona do not share a similar institutional base, nor are they similar in terms of how trust is created, there are three similarities to be found in the cases (for a more thorough analysis see Annex 4).

Governance of the smart city agenda within the city

- **Problem:** According to the cases, planning and execution occurring in silos, difficulties in recruitment, and poor access to knowledge networks were typical problems arising from the governance of smart cities.
- **Lesson:** The smart city agenda is promoted and aligned with the city's own strategic priorities and thus governed, not as a technical issue, but as a strategic core competence of the city. Additionally, human centricity (in service design) is used to combat silos and lock-ins.

FIGURE 13. Dimensions of the analysis.

Leadership of the smart city ecosystem

- **Problem:** According to the cases, typical problems in leading the smart city ecosystem were fragmented policies, lack of alignment, and low tolerance to failure in the public sector.
- **Lesson:** In all of the cases, the city's role is to provide a long-term vision that helps lead the smart city ecosystem, gives it direction, and helps the city gain desired outcomes.

Cultivation of central assets of smart city ecosystem

- **Problem:** According to the cases, the typical problem was the primary focus on updating existing policies and services instead of cultivating new "digital assets".
- **Lesson:** In all of the cases, the city recognises that public goods are produced differently within different sectors (civic, public, private) and in collaboration between them.

New smart cities are unbounded, visionary, and regenerative

The cities studied in this chapter have been chosen for study due to the intuition that something new is happening around the governance of the smart city agenda in them. We believe that the initiatives studied here present an alternative to the large corporation and state-run models without sacrificing the innovative capacities of digital companies nor losing the active role city halls play in defining the smart city agenda.

Reviewing the glimpses of the new smart city narrative presented above, we start to see how these existing operations, experiments and visions can be understood as the core elements of the new smart cities in the current power phase of smart city development.

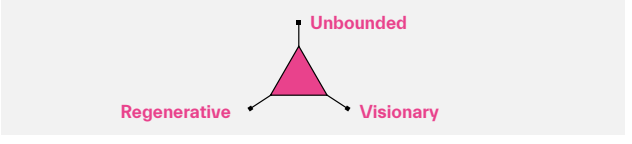


FIGURE 14. Core elements of the new smart cities.

Governance of the new smart cities

- **Unbounded** smart cities create new administrative capabilities by becoming integral parts of broad stakeholder networks, and they are able to align cross-sectoral activities towards desirable societal transformations.

Leadership of the new smart cities

- **Vision-driven** smart cities improve strategic steering capabilities and increase legitimacy by providing a direction for the smart city agenda.

Cultivation of central assets of the new smart cities

- **Regenerative** smart cities increase the resolution of value creation by fostering industrial, human, social, and environmental assets as integral parts of the ecosystem.

CHAPTER

2

The Nordic Smart City Narrative

Why go to Silicon Valley when you can go to Moomin Valley?*

A new narrative for people-centered smart cities is emerging. In this chapter, the reader learns what the characteristics of Nordic smart cities are, what makes them unique, and how cities worldwide can develop those characteristics.

FIGURE 15. Illustrations of Silicon Valley and the Moomin Valley.

”

Seeing a smart city as a 'model' is a technocratic point of view.”

The broadness of different smart city models (see infobox 1) results in unclarity of the smart city concept. In fact, it should be asked whether seeing smart city as a model is a fundamentally technocratic project, and whether we should instead be focusing on what the qualities of good governance are for digital innovation within cities. In other words, should we be focusing on the narrative of smart cities, instead of complex models depicting the different parts of the smart city? In the following pages, we will look at the Nordic smart cities studied in the chapter not as models but as a new narrative for smart cities.

* A Japanese business leader explaining why Japanese smart cities are looking into the Nordics for a third way between China and the US in developing digital technologies for cities.

From making models to telling (Nordic) stories

Even though most cities of the world claim to put people at the centre, the cities highlighted in the case studies take a fresh approach to doing this. The four Nordic cities, Espoo, Helsinki, Tampere, and Vantaa, demonstrate an exciting way to govern digitalisation – yielding fruit:

- The City of Espoo is a leader in understanding the city as a community. This understanding gives the city more resources, a better mandate and new tools. Rather than merely seeing itself as a public administration implementing the national laws, taking a people-first approach means managing the city and providing services that meet its inhabitants' needs.
- The City of Helsinki, on the other hand, has managed to increase the sharing and reusing of data. With this successful move, the city can offer citizens, workers, tourists, and students better, more personalised yet universal services.
- The City of Tampere has prioritised and normalised citizen-led action by formalising and institutionalising the collective engagement model in the city strategy, city government, and city committees.
- The City of Vantaa is building the city with a visionary and future-oriented approach together with the residents and companies. It is able to take advantage of the broad knowledge networks and informal cooperation within the city.

We argue the success of these cities in governance of digitalisation is possible through not so much by copying the Nordic smart city model (or any smart city model, in fact) but by constructing a new narrative in how cities can lead in the digital, global, and urban age.

Nordic countries →	**Population**	27,359,000 million
	GDP(PPP)	
	• Total	$1.6 trillion
	• Per capita	$58,000

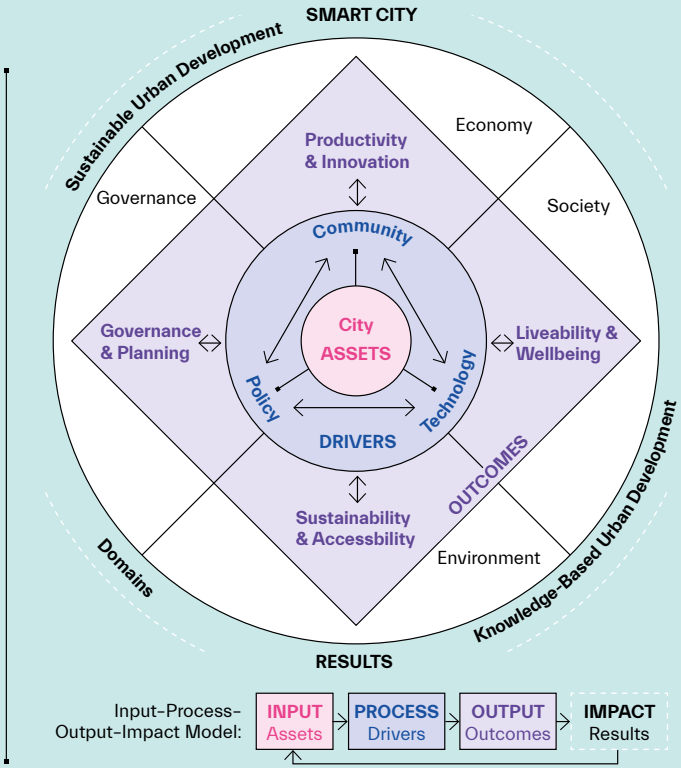
FIGURE 16. Population and GDP in the Nordic countries.

INFOBOX 1:

The inflation of smart city models

Several cities, organisations, and scholars have tried to conceptualise the smart city model and understand its synthesis with alternative models. A recent academic review[47] of over 48 different smart city models found out that the smart city models can be divided into different classes:

- The first class of models that comes up from this aggregation addresses smart city **architecture** and corresponding component definition. These models look at 6–8 different key components of smart city people, government, economy, mobility, environment, and living, often coupled with social equity and engagement, smart buildings, public security, energy and water, healthcare, and education.
- The second class of models analyse smart cities with a focus on **governance**. From this point of view, the way outputs are delivered is key, as are terms such as networked infrastructure, urban growth, social inclusion and environment,



→ **FIGURE 17.** Example of a multidimensional smart city model.[48]

intelligence for urban resilience, urban openness, service innovation, partnership formation, urban proactiveness, infrastructure integration, the triple-helix model, and business value chain analysis.

- The third model class defines tools for smart city **technology management.** These models emphasise the role of technology roadmapping to predict technology development in smart cities.
- The fourth class emphasises **data.** These model a smart city programme which typically consists of three components: data analysis, infrastructure, and management.
- There are also more **emergent model** classes, such as the ones emphasising facilities (i.e., energy, water, buildings, etc.) and services (i.e., health, education, tourism, safety, etc.) respectively, and those that prioritise people in smart cities as the source of employment growth and in terms of the human capital attractiveness of the city. Additionally, eco-social smart city models are surfacing: they are new modes for managing ecological urban living and socio-political relations.

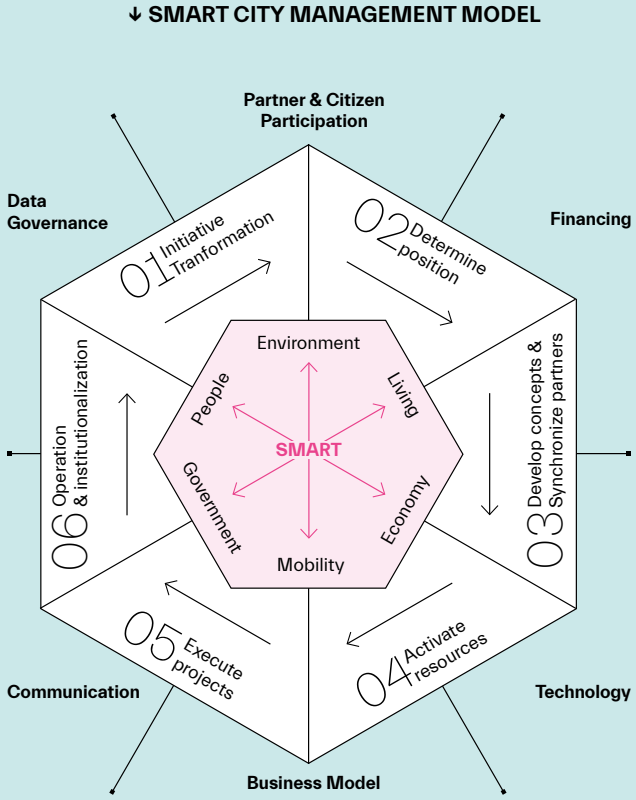


FIGURE 18. Example of a smart city management model.[49]

What can the Nordic cities teach about the character of a good (smart) city?

Perhaps the time of seeing smart city as a model has indeed passed. By focusing on what smart city models focus on – themes, technologies, inputs, and outputs – smart cities fail to capture the essence of cities: the fact that their creative power lies (as Jane Jacobs explained) in tolerance of a high degree of emergence, fluidity, and self-organisation. Furthermore, given the complexity of both urban systems and digital technologies as well as the exponential nature of digital technology development, it becomes difficult to capture all sides of a smart city in a single model. Therefore, it is no wonder that smart cities have been seen as fundamentally technocratic projects.

We think that the technocratic models that aim to describe what smart city is should be replaced by normative narratives that define what good smart cities are like. We should focus on **what the qualities of good governance of digital technologies for city organisations are – in other words, what is the character of a good smart city.**

In the following pages, we will look at the Nordic smart cities studied in the previous chapter not as descriptive models but as a prescriptive narrative for what constitutes a good smart city, distilling the good parts of Nordic smart cities for global relevance and application. In this sense, the Nordic smart city is accessible to all and it offers a framework for cities globally to understand and learn from its purpose and qualities.

”

By focusing on what smart city models focus on – themes, technologies, inputs, and outputs – smart cities fail to capture the creative essence of cities: a high degree of emergence, fluidity, and self-organisation.”

Nordic smart cities are unbounded, regenerative, and vision-driven, which leads to a unique – even radical – view of what it means to be ”people-centric”. In other words, the characteristics of cities described below are used to make technology the servant, not the master of people.

Vision-driven:

- Smart city initiatives drive cities' long-term strategic change, such as sustainability challenges, health, participation, transportation, and housing.
- Cities' overall strategies give room for experimentation to allow for further resolution in the space that has no data or best practice governance processes.
- Smart city policy and service design is led by a user point of view view, in a symbiosis with the ideal of active citizenship. The ideas of open society and universalism lay the groundwork for institutional innovation.

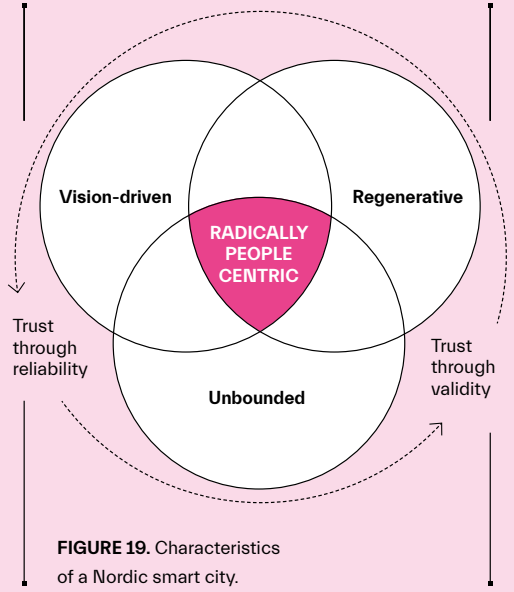


FIGURE 19. Characteristics of a Nordic smart city.

Regenerative:

- Putting people first and empowering them in smart city initiatives allows new activities and practices to emerge.
- Cities are strengthening representative democracy through online participation and collaboration.
- Advanced and competitive digital service markets allow innovation to flourish as well as the availability of real choice.

Unbounded:

- There is high trust between different sectors, people trust especially the public sector.
- Technological and data silos are being replaced by universalism and design around life events.
- There is extensive use of knowledge networks through active memberships in global, Nordic, and national city networks.

What is radical people centricity?

”

It is evident that people both want things easy and also seek empowerment, responsibility, engagement, and meaning.”

All cities claim to put their people, not their technology, first. Still, something quite unique in how this principle is implemented can be seen in the Nordic countries. For Nordic smart cities, putting people first is a unique combination of both well-functioning institutions and universalist policies aiming to empower the people.

Albeit most smart city projects and models have adapted their operations based on the critique of not being people- or sustainability-led but driven by technology providers’ interests instead, the Nordic smart cities have had a special way to digest the feedback, one that is based on a very peculiar way of understanding what focusing on people means.

Essentially, it is a combination of two rather contradictory ways to understanding people. For the Nordics, it is evident that people both want things easy and also seek empowerment, responsibility, engagement, and meaning. Therefore, putting people first is a combination of human centricity in service design and an active citizen view. This radical people centricity is giving an edge to approaches that are more bound by fragmentary approaches, silos, and the dominance of either government or corporate power over people’s power. The Nordic view of combining user and citizen perspectives in radical people centricity is presented in figure 20.

Radical people centricity = user + citizen

	User perspective	Citizen perspective
Philosophy for governance	■ People's needs should be met as fully as possible without bothering them.	■ People have needs in self-actualisation that can only be met via free association and collaboration.
Goal of governance	■ To create services based on people's life events.	■ To emancipate and empower citizens to enjoy, care, create, and produce.
Implementation	■ In practice, human centricity demands giving up services based on strong sector boundaries.	■ In practice, citizen centricity happens via universalism. This means guaranteeing the same possibilities to everyone.
Key indicators	■ Usability and comfort of the services	■ Emergence of new practices and civic innovations
Special requirements	■ Strong democracy	■ Strong trust

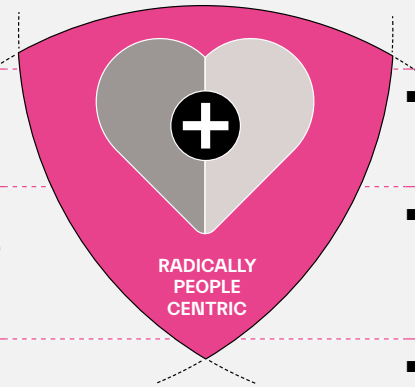


FIGURE 20. The Nordic view on radical people centricity.

Two routes to trust?

The secret sauce of the Nordic smart cities can be seen to be trust, especially trust in the public sector. This enables public administrations to lead, not just facilitate. Finland – where most of the case study cities were from – usually tops the trust studies. According to the 2018 Eurobarometer,[50] Finns' trust in the national public administration is the third strongest in the EU: 73% of citizens have confidence in the government, while 19% do not. Only Luxembourg (84%) and Denmark (74%) are ahead of Finland. However, trust in the public sector and government has declined in Finland, at a faster speed than in most countries.

The case from Barcelona also suggests that trust plays an important role in putting people first. Barcelona took an activist approach, connecting alternative technology activists inside and outside the government as well as in Barcelona and internationally. The trust was therefore built on a social movement basis and this allowed the public servants to lead.

This leads us to ask if there is actually a need for a combination of top-down and bottom-up trust building in cities that want to put people first. We call the two categories trust through reliability and trust through validity (adapted from OECD reports[51,52,53]).

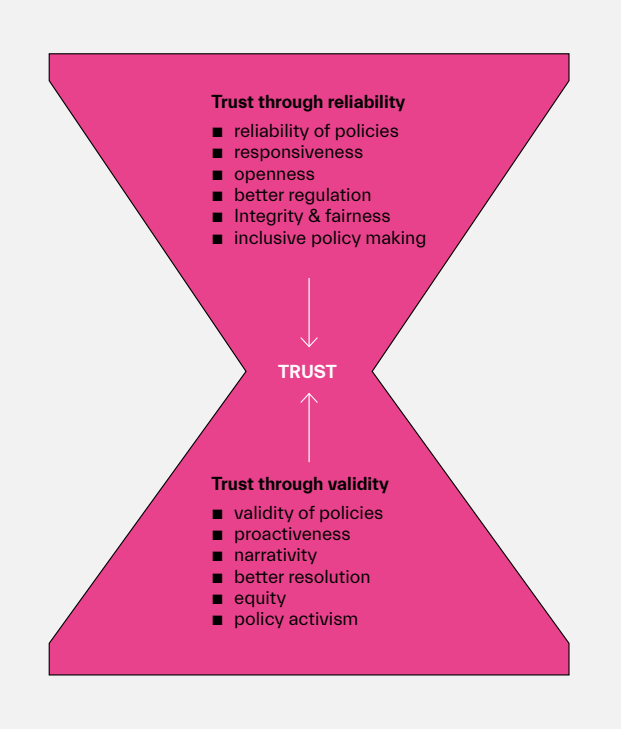
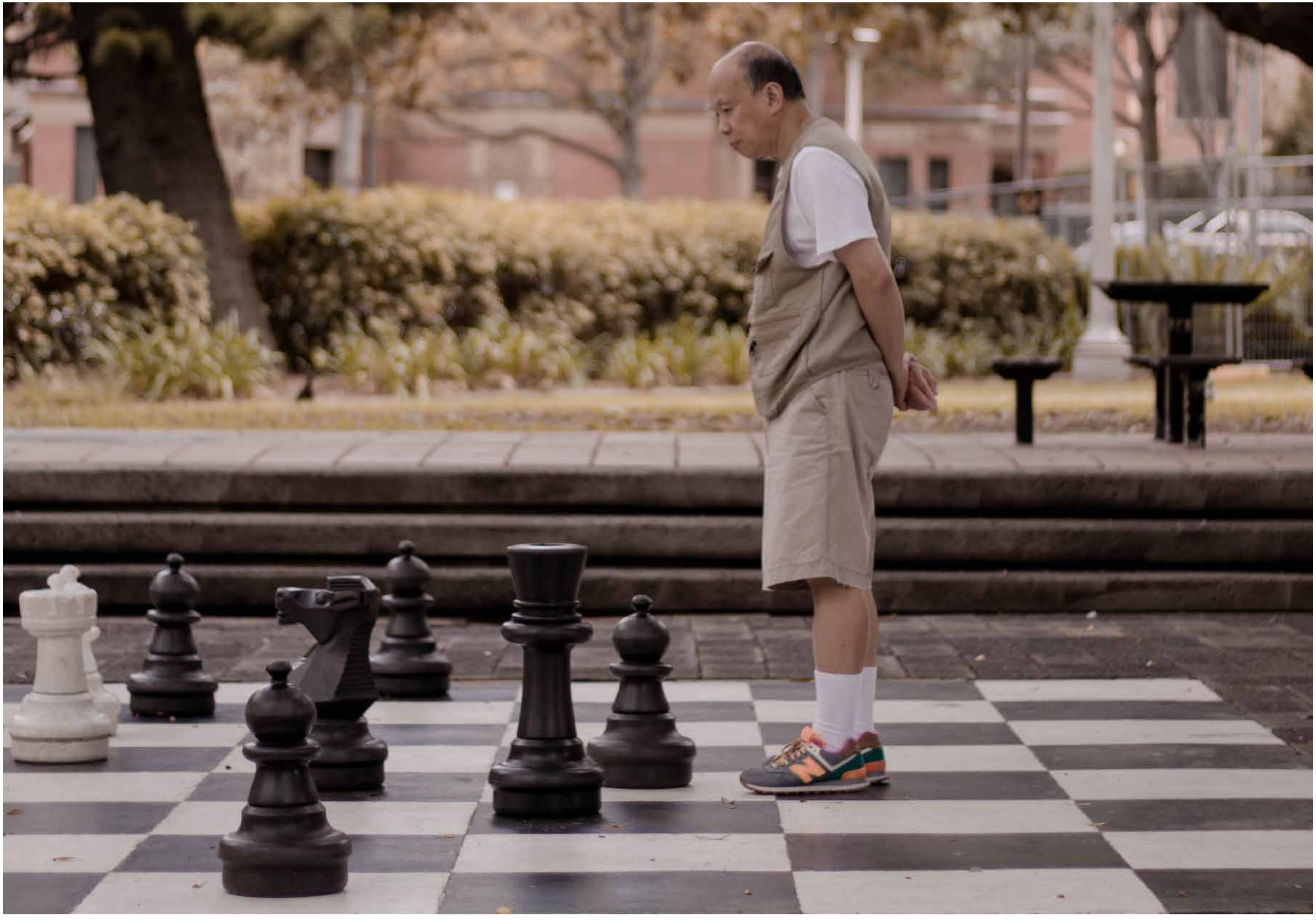


FIGURE 21. Two routes to trust.

CHAPTER

3

People-first Vision for Governing Cities

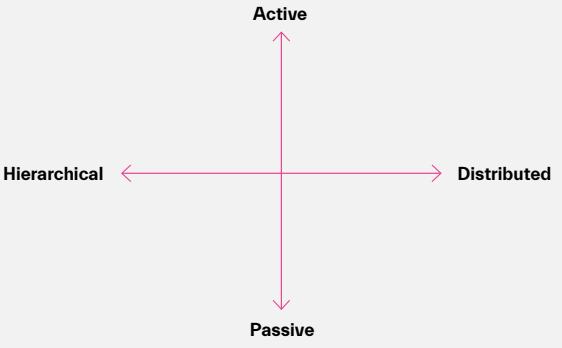


The two axes of city governance

This chapter argues overall that the attempts to lead cities as ecosystems without a vision or a sense of direction is not sufficient for the challenges of today. This means that there is a need for a new approach that goes beyond the smart city paradigm towards new forms of city governance. In this chapter, the reader learns about traditional city development approaches that are failing, and how a new approach – the People-first vision – could be found.

How to build cities that believe that people can and want to change themselves and their surroundings? How to strengthen the mandate of the city through people? How to guarantee that people can flourish in a city? How to organise people's participation in value creation and innovation in a city?

During different times, there have been wildly different answers to these crucial questions in cities, and answers hugely depend on the national tradition – cities in Nordic welfare states are different from cities in Southern Europe, for example. But when one looks at the philosophies in which cities are governed, certain timely patterns emerge. An analysis of the development of these historical patterns is presented in the following pages with the help of the two axes of city governance (see figure 22).



Active vs. passive city governance | Whether a city sees governance as an active task for itself, or views itself as a service provider or an ecosystem actor among others, is a big differentiator.

Distributed vs. hierarchical city governance | How cities see themselves in the creation of value: whether a city allows and fosters emergence or believes in strict input-output measures is another key differentiator.

FIGURE 22. The urban governance axes.

Cities' historical transformation from active bureaucracies to passive ecosystems...

Historically, governing public interest in cities can be divided into three phases:

1. **Traditional public sector (1960s-1990s).** In the traditional public sector era, public interest was tightly defined by politicians and experts. The objective of actions was about managing inputs and good administration. Accountability was organised upwards through departments to politicians. Services were delivered through public institutions and professionally self-regulated in hierarchies. It was an era of patriarchal public services and technocracy where civil servants decided on and allocated resources.
2. **New public management (1990-).** In the new public management era, public interest was (and is) aggregated through customer surveys and preferences, and performance is measured by managing inputs and outputs efficiently. Accountability is organised towards politicians and people as users through market comparisons and contracts. Services are contracted out where possible and ethos is market-based. Civil servants commission and monitor resources.

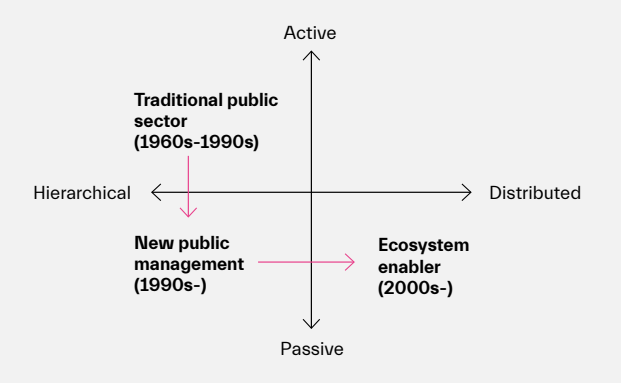


FIGURE 23. Historical transformation from active to passive governance.

3. **Ecosystem enabler (2000-).** In the ecosystem enabling model, public interest is a dialogue between providers, funders, and users. Performance is measured in multiple ways that are agreed on within the ecosystem. Accountability is towards the users of services, tax payers, other stakeholders, and politicians. Services are assembled from various providers and designed around user needs. Ethos emphasises personalisation and user centricity.

...and back to active ecosystem governance

While traditional public sector governance had an active role, using the tools and its mandate broadly across the domains of the city, this all changed with the emergence of new public management. Newer models allow for ecosystem-based approaches to governance, but in many cases the way of governing is passive.

There is a new, still undefined but active way of governance:

4. **Ecosystem governance (2015-).** In this still emergent model, several competing approaches are being formed and it is unlikely that a dominant one will emerge in the same fashion as in the previous phases happened, largely due to globally differing yet expansive approaches. It is a largely similar model to the previous one (Ecosystem enabler), with one or two differences. The ecosystem is led in a more active way, as opposed to enabling, facilitating, and being a neutral platform. The active leadership leads into different views of the end goal of the system and is, thus, political.

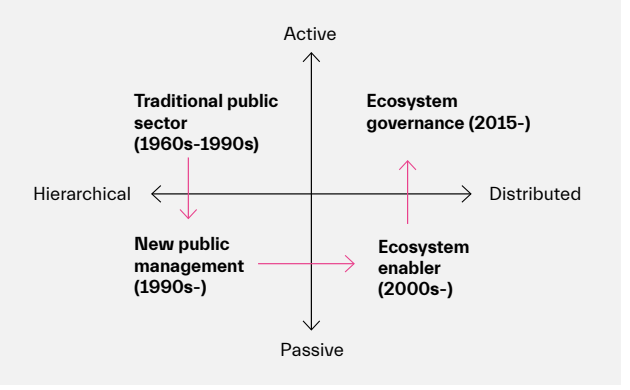


FIGURE 24. Historical transformation from active to passive governance – and back.

Competing narratives for governing cities

To understand what should replace the smart city narrative, it is useful to understand it in terms of competing narratives on city governance: how cities are seen to develop themselves and renew their role in the global urban era. There is a number of competing approaches – of which **smart city** is a central and dominant one, albeit not the only one.

The smart city narrative has coincided with the development of **transnational municipal networks approach**, often focusing on a specific issue (smart city, climate, immigration, innovation). These take the practical forms of city networks, summits, capacity building, and peer-learning. **The living lab approach** is one where the city opens up as a platform for innovation for third parties to grow on. Its instruments are accelerators, innovation districts, test beds, and living labs. **The new localism approach** is very strong in areas where there is polarisation between the national and city-level politics. Its instruments are city-led finance and investments decisions and urban intermediaries bringing solutions from one city to another.

The main narratives these approaches have sparked around the world when applied to different national and cultural contexts are the Chinese state-led approach, the Silicon Valley approach and the People-first approach. **The Chinese model** is led by the central government and it aims to create a harmonious society, with compliant citizens, whereas **the Silicon Valley approach** is led by big technology companies and aims to create frictionless consumption experiences with engaged users. **The People-first approach** is led by democratic cities and

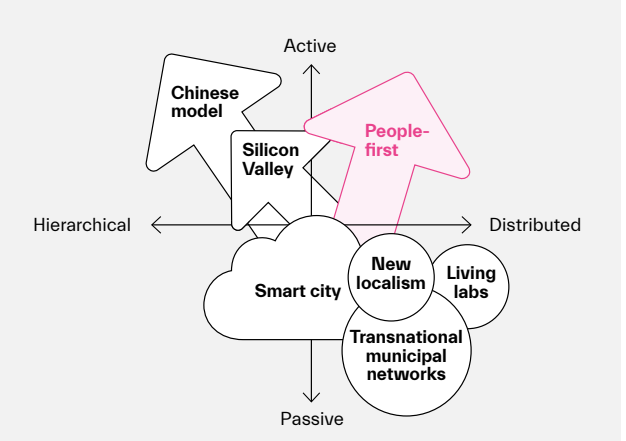


FIGURE 25. Competing narratives of city governance.

it aims to liberate and develop human and social capital with active citizens.

The world can urbanise without an increased role of cities. The fact that more people live in cities than previously does not automatically lead to cities being able to govern better. The competing approaches for governing cities are ways to combat this paradox with a mix of strategies. We will now present them in more detail.

”

The fact that more people live in cities than previously does not automatically lead to cities being able to govern better.”

The smart city paradigm

The smart city approach – in other words, the smart city paradigm – has been seen as the way for cities to govern in the urban age, with a global, technological perspective. The approach is based on the assumption that technology can create such efficiencies in cities that it allows cities to have extra resources to govern and that technological development is linear and free of ideologies and power. Furthermore, smart city assumes that solutions are technical and can spread quickly globally through markets for urban solutions.

The smart city approach has, however, failed to live up to its promises in providing measurable urban efficiency at a large scale and initiating better collaboration between the so-called smart citizens. Most recently, the technology-led approach has lost much of its appeal and velocity due to the backlash against “big tech” and the concentration of power it represents. In other words, it is possible that most of the benefits of digitalisation do not actually go to cities themselves, but to a handful of large US and Chinese companies.

Nevertheless, cities are the right level to deal with digital technology as the upsides of it (with proper governance) may be huge and critical to cities’ operations. The national and supranational discussion on how to benefit from digitalisation focuses solely on macro-level issues (such as competition and national security), whereas cities are interested in much more specific outcomes of digitalisation: more efficient use of central assets, such as roads, buildings, and services, and participation and

emancipation of citizens through digital tools and collaboration (market and non-market) between urban dwellers.

At its weakest, the smart city is seen as a way to bring competitive advantage to technology companies and that the role of innovations is to support this instead of improving living conditions in rapidly growing cities.

Another problem is the ownership and use of data: if companies lead digitalisation development, they are able to collect data on residents and, most likely, also own all the collected data. This might result in misusing citizens' private information to advance business. In this model, the private sector is put first and it barely needs local or national governance. In fact, digital platforms have been described as "private regulators".

The transnational municipal networks (TMN) approach

The learning network approach is most visible in specific themes, such as sustainability (for example, ICLEI, C40, 100 Resilient cities), digitalisation (for example, Nordic Smart City Network) and migration (for example, Mayors Migration Council).

In this approach, cities collaborate globally through networks in order to accelerate learning by providing better practices for the global urban tensions. They diffuse and experiment with international policies and, most recently, have aimed to have an impact on national and transnational policy frameworks by a jurisgenerative function. TMNs are also setting shared governance methods for global issues and aiming to impact that way into national and supranational policies.

The TMN approach has become very popular; however, its impact can be questioned due to its limited ability to directly impact supranational policies that are still dictated by nation states.

The networks may indeed give cities better tools for governing in the urban age, but they rarely (if ever) allow making binding contracts between the cities or investing together – unless this happens by lobbying the supranational bodies, such as the EU, the UN, the OECD, the WTO, and the World Bank. In other words, at best, they offer better ways to solve tensions emerging from global megatrends locally, with less impact on the global agenda.

Yet, direct collaboration between cities is necessary for the urban age as even the largest cities are relatively small in comparison to nation states or large companies (especially large technology companies that command users in the hundreds of millions – if not billions – and have endless pockets to invest).

The living lab approach

The living lab approach means that cities open themselves up as labs of solving grand urban challenges, hoping to spearhead market-based solutions for the tensions that global megatrends create on an urban level (emissions from transportation and

buildings, affordable housing, segregation, congestion, lack of entry-level and mid-income employment, unhealthy lifestyles, etc.). This is not, by all means, a small promise: according to some calculations, urban problems present one of the biggest markets in the world.

Despite the massive figures on paper, this approach has stalled and only a few trailblazing solutions have emerged with good impact on urban life and urban problems. Instead, there are plenty of applications and companies that provide solutions for urban problems, even though many of them fail to solve the problems without simultaneous changes in regulation. A well documented example of this is the policy failure of taking a significant climate benefit out of the digitalisation of personal transportation. The ride-hailing solutions (Uber, Lyft, etc) that have in theory the potential to dramatically lessen the number of cars needed to move about in the city: according to the OECD, Helsinki could have its current levels of transportation services with only 4% of the cars on roads.[54] Simultaneously, studies show that ride-hailing companies have increased traffic and taken customers from public transportation, walking, and cycling.

The new localism approach

The new localism approach means that cities are being championed as the unit that will replace the nation states by getting more power (legislative, fiscal, executive etc.) directly from the nation state. This approach is visible in various high-profile political issues reaching from organising social and health care service delivery (Finland) to setting climate targets (US) and "sanctuary cities" that have their own – technically illegal – immigration policy.

The new localism approach, however, is likely to fail and even be counterproductive if pursued as the sole strategy of urban age governance for three reasons: not only does it view power as a zero-sum-game, where national power should be handed to city-level and that it would simply solve the problem, but it also assumes that giving power to the cities does not cause tensions between thriving cities and those regions left behind in economic development Even if nation states would largely hand down their mandate to cities, it would not solve the problem of undergovernance megatrends (such as digitalisation and climate change) as even national governments lack governance in these issues: national-level governance has no power to give to cities in these issues.

The new localism approach actively creates winners and losers. The regions that lose people and industries to cities become the places left behind if cities are contrasted towards nation states. If the nation state hands down its mandate to thriving cities, who is responsible for the places – and people – left behind?

	Smart city	Transnational municipal networks	Living labs	New localism
Operational logic	Efficiencies through data-based management of city's central infrastructure.	Better methods for public sector through sharing best practices.	Market-based solutions for urban challenges accelerate economic growth and solve grand challenges.	Cities can replace the nation state by actively seeking to take power from it.
Focus / point of view	Operational efficiency	Capacity building	Supporting entrepreneurship	Decentralisation of power
Methods and implementation	Data infrastructure, control rooms.	City networks, summits, peer-learning.	Accelerators, innovation districts, test beds, and living labs.	City-led finance and investments, decisions and urban intermediaries utilise solutions created in one city.
Strengths	Providing cities with better tools to manage.	Accelerated learning on quickly changing issues.	Gives alignment to cities' innovation efforts.	Provides cities with a new narrative of power.
Weaknesses	Transfers power to a few large companies that reap most benefit from the development.	Inability of cities to invest and create binding contracts together.	Reduces cities' role in global governance of economic development.	Fails to govern globally or even nationally.

FIGURE 26. Typology of some of the current approaches to city governance.

Power through technology: China vs. the Silicon Valley

China has responded to the rapid urbanisation they have faced with a variety of digital solutions and policies. Their aim has been to ease the issues resulting from heavy migration to cities. With the help of Chinese corporations, such as Alibaba and Huawei, China is, for example, easing congestion, implementing cashless mobility payments, and improving package deliveries.

However, instead of focusing solely on improving their citizens' living conditions, China's emphasis has been on citizen surveillance and control to increase domestic security. This is evident from the amount of city cameras, data gathered with surveillance applications on residents' mobile phones, and the domestic security budget being bigger than that of defence against foreign threats. The Chinese digitalisation model has been built to serve the government's interests and is far from people-centric.

What lacks from the Chinese model is the resilient mandate that comes not via technology but via the people. For example, in the new localism approach, the mandate comes from the promise the city makes: to take control over global issues. This active role of the city is a crucial step in developing a more people-centred approach.

The Silicon Valley offers cities a powerful idea: the idea of governing them by optimising consumer transactions with digital platforms that digitise different aspects of social and commercial life.

Platforms are a collective set of contracts that are policed by a software which makes them nearly impossible to break. With their increasing economic power, platforms have started to look to cities for more business opportunities. Perhaps the most famous example of this is Alphabet's Sidewalk Labs which is constructing an entire area in central Toronto. Other examples of this are the ride hailing services (dominantly Lyft and Uber) that have been disrupting taxi services in cities globally. This has led many thinkers to argue that cities are the next frontier of expansion for platform companies.

Since platform companies work essentially as private regulators of people's behaviour, they present a unique and fast concentration of power globally. An individual city is in a relatively weak position to negotiate with enormous billion-dollar companies. Their power has been further increased due to the Covid-19 outbreak in 2020.

However, US big tech companies have failed to resolve grand efficiency challenges, compete unfairly with (local) suppliers, expand by externalising many costs, amplify existing biases and help to manipulate democracy.

What lacks in the Silicon Valley model is people's participation in the governance of the technology that governs them.

The People-first vision

The People-first vision is a normative perspective for leading and governing cities in the 21st century. Unlike some of the existing city governance approaches presented in the previous pages, the People-first vision does not primarily ask what can be done with the technological tools we have but focuses on what should be done for the people to live a good life in cities.

The People-first vision builds upon the democratic tradition of cities – the one that predates the states. Thus, despite the case studies presented in this report are from European cities, we believe the vision has universal appeal and potential. The People-first vision is not a localist view but one deeply connected to the global sphere.

The People-first vision also represents an active (compared to passive) approach to city governance. Answering the challenges of today requires leading with a vision and actively showing direction in addition to coordinating and orchestrating the actions of the city community. The above outline of cities' historical transformation from active to passive governance and back shows how the People-first vision takes a step beyond the smart city approach and emphasises the active role of the city organisation in urban ecosystem governance.

”

The People-first vision builds upon the democratic tradition of cities – the one that predates the states.”

In order to achieve and maintain this active role, the city governance needs to have both appropriate tools and a proper mandate for using them. Without the right tools, it is impossible to implement the vision for governing the city. Even more importantly, without a proper mandate, it is impossible to determine how to use the tools correctly.

In the People-first vision, both the tools and the mandate are simultaneously in use, but the mandate is primary to the tools. In democratic systems, the only legitimate source of political mandate is the people itself and in the People-first vision, that mandate defines how to use the tools. See figure 27 for a comparison of how the people are viewed in different approaches.

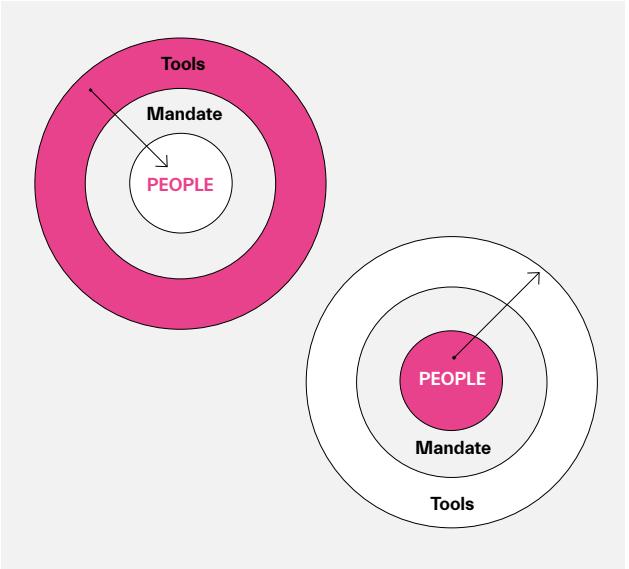


FIGURE 27. Illustration of different perspectives to governing cities: the technology-centric approaches vs. the People-first vision. The People-first vision counters the technology-centric approaches such as the Chinese and Silicon Valley smart city models. They exemplify a way of governance where technological tools are used to acquire power and mandate through the control and surveillance of people. In the People-first vision, the mandate for the use of the tools comes directly from the people and hence, the tools are used respecting their rights. This kind of radical people centricity strengthens the mandate and enables the active governance of the city using relevant tools and technologies.

The People-first vision prioritises four characteristics in applying the mandate and the tools in city governance. We will present them in detail below.

1. Always putting people first

Firstly, always putting people first means that the city gives people direct opportunities to shape their environment. Each investment and action should increase people's power over their environment – and the more directly, the better. This means aiming to go beyond giving a choice or enabling participation: to designing products and services, towards self-actualisation and empowerment.

Secondly, putting people first means moving from public-private partnerships to people-private-public partnerships. Each public-private partnership collaboration should be done, first and foremost, from people's perspective, starting from people, their values, needs, and capabilities that the public and private sectors can support but never entirely control.

Thirdly, the People-first vision requires actively facilitating people-to-people and face-to-face collaboration. Communities, active and exploratory life, and civic action are ends in themselves and it is important to not only value them in an abstract sense but to invest in them. Especially in the era of mediated communication, enabling physical interaction between people from divergent backgrounds should be a leading design principle for governance of any system where people are involved.

2. Leading ecosystems with visions

Leading ecosystems with visions means defining boundaries and setting values. The task of defining what is a part of the ecosystem and what is not is the most efficient way to lead the ecosystem. This requires setting values that go beyond efficiency measures: in other words, being able to differentiate between unwanted and wanted behaviour by its contribution to the ecosystem as well as setting values that indicate what kind of behaviour is wanted and encouraged.

Leading ecosystems requires that the leader is able to pass resolutions. Complexity cannot be led by treating all parts of the ecosystem similarly but by understanding that they create value in different both interrelated and independent ways.

Leading ecosystems also means taking responsibility of the ecosystem outputs. It requires the ability to take on different roles in case some parts of the ecosystem fail to deliver their share. In other words, roles and responsibilities between different sectors are not set in stone but fluid, and the leader must be able to guarantee outputs.

3. Building capabilities inclusively

Inclusivity is sewn deep in the idea behind the People-first vision as the model is not built for the far and few but for everyone. The People-first vision believes in the evolvement of people and sees them as ever changing rather than constant.

The way people change and evolve is through participation and collaboration with other people, and, thus, participation and collaboration should be valued as ends in themselves. Building capabilities inclusively means recognising people as social beings, with diverse motives and diverse intentions, making and transforming the world in which they live. This dialectic view of the world sees social structures and human agency working back and forth in a dynamic relationship: this means creating systems and possibilities for dialogue, collaboration, and co-creation both physically and virtually. The possibilities for participation and collaboration should not be limited to few nor should there be gatekeepers.

Investing in the most vulnerable and least engaged is rooted in the People-first vision as it can be seen as a balancing act between different people with different capabilities and assets. Building capabilities inclusively means being able to lift the floor, by not only offering the same possibilities for everyone but by making sure and by monitoring that those possibilities are equally used. No person is the same and, thus, creating a diverse pool of opportunities for different people is a way to ensure equal opportunities for civil engagement.

4. Giving people new rights

The fourth aspect of the People-first vision is the attitude towards common assets: the universal principle of rights to

common intangible assets is crucial as assets are the key component in creating new and innovative services. Pushing the boundaries of free and open assets gives the public new tools to create new capabilities and services. This push does not mean that everything should be free and open, but the possibility of making tools and services freely and openly should be an option that is first assessed. Innovation happens at the crossroads of new technologies and knowledge and, thus, both of them should be made as accessible as possible. This means both traditional municipal services like the library service but also newer forms of services like open-source data.

The Universal Basic Assets (UBA) principle is founded on the idea that everyone should have access to certain core resources regardless of an individual's possessions or capital. Universalism can empower the individual to abandon a negative self-image of failure and to embrace autonomy and agency. It can emancipate society from tribal arguments over who benefits from what and foster a common sense of social justice and political commitment. The People-first vision takes into account the diversity of assets contributing to the wellbeing of humans and supports fairness in the society.

Digital assets should be considered open as they are often co-created in collaboration between an organisation and individual. This open approach to assets ensures a more equal distribution of ownership and capital according to a Palo Alto based Institute for the Future (IFTF) which has published their manifesto on the UBA in the spring 2017.[55]

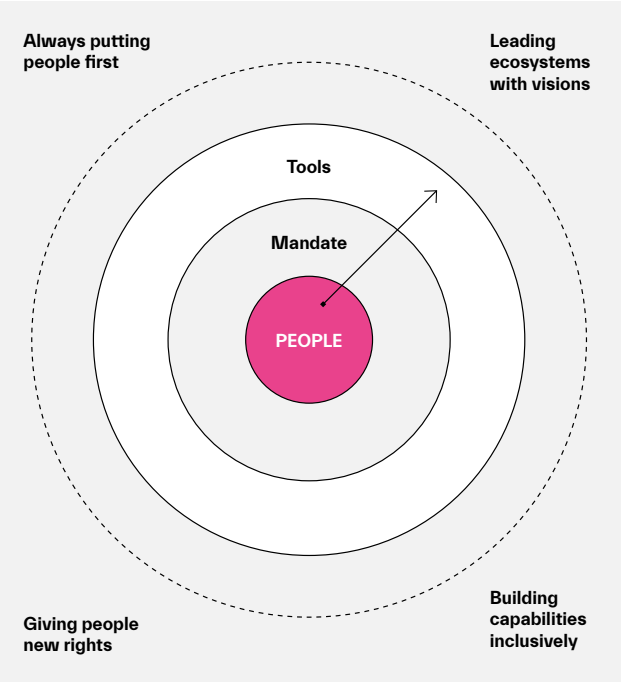
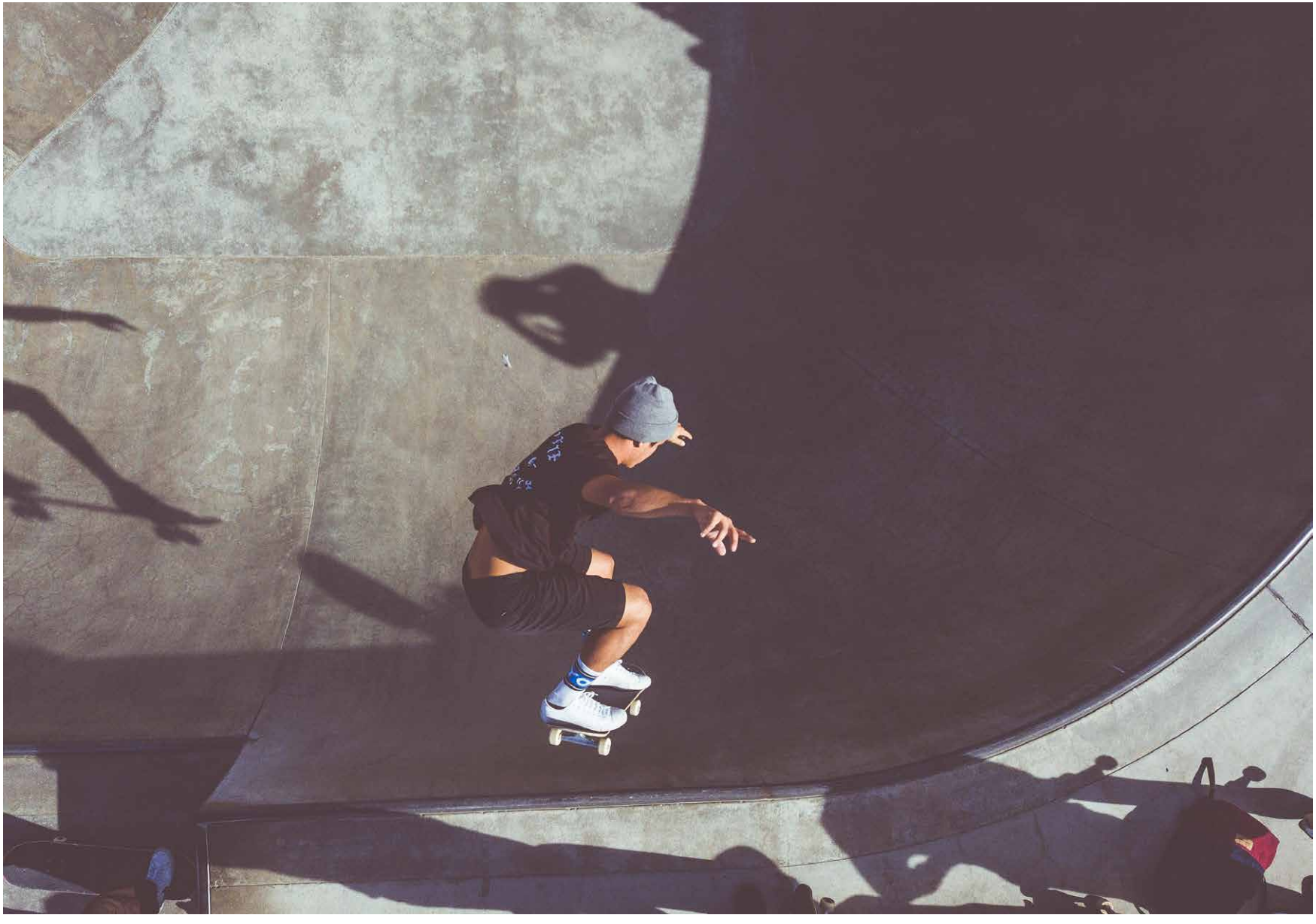


FIGURE 28. The People-first vision with four characteristics.

CHAPTER

4

Recommendations: How to Operationalise the People-first Vision?



Recommendations:

How to Operationalise the People-first Vision?

The People-first vision is a new paradigm to develop cities to be successful in the future. In this chapter, the reader learns how to put the paradigm in action, and we argue that we need a new approach to lead cities in the global urban age.
We claim that, to be successful, cities have to proactively steer the urban environment while simultaneously engaging with ecosystems outside the city government to e.g. provide services. The new role requires new thinking.

The People-first vision offers a radical departure from traditional ways for cities to govern global issues, but also presents a departure from the big tech and the authoritarian smart city models. The People-first vision could emerge as a European alternative.

Demos Helsinki sees the People-first vision as a new way of building mandates and better tools for governing global tensions: by investing in people, not as subordinates of the public or the private sector, but as autonomous agents. This approach is radical especially in how it sees the city organisation's and people's relationship.

The People-first vision presents a turn in strategic management of cities. This emancipatory turn in managing cities is developed to give cities more power over global issues that have urban-level impacts, yet are extremely difficult, perhaps even

”

In a democratic system, power can only come from the people and by strengthening the people's power.”

impossible, to manage locally through the tools and mandate available for cities.

It has become commonplace to start viewing cities as innovation ecosystem facilitators and collaborative innovation platforms. In this view, value is created through enabling testing and scaling innovations in both public and private sector via living labs and other experimentation platforms that bring together the city's assets and services, the private enterprises, and people as users.

The power of ecosystem thinking is undeniable: the City Hall does not have the resources nor knowledge to figure out everything by itself. At the same time, the idea of ecosystem facilitation puts cities in the back seat: they enable, orchestrate, and facilitate.

People-first cities are governed as ecosystems, but with a more active – normative – role from the city organisation. Cities lead ecosystems by showing them the direction. This may at first seem somewhat paradoxical, but it happens by empowering people to act and collaborate independently as a part of the ecosystem, alongside the city government and the innovation ecosystem.

Currently, the strategic management of cities is fragmented. This is due to a lack of resolution in facilitating public-private-people partnerships.

The People-first vision turns the partnership pyramid upside down: the people become the end goal of the partnership instead of being subordinates or users that participate in city processes. Treating people themselves as the final goal is not only a moral but a deeply pragmatic issue: when new governance structures need to be set up for the global urban age, cities need more power, which, in a democratic system, can come only from the people and by strengthening the people's power.

For this turn in strategic management to be possible, cities should adopt a leadership philosophy fostering active citizenship. In order to do that in the global age, they must not only provide ecosystem facilitation but show (and maintain) a clear direction and lead the ecosystem. In practice, this can mean four things.

1. **Firstly, cities can show direction and lead the ecosystems,** not just facilitate and orchestrate them. This can be done via many different instruments open for cities today from procurement to legislative powers, but also working to grow and attract certain kinds of businesses (at the cost of others)

and through developing their own capacities in, for example, digital service provision in collaboration with other cities.

2. **Secondly, cities can have a better view of the interaction of people, markets, and public actors** than what the current public-private-(people) partnerships provide them. Cities need to go further to better understand the dynamics between them.
3. **Thirdly, cities can form alliances with other cities that go beyond just sharing best practices:** ones that allow different models for urban era government to emerge, ones that can compete on the global arena.
4. **Fourthly, cities can abandon the view that public services alone create wellbeing.** In the industrial model, the wellbeing guarantee comes from access to public services when support is needed. In the People-first vision, wellbeing comes from empowerment. Therefore, the city should aim to set people free: to pursue wellbeing together with others. We argue that by empowering people to come together to create, care, and produce, cities can have more power to govern in the urban era.

The People-first vision is a way for cities to lead the change. It is important that cities are the actors solving global challenges, since they are the places where a big part of the reasons behind the challenges are laying - and who suffer most of the consequences.

AFTERWORD

Urban Age, but how?

Afterword:

Urban Age, but how?

In this afterword, the reader learns why there is a need to re-imagine cities. Cities are portrayed by many as a key in solving the societal challenges of our era. At the same time, cities lag behind by not having the power to influence these challenges. By implementing the People-first vision, cities can empower citizens as actors who can start providing solutions to challenges, such as the climate change. Yet, more analysis is needed on how to equip cities in tackling global challenges.

Perhaps the new localists are correct and we are entering a new phase in governance: the urban age. Cities are growing at a massive speed, both in terms of population but also in terms of their contribution to the economy. Today, most people live in cities. The next two decades will present an unforeseen wave of urbanisation. In 2030, there will likely be 43 cities with a population over 10 million – instead of the 10 that exist today.

However, as this is a fundamentally global age as well as a urban one, this presents us with a real paradox: cities have very few tools and often a poor mandate to govern outside their jurisdiction, let alone internationally or on a global scale.

Consequently, cities are bombarded with global mega-trends, such as digitalisation and climate change, and the very material tension they bring about on the urban scale with very indirect power over them.

Many of the tensions created by megatrends (climate change, digitalisation, demographic changes, global economy, demographic changes, and search for belonging) materialise in cities. Not only can the consequences be seen in cities, but it

can actually be said that most of the megatrends are a byproduct of urbanisation.

For example, most of the climate emissions come from cities. Thus, decarbonization means changes in cities: for instance, how they are built, how properties and infrastructure are used, and how transportation, production, and consumption are organised in them.

Similarly, digital companies are expanding to cities to deliver services and/or collect data, largely in ways that bypass the city government. At its core, the global economy is an urban phenomena, with cities being the global economic power houses, which in turn has led to cities seeing themselves as competitors in talent and investments. Immigration is also a predominantly urban issue as most of the immigrants come and stay in larger cities. In the case of European cities, immigration is a major – if not the biggest – cause of population growth.

Therefore, it is no wonder why many city leaders share the Mayor of Helsinki's, Jan Vapaavuori's, view that "the cities' role

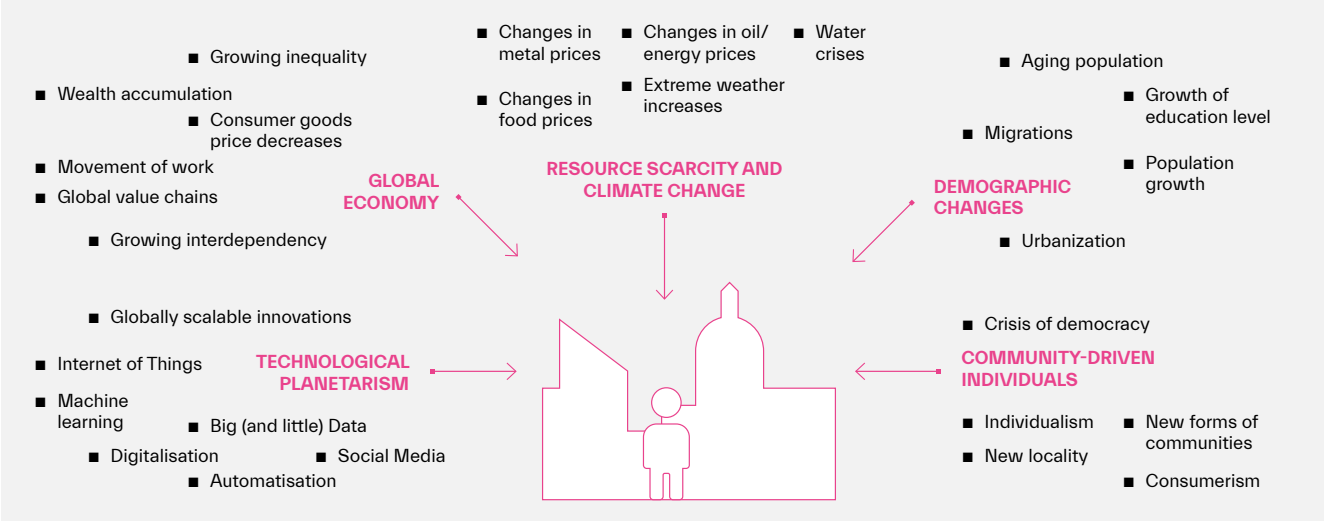


FIGURE 29. Global megatrends hitting the cities.

and significance grows when it comes to solving the global challenges in society. Therefore, the cities should have more say when decisions on these matters are taken around European and international tables."[56]

It is often said that we are entering a new era where cities rule instead of nation states and where cities are the basic unit of a globalised world that is a hierarchical network of different-sized cities simultaneously in collaboration and competition with each other. A world where borders lose power to networks. What should be the cities' role in this new urban era?

There is indeed a strong case for cities to enter the tables for governing global issues. It can be philosophically traced back to the idea of empowerment: the idea of liberating people from limiting circumstances.

By empowering the people themselves, better resolution of issues concerning them exists. This is especially true in the context of global issues and cities: governance at the city level means there is more accurate information on the impacts of megatrends and, hence, better possibilities to govern the issues themselves.

This idea is commonly described as the subsidiarity principle: social and political issues should be dealt with at the most immediate level that is consistent with their resolution. Subsidiarity is perhaps presently best known as a general principle of European Union law, but is poorly manifested in governing global megatrends.

This theory manifests also in practice. Take the case of digitalisation and the massive efficiency gains it promises. Studies show that, for example, different car-sharing schemes change people's travel behaviour. Benefitting from these efficiency gains from urban assets, such as buildings, roads, and infrastructure, through the use of digitalisation, requires very specific understanding of how to govern third parties that operate them (such as platform companies) that goes well beyond competition or privacy – the issues that are mainly discussed on the national level of digital governance.

As can be seen from this example, the national or supranational levels of governance have very little impact on how cities operate. These governance structures are made for macro-economic issues. For example, the focus on governing digitalisation through competition law and viewing them as monopolies may be beneficial for the economy at large, but promises very little otherwise for cities that can also hugely benefit from digital technologies. Why should cities be interested in breaking up Facebook? And more importantly, how could social networks like Facebook add more local value?

Cities have tried several ways to enter the global arena: through technology, learning networks, urban market solutions, and new localism. As we have argued earlier in this report, these approaches have failed on two fronts: firstly, they all have intrinsic limitations to them (that are analysed in Chapter 3). Even more importantly, two new models of global governance – the Chinese model and the Silicon Valley approach – have emerged in the last few years that promise to govern where the cities are failing.

We argue in this report that, in order to thrive in the urban age, cities need to lead the change instead of only adapting to it. Cities need power to directly shape the issues that fall in their lap rather than just taking care of their consequences or indirectly guiding them via national and supranational politics.

Cities and city leaders especially must examine what is their stronghold in global governance. In this report, we have argued that this strength lies in being close to people. Here we hope to paint an inspiring picture of what follows from implementing the People-first vision in cities: a new way for leading cities in the global urban era. The approach is a city leadership philosophy that focuses on creating deep-rooted local power over global issues by empowering urban inhabitants to act upon the issues directly.

This type of leadership does not understand power as a zero-sum game between different levels of government (urban, metropolitan, regional, national, etc.), but as an outcome of investing in and empowering urban dwellers (in their many roles as citizens, activists, professionals, leaders, entrepreneurs, and consumers) to act upon the megatrends directly.

We argue that, in this way, cities can have more direct control over global megatrends. By putting people first, cities yield both an increased mandate and create more tools for governance. Both are needed: mandate alone does not last unless cities can deliver change that is experiential to its dwellers. Viewing governance as a merely technical issue by building better tools and processes hides the issue of changing power structures.

The key to the People-first vision is to put people at the core of cities' operations. We have argued that this is rarely the case in cities. Cities still function on an industrial logic, making outputs of inputs: in other words, focusing most of their resources on economic development and public service provision. In this view, people become subordinate to the private and public sector.

So how to put people at the core of cities' operations? The change in perspective is made possible by a simple strategic innovation in how cities are run: by adding empowerment – not just participation – of citizens to the core responsibilities of the city, alongside public service provision and economic development.

There is nothing wrong with participation in public and private service delivery. That alone is, however, not enough for cities that want to have a stake at the urban age.

This is a radical new reading of the public-private-people model. It states that people's role as autonomous actors and collaborators is more important than their role in participating in the development projects of the city organisation as end users.

The inspiration for the People-first vision to lead cities comes from the change in the way a number of Nordic cities and the City of Barcelona are governing. We argue that the case studies demonstrate both the uniqueness and the accessibility of the People-first vision.

ANNEX 1

The power phase (2017–) of smart city development

The power phase (2017-)

Whilst "smart city" has become the de facto paradigm of urban development around the world, there is another even faster and, arguably, more powerful development taking place within the digital and virtual sphere: the emergence of platform companies and the data economy.

The intersection of the city and digital platforms (such as the US-based "super platforms" Apple, Amazon, Microsoft, Google, Facebook, and China-based Alibaba and Tencent, as well as more specialised platforms such as Uber, Lyft, Airbnb, Spotify, and Twitter) is an especially interesting one as platforms serve mostly urban dwellers.

Platform companies (or multisided platforms as they are often referred to in academic literature) are different from regular firms in two key aspects:[57]

1. They enable **direct interactions** between two or more distinct sides.[58]
2. Each side must make **platform-specific investments** in order to directly interact with each other.

The combination of these two aspects creates unique levels of network externalities (adding more users adds to the value of the platform) and increases switching costs (the costs of changing from the platform to another supplier),[59] thus locking in users on all sides to the platform. This mechanism of attracting more users and locking them in helps explain the growing importance of platforms and the need to take them seriously.

The so-called power phase of the smart city development has been covered to some degree in literature. Below is a collection of arguments about the threats of the data and platform-centric view of smart city development:

- The turn to platforms and data economy and data economy challenges to the citizen-centric view of smart city[60], making top-down control feasible, especially in the rapidly urbanising world, further increased surveillance and data-based policing[61] and putting individual privacy at risk[62].
- Slow government reaction to the rapid changes in smart cities. Governments have little chance of obtaining better data with user consent than platforms and data economy.[63] There is consensus concerning the efficiency gains of platforms and data economy and AI, but very little concerning what should be optimised and how to decide this.[64]
- Policymakers having very few tools to make local ecosystems more competitive vis-à-vis global platforms and data econ-

omy, for example, in platform-driven mobility transformation, where companies from different industries compete.[65]

- Platforms and data economy fail at delivering in grand efficiency challenges: platformisation has failed to address the living cost challenge of cities (even if the cost-increasing impact homesharing services, such as Airbnb, on rents seems to be concentrated in popular tourist areas[66] or remain modest[67]). Reviews of smart city applications globally show a considerable lack of applications that focus on the cost of living.[68] Additionally, transportation platforms have increased traffic by converting public transportation users to ride-hailing services.[69]
- Platforms are expanding by externalising costs: some major platforms may only reach profitability if workers' rights are limited.[70] As platforms require more and more data, there is also an intrinsic drive for these companies to limit the property, political, and privacy rights of individuals as they search for data[71]. Platforms' appetite for data means also that these businesses are also constantly expanding into new business areas.[72] Eventually, public services can face competition: as highly personalised and relatively cheap services become available, the legitimacy of free yet mass produced public services can decline.
- Platforms and data economy amplify existing biases: platforms increasingly choose to reduce the anonymity all parties in order to facilitate trust. It has been shown that this results in, for example, racial discrimination.[73] The more platforms become algorithm-driven, the more they may amplify social inequality. This algorithmic bias exists even when there is no discriminatory intent on the part of the developer of the algorithm. Sometimes it may be inherent in the data sources used, but even when the sensitive attributes have been removed from the input, a well-trained machine learning algorithm may still discriminate on the basis of such sensitive attributes because of correlations that exist in the data.[74]
- Platform companies compete unfairly with (local) suppliers: the competition between platforms and the supplier operating in them can reduce innovation, increase prices,[75] and limit consumer choice.[76] Indeed, a public consultation by the European Commission showed that 90% of suppliers felt dissatisfaction with their relationships with platforms. The most common problematic practices experienced were: "(i) a platform applying unbalanced terms and conditions; (ii) a platform promoting its own services to the disadvantage of services provided by suppliers; and (iii) a platform refusing access to its services".[77]
- Platforms degrade and (help) manipulate democracy: the platforms' ability to govern their users has led to accusations of organising users into bubbles[78] that increase group polarisation.[79] There is also evidence that negative sentiments spread faster than positive ones.[80] Furthermore, the ability to micro-target users based on psychographic profiling has lead to accusations of enabling direct meddling of elections.[81]

ANNEX 2

Analytical framework of the case studies

	Lessons for governance of the smart city agenda within the city	Lessons from how city is practicing leadership in the smart city ecosystem	Lessons in how city cultivates the central assets of smart city ecosystem
Case Study 1: City as a Service, Espoo	Espoo's City as a Service is a spearhead for moving the city from production logic to service logic and capitalising on the resources and designed services that are spread throughout the community, thus combatting silos and taking advantage of networks.	In Espoo's City as a Service model, the city is enabling and orchestrating the operations of the whole city community (not just publicly owned assets) and, thus, releases more resources and assets for use by public services, private companies, and the people.	The City as a Service model complements the traditional approach to public asset management with the idea that the city organisation can also orchestrate the use of other assets, such as private companies, civil society organisations, and people. From this perspective, the city's role is to cultivate and renew these assets: human, social, industrial, and environmental.
Case Study 2: MyData, Helsinki	Helsinki has brought the smart city agenda (data in particular) to the Mayor's office and made extensive use of the MyData movement and knowledge networks. The city is building the Helsinki profile to allow each citizen to control their data in a centralised manner across all city services.	The City of Helsinki is taking an active role in defining the rules for collecting, sharing and using data, from the point of view of the people. MyData is an infrastructure-level approach for ensuring data interoperability and portability independent of sectors and based on individual consent.	MyData can be understood as a transformation to a new data paradigm where data is no longer considered as public property but as a universal one. Data is co-created by all of the actors of the city ecosystem instead of just the public sector. This shift allows more value to be created as more people and institutions have consent to utilise the data.
Case Study 3: Collective Engagement Model, Tampere	Tampere has heightened the importance of the smart city agenda on the level of city governance by combining it with the digitalisation of public services, the support of the business ecosystem, and the sustainability programmes of the city.	Tampere has brought its model for collective engagement directly to its strategy. Collective engagement is hence one of the three most important parts of strategic management of the city. It directs the action of the city organisation in the same way as public service production or support for private businesses.	Tampere shows that it is possible to value participation and engagement as an end in itself. Additionally, combining the economic, public service, and sustainability interests in the smart city agenda allows value creation across sectors.
Case Study 4: Vantaa Together	Even though Vantaa is utilising digitalisation and data to develop city services, it has no centralised smart city agenda. This enables taking advantage of the knowledge networks within the city based on Nordic strengths such as trust and openness.	Vantaa has defined its role as the visionary leader of the city ecosystem providing the grounds for action for the residents and companies. The outspoken values show the direction but leave a big space for the other actors to maneuver. The long-term futures thinking is apparent from the idea that the common vision is more important that individual actions.	The core pillars of Vantaa Together model are openness and cooperation. By being open and building trust, Vantaa makes sure everyone can strive to achieve the shared goals through collaboration between the different actors of the city. The value of informal cooperation is also recognised.
Case Study 5: Barcelona Digital City	Barcelona changed the way it governs digitalisation, giving it a higher status in city governance (between the political and operational levels), thus giving it a better mandate and more tools by tapping into the unique resources available globally in, for example, technology, law, economics, funding, and policy.	Barcelona Digital City is a vision-led approach where the city has developed tools most importantly for procurement, data management, participation, and transnational city collaboration to strengthen its mandate to deliver the vision.	Barcelona introduced a third core function to city governance. Alongside service provision and economic competitiveness, the equally important core function is to empower people into taking autonomous action. People's autonomous action is not directly subordinate to the city's own objectives and services or directly benefiting the local businesses through participation in production or consumption of goods and services.
LESSONS	In all of the cases, the Smart City agenda is promoted and aligned with each city's own strategic priorities and, thus, governed, not as a technical issue but as a strategic core competence of the city. Additionally, human centricity is used to combat silos and lock-ins.	In all of the cases, the city's role is to provide a long-term, vision-driven perspective for the future that helps lead the Smart City ecosystem, gives it direction, and guarantees human and people centricity.	In all of the cases, the city recognises that public goods are produced differently within different sectors (people, public, private) and in collaboration between them.

ANNEX 3

Data-based ecosystem management

Managing urban ecosystems

Leading an ecosystem of service providers and other stakeholders is a crucial challenge for People-first cities. The city needs to balance the freedom of organisations while ensuring the delivery of desired outcomes, quality of services, and the privacy of sensitive information. Understanding how to lead the ecosystem is vital for unleashing the full potential of People-first cities.

In this appendix, we describe four different approaches to the management of ecosystems: (1) Data-sharing Platform, (2) Outsourced Contracts, (3) Service-as-a-Platform, and (4) Public Service Directory. The different approaches are separated by two critical variants:

- How active of a role does the city as an organisation have in the management of the ecosystem (hands-on vs. hands-off)?
- How much data is being exchanged between the ecosystem members (low vs. high)?

These approaches should be read as ends of an spectrum. A city should evaluate the strengths and weakness of these approaches in their own particular context. Based on the evaluation, a city should decide which elements of different approaches should be implemented in their cases.

The following pages concisely describe the four approaches.

	City has an active hands-on role	City has a distance hands-off role
High data exchange between ecosystem members	**Public Service Directory**	**Data-sharing Platform**
Low data exchange between ecosystem members	**Service as a Platform**	**Outsourced Contracts**

FIGURE 30. Different approaches to the management of urban ecosystems.

Public Service Directory

The Public Service Directory (PSD) model is a large scale decentralised system that has strong user data protection but a universalists approach to common data. The public service directory resembles the Finnish Innovation Fund Sitra's IHAN data model[82] with changes in the way the Public Service Directory is managed. In this system, the city is the owner of the so-called directory, forming a digital infrastructure where ecosystems function as services. The owner of the PSD has a strong controlling stake indirectly in the ecosystem as it has the power of defining and setting the rules and boundaries for the ecosystem atmosphere. The partners will be working as independent service providers with autonomous and individual back-end operations and operating models. However, the interface for the services is unified to ease the use for the user. The interface is unified as rules by the directory owner.

As the PSD owner, the city can position the service providers by changing the rules in the directory. The changes can be in the interface, the requirements, and what kinds of action is requested, encouraged, and punished. The model has strong personal data safety as the user can define what information it wants to share with the directory. Inside the public directory, the service providers han have dependencies, e.g. a Mobility-as-a-Service provider can use public transportation data from another service provider, and ride-hailing data from a different provider. Data providers can provide data for the directory to be accessed by the service providers and the users.

The PSD model is an interpretation of a City-as-a-Platform model. Within it, a network of independent contractors are managed by rules defined by the city. The core is in data sharing and information sharing among partners and on permission of the user. Fair value exchange is at the heart of the system. Service

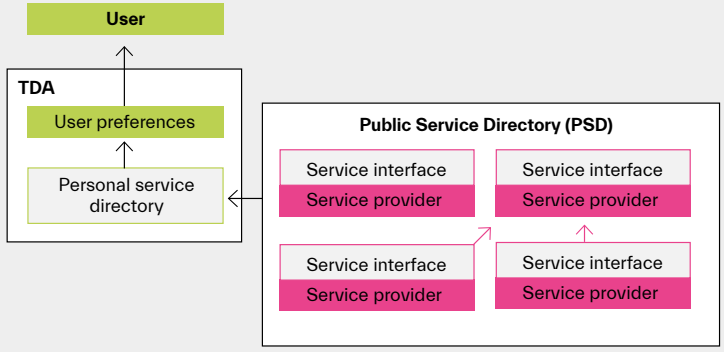


Figure 31. Outline of the Public Service Directory model.[83]

Providers must not only be compensated for the creation of the Services but, equally importantly, the Data Providers must be compensated for storing data and making that data available. Value can be money or any other form of value exchange that both sides transparently consider to be fair.

What should you do?

In the Public Service Directory model, the city has an active role and a lot of data is being exchanged between the ecosystem members. It requires a vast infrastructure to function. The owner of the ecosystem can define rules and regulations on how the data and service providers inside the directory can function. The directory should be based on an open-source platform where it can be pinged by the service and data providers. The ecosystem requires transparency in operation and in rules to allow users and partners to trust the system.

The PSD system needs strong foundational partners that will in their part attract other smaller partners to the ecosystem. As the initial investment for new partners in the ecosystem is rather large, this model will work only in municipalities and cities where the population is large enough to attract businesses and organisations other than the city's own services.

Data-sharing Platform

One idea concerning the management of the ecosystem is to control and facilitate the sharing and reuse of data. Local authorities and companies release open data for people to use in a push to connect the city organisation and the citizens as in the Barcelona Digital City Plan. The role for local authorities is to create a platform for equal and substantial data sharing.

This gives the local government power to mandate the rules and regulations of the platform. It might limit the access for strategic actors like in Barcelona, where urban data can be accessed by companies which are members in a local entrepreneurial hub, ensuring that the open data benefits mostly local SMEs. Moreover, one could limit the data to companies which have a VAT code, for example, in the EU area. Big companies or outside-EU organisations could also access data, but, after a certain limit, it would cost them.

In Amsterdam, the city has utilised a decentralised data platform to encourage local operators towards circular economy. The city created an innovation platform called the Amsterdam Smart City (ASC) whose goal is to improve the functionality and sustainable economic growth of the Amsterdam metropolitan area. The ASC is a loose and vast community where the core team is formed by city officials and corporate members. This core team coordinates the efforts network of private companies, NGOs, scientific partners, and municipal organisations. This network has formed a platform where anyone can suggest new ventures and ideas to advance the network's goals.[84]

What should you do?

In order to fulfill the promises of the data platform approach, the city should push for universality of data not only in its own services but also with partners' services. The city needs to break the locks and silos of different departments and data structures and start to build a unified open-source platform by creating an operator network.


Amsterdam

Service as a Platform

One way for cities to manage their ecosystems is to create a unified task allocation platform to share knowledge and tasks to contractors and ecosystem partners. The city is in charge of planning the operation and leading the work, whereas the ecosystem companies work as "subcontractors". In this model, the municipal government will control the project and hold the responsibility for the results. This will be beneficial if the city government wants to hold more power over the ecosystem and, thus, make the partners work for them rather than work with them. This encourages competition among partners and should consequently create more affordable and effective solutions.

This service-dominant ecosystem management encourages to value co-creation and service platforms. It takes the Barcelona Decidim approach to the next level when citizens can take part in the execution of tasks and duties and, through these actions, participate in creating a new platform for municipal work.

A rough idea on what this task allocation platform could look like is the Espoo and Aalto University School as a Service model where ecosystems of academics, city organisation educational services, private businesses, and cultural creators all take a part in the value creation. The School as a Service model utilises the strengths and capabilities of different agents to create a multi-disciplinary, decentralised system for learning that is both more effective and affordable than a typical schooling system.

What should you do?

The task-allocation platform is a low-barrier entry for partners but requires initial investment from the platform owner. The frameworks and standards of operation need to be defined, and it might be beneficial to start with a limited set of end goals, like in the Espoo School as a Service model where the target was only a single upper secondary school in Haukilahti. It is easier to launch this kind of service in a targeted way to use as a proof-of-concept to other sectors of the city service ecosystem.

There are already established platforms for citizen engagement (e.g. Decidim in Barcelona), but no platform is yet to master the citizen activity. There are different task platforms in private use, like TaskRabbit in the United States, the United Kingdom, and Canada, but these platforms are more focused on private citizen task outsourcing rather than city-wide adoption. However, these private companies possess IP and knowledge on the building and adopting the task-allocation ecosystem.

Outsourced Contracts

Another solution possibility is that the city outsources duties for organisations to fulfill the needs of citizens. Like in Toronto, the Sidewalk Labs is a partner for the city to test new service model innovations in the Quayside neighbourhood. Sidewalk Labs is a subsidiary of Alphabet, the parent company of Google. The goal of the project is to improve the city infrastructure with the use of technological innovations and to find answers to the challenges regarding rising living expenses, movement, and energy usage.

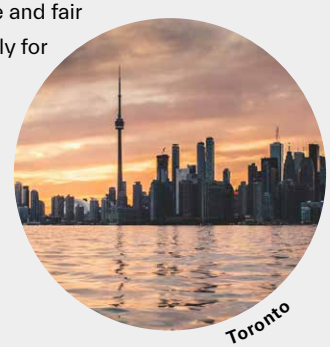
In this model, like in Toronto, the city held a bidding for the project and chose the provider that had the best offer. Thus, the city is more like a customer in the project, and Sidewalk Labs is the aggregator and prime contractor. This system gives the private company a larger control and responsibility of the use and gathering of data in this project and the local government has more of a laissez-faire approach to data.

Traditionally, the city has been focused on creating vertical, separate service streams for its citizens. In the Outsourced Contracts model, the city might start to shift its approach to more of a market research model. This means that the city's main duty is to aggregate its citizens' wants and needs and then trust the partner ecosystem to fulfill these.

What should you do?

The Outsourced Contracts model has low technical requirements for the city as the management happens more on defining citizen needs and creating public biddings for potential partners. It provides an attractive possibility to potential partners as the ecosystem is regulated and can be flexible to function to the needs of the city and the partner. However, the barriers for entry for partners can be rather steep and favor large established players.

The bigger role for the city is to build a platform for public engagement to find potential pain points of the citizens. The challenges lie in configuring the bottom-up needs of citizens with broader development areas of the city as-a-whole. After all city needs to make inclusive and fair decisions for all people, not only for a loud or active minority.



Toronto

ANNEX 4

Examples of different national contexts of local administrations

Roles of local administrations in the Netherlands, Spain, and Canada

	Amsterdam, The Netherlands	**Madrid and Barcelona, Spain**	**Toronto, Canada**
Statutory local self-government?	Yes	Yes (municipality is the basic unit of regional administration)	Yes
Municipalities have the right to collect taxes? (income tax, corporate tax, etc.)	Most of the revenue comes from government grants but the most important tax revenue category is local property taxes	Yes (about 50% of municipal income)	Direct taxes are the only source of income for the provinces, limited to property taxes at municipal level
Municipalities have significant statutory obligations to organise and/or provide services?	Schools and local healthcare including social services are under municipal responsibility; the municipality has a significant role in housing production	Less obligations than in other European countries: e.g. schools and healthcare belong to the regional level → municipal spending in Spain is approx. 6% of GDP, only half of EU average	Main services are under provincial responsibility (social services, education) but local cleanliness, transport, libraries, emergency care, etc. are municipalities responsibility
Representative democracy at the local level?	Yes	Yes	Yes
Broader participation (obligations/culture)	Legislation in this regard is fragmented, but inclusion is being invested in	Statutory at the regional level (Ley de Participación Ciudadana) but there are differences between municipalities; participatory culture is mainly based on the traditional role of the third sector	Little obligations; there are big differences in the practices of inclusion between municipalities
Municipalities have zoning monopoly? Municipalities are significant landowners?	Municipalities are responsible for local plans; large municipalities have significant land holdings	Zoning monopoly yes, but the regional government (Comunidad Autónoma) reinforces and directs provincial plans and so on	Municipal land-use control is done through a master plan and by-laws: municipal plans must be in line with provincial plans; Ontario Planning Act

Background information about the City of Barcelona, Spain

The Spanish government and political system

The current political system in Spain is a parliamentary constitutional monarchy and is based on the 1978 Constitution, which came to place after the transition to democracy in the late 1970s. The ruling monarch (currently King Felipe VI) is the official head of state and prime minister (currently Pedro Sánchez of the Spanish Socialist Workers' Party) acts as head of government. Executive power is held by the ruling prime minister, their deputy, and a Council of Ministers.

The national parliament is known as Cortes Generales and it consists of the upper house and lower house. The upper house is known as Senate of Spain, including 208 elected officials and 57 members appointed by the regional legislatures. The lower house is known as Congress of Deputies and has 350 members elected by the public. The parliament controls the actions of the government and has the power to approve budgets. The Congress of Deputies has more power and is able to approve or reject laws, initiate legislation, and vote the prime minister in or out. The Senate can veto legislation and has greater power regarding the autonomous communities at regional level. The judicial branch is an independent system of the government and the parliament.

Spain has been a member of the EU since 1986 and the monetary policy, competition legislation, customs and trade policy, and regulation comes from the EU decision-making. If the EU legislation is in conflict with national legislation, the regulation overrides national laws.

In addition to the central government, there are three other tiers of government in Spain: 17 regional autonomous communities, subdivided into 50 local provinces, which are then divided into municipalities. The regional level works in accordance to the parliamentary system, consisting of executive and legislative divisions, presidents as the highest representatives. The provincial government is administered by provincial council, for which the members are elected among the municipal council representatives by themselves. Local governments at the municipal level are formed of elected local councillors, who choose a mayor who appoints a board of governors. Neither the provincial government nor the local government has the power to draft major laws, but they can establish regulations based on the legislation from the central and regional parliament. Provincial governments ensure

the public service provision and coordinate the municipalities' collaboration. In the local level, municipality's duties include managing the local police, traffic policy, urban planning, social services, and local taxation. In terms of procurement, the principles and laws are based on national legislation, but the autonomous regions may develop their own rules. In 2018, the Public Procurement Law (PPL) was reformed for modernisation and adaptation to the European Directives on public procurement.

In Spain, there is a strong regional identity and organisation with emphasis on autonomy and self-governance. However, even with a highly decentralised political system, the central government has full sovereignty. Disputes regarding the power relations between central and regional government have been a dominating element recently in Spanish politics, especially in Catalonia, where large protests have taken place. The people are divided into groups of pro-independence and status quo with potential reviews on the model of autonomy (currently, the Basque Country has, for instance, more autonomy on taxation than Catalonia).

The role of the local Barcelona government in relation to the central and regional governments

The local, municipal level government is organised at the executive and the political level and includes three governmental bodies. The municipality is also divided into ten administrative municipal districts comprising 73 neighbourhoods.

THE POLITICAL LEVEL:

1. **The Municipal Council**
   - The highest political body
   - Includes thematic committees
   - Approves Municipal Action Plan, the Investment Plan, byelaws, and municipal budgets
2. **The City Government Commission**
   - Includes the mayor, deputy mayors, and councillors appointed by decision of the mayor
   - Exercises the municipal government initiatives by approving draft framework regulations, byelaws, the budget, and the Municipal Action Plan
3. **The Mayor**
   - Chairs the Municipal Council and the City Government Commission

THE EXECUTIVE LEVEL:

1. **The Municipal Manager**
   - Coordinates the municipal manager offices

2. **10 District Municipal Manager Offices**
   - Provide everyday municipal management to the city's 73 neighbourhoods

Duties and characteristics of different levels of government in Spain

	Barcelona municipality	Catalonia region	Spanish central government
Autonomy based on legislation	Yes	Yes	Yes
Can levy taxes	Yes (50% of the income of the municipality)	Yes	Yes
Services	**Health care and social services** ■ Health and hygiene ■ Cooperation in the management of public services **Education** ■ Management of local education system **Local police** **Less obligations than in other European countries** ■ Municipality expenses around 6% of GDP, which is around half of the EU average	**Health care and social services** ■ Health planning ■ Public health ■ Healthcare services management **Education** ■ Develop the state regulation and have executive and administrative competencies for managing the education system	**Health care and social services** ■ Basic health principles and coordination ■ Foreign health affairs ■ Pharmaceutical policy **Education** ■ General guidelines and regulation of basic elements for education (regions control their own systems)
Representative democracy	Yes	Yes	Yes
Monopoly on land use planning	Yes (within the limits of the regional framework)	Yes (within the limits of the national framework)	Yes (sets the framework for regional land use planning)

Background information about local administrations in Finland

The Finnish government and political system

The Finnish political system is a parliamentary representative democracy, a republic whose head of state is the president (currently Sauli Niinistö) who leads foreign policy. The head of government is the prime minister (currently Sanna Marin of the Social Democratic party), who leads the state's executive branch, the Finnish Government, comprising 90 organisations which include 12 ministries. Legislative power is held by the Parliament of Finland. The judiciary is independent of the executive and legislative branches.

Finland has been part of the EU since 1995 and the monetary policy, competition legislation, customs and trade policy, and regulation comes from the EU decision-making. If the EU legislation is in conflict with national legislation, the regulation overrides national laws.

Finland also has regional state administration and governance. Finland comprises 19 regions governed by regional councils coordinating the cooperation of municipalities within regions. The regional councils' tasks include regional planning, development of enterprise and education, and the health services. In addition, there are the seven Regional State Administrative Agencies in charge of public services and legal permits, and 15 Centres for Economic Development, Transport and the Environment responsible for the local administration of labour, agriculture, fisheries, forestry, and entrepreneurial affairs. Compared to the Spanish regional autonomous communities, the Finnish regions do not have autonomy (except the Åland Island) and representative democracy. The services and political decision-making are executed on the municipal level.

The 19 Finnish regions are divided into 311 municipalities (2019), governed by elected councils. The municipal councils are legally autonomous and have an executive branch called the municipal executive board, which drafts decisions for the council and monitors the implementation of the council's decisions. The councils have also thematic committees responsible for basic services. Unlike national cabinets, the municipal executive board is derived from the composition of the municipal council instead of government-opposition lines. Municipal managers or mayors (depending on how the position is set in the municipality) act as municipal managers and speakers of municipal councils.

Duties and characteristics

	Municipalities	Regions	Central government
Autonomy based on legislation	Yes	Based on municipalities' autonomy (Åland is the only region with autonomy)	Yes
Can levy taxes	Yes	No	Yes
Services	**Education and cultural services** **Health and social services** ■ Might be transferred to regions in regional social and health care reform but is to be determined in the future	**Regional development** **Regional land use planning** **Municipalities' joint services**	**National legislation** **Education** ■ Basic guidelines ■ Steering and supervision **Health care and social services** ■ Basic guidelines ■ Steering and supervision **Law enforcement**
Representative democracy	Yes	No (may change in the regional reform, TBD)	Yes
Monopoly on land use planning	Yes (within the limits of the regional framework)	Yes (within the limits of the national framework)	Yes (sets the framework for regional land use planning)

Background of Finnish cities' smart city development

The six largest cities of Finland have a joint strategy and resources for sustainable smart city and urban development. 6Aika is a strategic programme of the six cities of Helsinki, Espoo, Vantaa, Tampere, Turku, and Oulu. Together they aim to tackle the challenges of urbanisation and evolve towards smarter but inherently human-centric cities.

The basis of the Six City Strategy has been developed in three large-scale spearhead projects: Open data and interfaces, Open participation and customership, and Open innovation platforms. They have pushed forward the essential elements of the Finnish smart city model that are customer centered co-creation, opening and utilising data, and developing services in real urban environments.

The Six City Strategy has been used to start dozens of projects in urban development as well as the development of employment and competencies. The strategy has focused on projects related to smart mobility, learning, circular economy, and energy efficiency, among other topics.

The most important results of the Six City Strategy:

- Deeper and more systemic collaboration between the cities and companies
- A stronger developer network within and between the city organisation
- Strengthening the culture of innovation and collaboration between the public and the private sector
- Cities operating as platforms for collaboration with companies
- New tested operating models, platforms, and praxis for innovation policies
- Agile experimentation models scaled to different use cases

Learn more: https://6aika.fi/en/what-is-6aika/

Endnotes

1 Bibri, S. E., & Krogstie, J. (2017). Smart Sustainable Cities of the Future: An Extensive Interdisciplinary Literature Review. Sustainable Cities and Society, 31, 183–212.

2 Ibid.

3 Belanche, D., Casaló, L. V., & Orús, C. (2015). City Attachment and Use of Urban Services: Benefits for Smart Cities. Cities, 50, 75–81.

4 Angelidou, M. (2014). Smart City Policies: A Spatial Approach. Cities, 41, S3-S11.

5 High level here refers to low level of specialisation or focus on different sectors of city operations.

6 Hashem, I. A. T., Chang, V., Anuar, N. B., Adewole, K., Yaqoob, I., Gani, A., ... & Chiroma, H. (2016). The Role of Big Data in Smart City. International Journal of Information Management, 36(5), 748–758.

7 McLaren, D., & Agyeman, J. (2015). Sharing Cities: A Case for Truly Smart and Sustainable Cities. Cambridge, MA: The MIT Press.

8 Glaeser, E. L. (2011). Triumph of the City: How Urban Spaces Make Us Human. London, UK: Macmillan.

9 Bai, X., Dawson, R. J., Ürge-Vorsatz, D., Delgado, G. C., Barau, A. S., Dhakal, S., ... & Schultz, S. (2018). Six Research Priorities for Cities and Climate Change. Nature, 555, 23–25.

10 Both the Economist Intelligence Unit's Democracy Index and Freedom House's Freedom in the World indices register substantial net declines in the health of democracies worldwide.

11 Bradley, K. (2015). Open-Source Urbanism: Creating, Multiplying and Managing Urban Commons. Footprint, 91–107.

12 Sidewalk Labs (2018). Digital Skin Being Overlaid on Physical Layers of the City. Toronto Waterfront plan. https://www.sidewalktoronto.ca. VIewed on 03/04/2020.

13 Jacobs, J. (1961). The Death and Life of Great American Cities. New York: Random House.

14 Ibid.

15 Cf. Financial plans of the City of Espoo (available in Finnish). https://www.espoo.fi/fi-fi/espoon_kaupunki/paatoksenteko/talous/talousarvio. Viewed on 02/04/2020.

16 See e.g. Eurocities (2019). Interview with Paivi Sutinen, director for City as a Service Development in Espoo. http://www.eurocities.eu/eurocities/news/Interview-with-Paivi-Sutinen-director-for-City-as-a-Service-Development-in-Espoo-WSPO-B9THYX. Viewed on 02/04/2020.

17 Sutinen, P., & City of Espoo (2020). City as a Service model is based on Distributed Networks and Service Dominant Logic. Adapted from Baran, P. (1964). On Distributed Communications. Memorandum RM-3420-PR. Santa Monica, CA: The RAND Corporation.

18 City of Espoo (2016). School as a Service concept is the best Finnish school innovation. https://www.espooinnovationgarden.fi/en/espoo-innovation-garden/media/news/school-as-a-service-concept-is-the-best-finnish-school-innovation/. Viewed on 26/03/2020.

19 City of Espoo (2017). Espoo innovation School as a Service gains international recognition. https://www.espoo.fi/en-US/Childcare_and_education/Espoo_innovation_School_as_a_Service_gai(113490). Viewed on 02/04/2020.

20 Aalto University & City of Espoo (2016). https://www.espooinnovationgarden.fi/en/espoo-innovation-garden/media/news/school-as-a-service-concept-is-the-best-finnish-school-innovation/. Viewed on 03/04/2020.

21 Cf. City of Helsinki (2019). The Most Functional City in the World: Helsinki City Strategy 2017–2021. https://www.hel.fi/helsinki/en/administration/strategy/strategy/city-strategy/. Viewed 02/04/2020.

22 MyData Global (2018). MyData Declaration. https://mydata.org/declaration/. Viewed on 27/03/2020.

23 MyData Global (2018). MyData Declaration. https://mydata.org/declaration/. Viewed on 27/03/2020.

24 Ibid.

25 Cf. Malho, M., & Neuvonen, A., (2019). Universalism in the Next Era: Moving Beyond Redistribution. Helsinki: Demos Helsinki publications.

26 City of Helsinki (2017). Helsinki sitoutuu edistämään MyData-periaatetta palvelujensa uudistamisessa.

https://www.hel.fi/uutiset/fi/kaupunginkanslia/helsinki-sitoutuu-edistamaan-mydataa. Viewed on 20/03/2020.

27 Open Knowledge Finland ry (2017). Sähköinen asiointi ja henkilötieto. https://www.okf.fi/projects/mydata-helsinki/. Viewed on 02/04/2020.

28 Helsinki Region Infoshare (2018). What is HRI? https://hri.fi/en_gb/hri-service/what-is-hri/. Viewed on 22/03/2020.

29 City of Tampere (2019). Osallisuus- ja yhteisöllisyysmalli. http://tampere.cloudnc.fi/download/noname/%7Ba1cd4b41–53ef-4398–9317-a21375a91e12%7D/3251030. Viewed on 02/04/2020.

30 Adapted from City of Tampere (2019). Osallisuus- ja yhteisöllisyysmalli. http://tampere.cloudnc.fi/download/noname/%7Ba1cd4b41–53ef-4398–9317-a21375a91e12%7D/3251030. Viewed on 02/04/2020.

31 See ibid. p. 25–30.

32 City of Vantaa (2019). Elinvoima- ja vetovoimaohjelma 2019–2021. https://www.vantaa.fi/instancedata/prime_product_julkaisu/vantaa/embeds/vantaawwwstructure/145756_elinvoimaohjelma_2019.pdf. Viewed 02/04/2020.

33 Adapted from City of Vantaa (2019). Elinvoima- ja vetovoimaohjelma 2019–2021. https://www.vantaa.fi/instancedata/prime_product_julkaisu/vantaa/embeds/vantaawwwstructure/145756_elinvoimaohjelma_2019.pdf. Viewed on 02/04/2020.

34 Ibid.

35 Myyrmäki forum (2020). http://mahdollisuuksienmyrtsi.fi. Viewed 02/04/2020.

36 Elävä Tikkurila ry (2017). https://www.elavatikkurila.fi. Viewed 26/03/2020.

37 Photo by Harald Arlander on Unsplash.

38 For results of municipal elections, see e.g. El País (í2015). Upset victory in Barcelona by social activist weakens independence drive. https://english.elpais.com/elpais/2015/05/25/inenglish/1432541816_126570.html. Viewed 02/04/2020.

39 See e.g. Reuters (2015). Barcelona mayor's tourism crackdown puts Airbnb in firing line. https://www.reuters.com/article/us-spain-tourism-airbnb-idUSKCN0QV1LR20150826. Viewed 02/04/2020.

40 C40 (2014). Case Study: Barcelona's Smart City Strategy. https://www.c40.org/case_studies/barcelona-s-smart-city-strategy. Viewed 02/04/2020.

41 Fortune (2015). Barcelona: The most wired city in the world. https://fortune.com/2015/07/29/barcelona-wired-city/. Viewed 02/04/2020.

42 City of Barcelona (2015). Barcelona Digital City: Putting technology at the service of people (2015–2019). Barcelona: Ajuntament de Barcelona.

43 ITUNews (2018). How Barcelona's smart city strategy is giving 'power to the people'. https://news.itu.int/how-barcelonas-smart-city-strategy-is-giving-power-to-the-people/. Viewed 02/04/2020.

44 City of Barcelona (2015). Barcelona Digital City: Putting technology at the service of people (2015–2019). Barcelona: Ajuntament de Barcelona.

45 Nordic Smart City Network (2020). https://nscn.eu. Viewed 30/03/2020.

46 Nordic Smart City Network (2020). https://nscn.eu. Viewed 30/03/2020.

47 Anthopoulos, L., Janssen, M., & Weerakkody, V. (2016). A Unified Smart City Model (USCM) for Smart City Conceptualization and Benchmarking. International Journal of Electronic Government Research, 12.

48 Adapted from Yigitcanlar, T., Kamruzzaman, M., Buys, L., Ioppolo, G., Marques, J., Costa, E., & Yun, J. (2018). Understanding 'smart cities': Intertwining development drivers with desired outcomes in a multidimensional framework. Cities. https://doi.org/10.1016/j.cities.2018.04.003.

49 Gassmann, O., Böhm, J., & Palmié, M. (2019). Smart cities: Introducing digital innovation to cities. Bingley: Emerald Publishing.

50 Standard Eurobarometer (Spring 2018). One year ahead of the European elections, trust in the Union and optimism about the future is growing. https://ec.europa.eu/commission/presscorner/detail/en/IP_18_4148. Viewed 02/04/2020.

51 OECD (2017). Trust and Public Policy: How Better Governance Can Help Rebuild Public Trust. OECD Public Governance Reviews. OECD Publishing: Paris.

52 OECD/KDI (2018). Understanding the Drivers of Trust in Government Institutions in Korea. OECD Publishing: Paris.

53 OECD (2019). Government at a Glance 2019. OECD Publishing: Paris.

54 Furtado, F. (2017). Simulating Shared Mobility in Helsinki. LSE Business Review Blog.

55 Institute for the Future (2017). Universal Basic Assets: a manifesto for a more equitable future. Palo Alto, CA: Institute for the Future. https://www.iftf.org/uba/

56 City of Helsinki (2019). Helsinki invites cities to solve global problems together. https://www.signalsfromhelsinki.fi/en/news/helsinki-invites-cities-solve-global-problems-together. Viewed 02/04/2020.

57 Hagiu, A., & Wright, J. (2015). Multi-Sided Platforms. International Journal of Industrial Organization, 43, 162–174. 16.

58 "Direct interaction" means two or more distinct sides

retain some direct control (be they pricing, bundling, marketing and delivery of the goods or services traded, the ability to determine the nature and quality of services offered, the terms and conditions) over the

key terms of the interaction, as opposed to the intermediary taking full control of those.

59 Farrell, J., & Klemperer, P. (2007). Coordination and Lock-In: Competition with Switching Costs and Network Effects. Handbook of Industrial Organization, 3, 1967–2072.

60 Future Cities Catapult (2017). Global Review of Smart City Strategies. https://futurecities.catapult.org.uk/project/global-re- view-smart-city-strategies/. Viewed on 04/02/2020.

61 Ibid.

62 48. Nesta (2018). Reclaiming the Smart City: Personal Data, Trust and the New Commons. https://www.nesta.org.uk/report/reclaiming- smart-city-personal-data-trust-and-new-commons/. Viewed on 01/03/2020.

63 Ibid.

64 Bloomberg Associates (2018). Digital City Tools: Technologies cities use to interact with citizens. https://digitalcitytools.bloombergassociates.org. Viewed on 16/02/2020.

65 Ibid.

66 NYC City Comptroller (2018). The Impact of Airbnb on NYC Rents. https://comptroller.nyc.gov/reports/the-impact-of-airbnb-on-nyc-rents/.

Viewed on 01/11/2019.

67 Horn, K., & Merante, M. (2017). Is Home Sharing Driving Up Rents? Evidence from Airbnb in Boston. Journal of housing economics, 38, 14–24. 46.

68 McKinsey Global Institute. (2018). Smart Cities: Digital Solutions for a More Livable Future. https://www.mckinsey.com/~/media/mckinsey/ industries/capital%20projects%20and%20infrastruc- ture/our%20insights/smart%20cities%20digital%20 solutions%20for%20a%20more%20livable%20future/mgi-smart-cities-full-report.ashx. Viewed on 15/11/2019.

69 Hampshire, R. C., Simek, C., Fabusuyi, T., Di, X., & Chen, X. (2017). Measuring the Impact of an Unanticipated Disruption of Uber/Lyft in Austin, TX. https://ssrn.com/abstract=2977969; Henao, A. (2017). Impacts of Ride-sourcing – Lyft and Uber – on Transportation Including VMT, Mode Replacement, Parking, and Travel Behavior. www.alehenao.com; Rodier, C. (2018). The Effects of Ride Hailing Services on Travel and Associated Greenhouse Gas Emissions: A White Paper from the National Center for Sustainable Transportation. https://ncst.ucdavis.edu/wp-content/uploads/2016/07/NCST-TO-028-Rodier_ 50. Shared-Use-Mobility-White-Paper_APRIL-2018.pdf; Gouri, R. R., & Mishra, S. (2017). Disruptive Transportation: The Adoption, Utilization, and Impacts of Ride-Hailing in the United States. https://trid.trb.org/view/1485471.

70 US Securities and Exchange Commission (2019). Lyft filing for IPO. https://www.sec.gov/Archives/edgar/data/1759509/000119312519059849/ d633517ds1.htm.

71 Zuboff, S. (2016). The Secrets of Surveillance Capitalism. Frankfurter Allgemeine. http://www.faz.net/aktuell/feuilleton/debatten/the-digital-debate/shoshana-zuboff-secrets-of-surveillance-capitalism-14103616.html. Viewed on 11/03/2020.

72 Srnicek, N. (2017). The Challenges of Platform Capitalism: Understanding the Logic of a New Business Model. Juncture, 23(4), 254–257.

73 Edelman, B., Luca, M., & Svirsky, D. (2017). Racial Discrimination in the Sharing Economy: Evidence from a Field Experiment. American Economic Journal: Applied Economics, 9(2), 1–22.

74 Hajian, S., Bonchi, F., & Castillo, C. (2016). Algorithmic Bias: From Discrimination Discovery to Fairness-Aware Data Mining. Proceedings of the 22nd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, 2125–2126.

75 Zhu, F., & Liu, Q. (2016). Competing with Complementors: An Empirical Look at Amazon.com. Harvard Business School, Working Paper No. 15-044.

76 Wen, W., & Zhu, F. (2017). Threat of Platform-Owner Entry and Complementor Responses: Evidence from the Mobile App Market. Harvard Business School, Working Paper No. 18-036.

77 European Commission (2016). Results of the Public Consultation on the Regulatory Environment for Platforms, Online Intermediaries and the Collaborative Economy. Synopsis Report.

78 Pariser, E. (2011). The Filter Bubble: What the Internet is Hiding from You. New York, NY: The Penguin Press.

79 Yardi, S., & Boyd, D. (2010). Dynamic Debates: An Analysis of Group Polarization Over Time on Twitter. Bulletin of Science, Technology & Society, 30(5), 316–327.

80 Stieglitz, S., & Dang-Xuan, L. (2013). Emotions and Information Diffusion in Social Media – Sentiment of Microblogs and Sharing Behavior. Journal of Management Information Systems, 29(4), 217–248.

81 Zuiderveen Borgesius, F., Möller, J., Kruikemeier, S., Ó Fathaigh, R., Irion, K., Dobber, T., ... & de Vreese, C. H. (2018). Online Political Microtargeting: Promises and Threats for Democracy. Utrecht Law Review, 14(1), 82–96.

82 Sitra, The Finnish Innovation Fund (2018–2021). IHAN project. https://www.sitra.fi/en/topics/fair-data-economy/. Viewed on 03/04/2020.

83 Sitra, The Finnish Innovation Fund (2018). IHAN Blueprint. https://media.sitra.fi/2018/11/14144842/261018-ihan-blueprint-2.0.pdf. Viewed on 03/04/2020.

84 Circle Economy (2018). City-as-a-Service. https://www.circle-economy.com/news/city-as-a-service. Viewed on 03/04/2020.

BIBLIOGRAPHY

BIBLIOGRAPHY

Angelidou, M. (2014). Smart City Policies: A Spatial Approach. Cities, 41, S3-S11.

Anthopoulos, L., Janssen, M., & Weerakkody, V. (2016). A Unified Smart City Model (USCM) for Smart City Conceptualization and Benchmarking. International Journal of Electronic Government Research, 12.

Bai, X., Dawson, R. J., Ürge-Vorsatz, D., Delgado, G. C., Barau, A. S., Dhakal, S., ... & Schultz, S. (2018). Six Research Priorities for Cities and Climate Change. Nature, 555, 23–25.

Baran, P. (1964). On Distributed Communications. Memorandum RM-3420-PR. Santa Monica, CA: The RAND Corporation.

Belanche, D., Casaló, L. V., & Orús, C. (2015). City Attachment and Use of Urban Services: Benefits for Smart Cities. Cities, 50, 75–81.

Bibri, S. E., & Krogstie, J. (2017). Smart Sustainable Cities of the Future: An Extensive Interdisciplinary Literature Review. Sustainable Cities and Society, 31, 183–212.

Bloomberg Associates (2018). Digital City Tools: Technologies cities use to interact with citizens. https://digitalcitytools.bloombergassociates.org. Viewed on 16/02/2020.

Bradley, K. (2015). Open-Source Urbanism: Creating, Multiplying and Managing Urban Commons. Footprint, 91–107.

C40 (2014). Case Study: Barcelona's Smart City Strategy. https://www.c40.org/case_studies/barcelona-s-smart-city-strategy. Viewed 02/04/2020.

City of Barcelona (2015). Barcelona Digital City: Putting technology at the service of people (2015–2019). Barcelona: Ajuntament de Barcelona.

City of Espoo (2016). School as a Service concept is the best Finnish school innovation. https://www.espooinnovationgarden.fi/en/espoo-innovation-garden/media/news/school-as-a-service-concept-is-the-best-finnish-school-innovation/Viewed on 26/03/2020.

City of Espoo (2017). Espoo innovation School as a Service gains international recognition. https://www.espoo.fi/en-US/Childcare_and_education/Espoo_innovation_School_as_a_Service_gai(113490). Viewed on 02/04/2020.

City of Helsinki (2017). Helsinki sitoutuu edistämään MyData-periaatetta palvelujensa uudistamisessa. https://www.hel.fi/uutiset/fi/kaupunginkanslia/helsinki-sitoutuu-edistamaan-mydataa. Viewed on 20/03/2020.

City of Helsinki (2019). The Most Functional City in the World: Helsinki City Strategy 2017–2021. https://www.hel.fi/helsinki/en/administration/strategy/strategy/city-strategy/. Viewed 02/04/2020.

City of Helsinki (2019). Helsinki invites cities to solve global problems together. https://www.signalsfromhelsinki.fi/en/news/helsinki-invites-cities-solve-global-problems-together. Viewed 02/04/2020.

City of Tampere (2019). Osallisuus- ja yhteisöllisyysmalli. http://tampere.cloudnc.fi/download/noname/%7Ba1cd4b41–53ef-4398–9317-a21375a91e12%7D/3251030. Viewed on 02/04/2020.

City of Vantaa (2019). Elinvoima- ja vetovoimaohjelma 2019–2021. https://www.vantaa.fi/instancedata/prime_product_julkaisu/vantaa/embeds/vantaawwwstructure/145756_elinvoimaohjelma_2019.pdf. Viewed 02/04/2020.

Edelman, B., Luca, M., & Svirsky, D. (2017). Racial Discrimination in the Sharing Economy: Evidence from a Field Experiment. American Economic Journal: Applied Economics, 9(2), 1–22.

El País (i2015). Upset victory in Barcelona by social activist weakens independence drive. https://english.elpais.com/elpais/2015/05/25/inenglish/1432541816_126570.html. Viewed 02/04/2020.

Elävä Tikkurila ry (2017). https://www.elavatikkurila.fi. Viewed 26/03/2020.

Eurocities (2019). Interview with Paivi Sutinen, director for City as a Service Development in Espoo. http://www.eurocities.eu/eurocities/news/Interview-with-Paivi-Sutinen-director-for-City-as-a-Service-Development-in-Espoo-WSPO-B9THYX. Viewed on 02/04/2020.

European Commission (2016). Results of the Public Consultation on the Regulatory Environment for Platforms, Online Intermediaries and the Collaborative Economy. Synopsis Report.

Farrell, J., & Klemperer, P. (2007). Coordination and Lock-In: Competition with Switching Costs and Network Effects. Handbook of Industrial Organization, 3, 1967–2072.

Fortune (2015). Barcelona: The most wired city in the world. https://fortune.com/2015/07/29/barcelona-wired-city/. Viewed 02/04/2020.

Future Cities Catapult (2017). Global Review of Smart City Strategies. https://futurecities.catapult.org.uk/project/global-review-smart-city-strategies/. Viewed on 04/02/2020.

Gassmann, O., Böhm, J., & Palmié, M. (2019). Smart cities: Introducing digital innovation to cities. Bingley: Emerald Publishing.

Glaeser, E. L. (2011). Triumph of the City: How Urban Spaces Make Us Human. London, UK: Macmillan.

Gouri, R. R., & Mishra, S. (2017). Disruptive Transportation: The Adoption, Utilization, and Impacts of Ride-Hailing in the United States. https://trid.trb.org/view/1485471. Viewed on 02/04/2020.

Hagiu, A., & Wright, J. (2015). Multi-Sided Platforms. International Journal of Industrial Organization, 43, 162–174. 16.

Hajian, S., Bonchi, F., & Castillo, C. (2016). Algorithmic Bias: From Discrimination Discovery to Fairness-Aware Data Mining. Proceedings of the 22nd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, 2125–2126.

Hampshire, R. C., Simek, C., Fabusuyi, T., Di, X., &

Chen, X. (2017). Measuring the Impact of an Unanticipated Disruption of Uber/Lyft in Austin, TX. https://ssrn.com/abstract=2977969. Viewed on 04/03/2020.

Hashem, I. A. T., Chang, V., Anuar, N. B., Adewole, K., Yaqoob, I., Gani, A., ... & Chiroma, H. (2016). The Role of Big Data in Smart City. International Journal of Information Management, 36(5), 748–758.

Henao, A. (2017). Impacts of Ridesourcing – Lyft and Uber – on Transportation Including VMT, Mode Replacement, Parking, and Travel Behavior. www.alehenao.com. Viewed on 15/03/2020.

Helsinki Region Infoshare (2018). What is HRI? https://hri.fi/en_gb/hri-service/what-is-hri/. Viewed on 22/03/2020.

Horn, K., & Merante, M. (2017). Is Home Sharing Driving Up Rents? Evidence from Airbnb in Boston. Journal of Housing Economics, 38, 14–24. 46.

Institute for the Future (2017). Universal Basic Assets: a manifesto for a more equitable future. Palo Alto, CA: Institute for the Future. https://www.iftf.org/uba/. Viewed 02/04/2020.

ITUNews (2018). How Barcelona's smart city strategy is giving 'power to the people'. https://news.itu.int/how-barcelonas-smart-city-strategy-is-giving-power-to-the-people/. Viewed 02/04/2020.

Jacobs, J. (1961). The Death and Life of Great American Cities. New York: Random House.

Malho, M., & Neuvonen, A., (2019). Universalism in the Next Era: Moving Beyond Redistribution. Helsinki: Demos Helsinki publications.

McKinsey Global Institute. (2018). Smart Cities: Digi-

tal Solutions for a More Livable Future. https://www.mckinsey.com/~/media/mckinsey/industries/capital%20projects%20and%20infrastructure/our%20insights/smart%20cities%20digital%20solutions%20for%20a%20more%20livable%20future/mgi-smart-cities-full-report.ashx. Viewed on 15/11/2019.

McLaren, D., & Agyeman, J. (2015). Sharing Cities: A Case for Truly Smart and Sustainable Cities. Cambridge, MA: The MIT Press.

MyData Global (2018). MyData Declaration. https://mydata.org/declaration/. Viewed on 27/03/2020.

Myyrmäki forum (2020). http://mahdollisuuksienmyrtsi.fi. Viewed on 02/04/2020.

Nesta (2018). Reclaiming the Smart City: Personal Data, Trust and the New Commons. https://www.nesta.org.uk/report/reclaiming-smart-city-personal-data-trust-and-new-commons/. Viewed on 01/03/2020.

Nordic Smart City Network (2020). https://nscn.eu. Viewed on 30/03/2020.

NYC City Comptroller (2018). The Impact of Airbnb on NYC Rents. https://comptroller.nyc.gov/reports/the-impact-of-airbnb-on-nyc-rents/. Viewed on 01/11/2019.

OECD (2017). Trust and Public Policy: How Better Governance Can Help Rebuild Public Trust. OECD Public Governance Reviews. OECD Publishing: Paris.

OECD/KDI (2018). Understanding the Drivers of Trust in Government Institutions in Korea. OECD Publishing: Paris.

OECD (2019). Government at a Glance 2019. OECD Publishing: Paris.

Open Knowledge Finland ry (2017). Sähköinen asiointi ja henkilötieto. https://www.okf.fi/projects/mydata-helsinki/. Viewed on 02/04/2020.

Pariser, E. (2011). The Filter Bubble: What the Internet is Hiding from You. New York, NY: The Penguin Press.

Reuters (2015). Barcelona mayor's tourism crackdown puts Airbnb in firing line. https://www.reuters.com/article/us-spain-tourism-airbnb-idUSKCN-0QV1LR20150826. Viewed on 02/04/2020.

Sidewalk Labs (2018). Toronto Waterfront plan. https://www.sidewalktoronto.ca. Vlewed on 03/04/2020.

Sitra, The Finnish Innovation Fund (2018–2021). IHAN project. https://www.sitra.fi/en/topics/fair-data-economy/. Viewed on 03/04/2020.

Standard Eurobarometer (Spring 2018). One year ahead of the European elections, trust in the Union and optimism about the future is growing. https://ec.europa.eu/commission/presscorner/detail/en/IP_18_4148. Viewed on 02/04/2020.

Stieglitz, S., & Dang-Xuan, L. (2013). Emotions and Information Diffusion in Social Media – Sentiment of Microblogs and Sharing Behavior. Journal of Management Information Systems, 29(4), 217–248.

Rodier, C. (2018). The Effects of Ride Hailing Services on Travel and Associated Greenhouse Gas Emissions: A White Paper from the National Center for Sustainable Transportation. https://ncst.ucdavis.edu/wp-content/uploads/2016/07/NCST-TO-028-Rodier_Shared-Use-Mobility-White-Paper_APRIL-2018.pdf. Viewed on 03/04/2020.

Srnicek, N. (2017). The Challenges of Platform Capitalism: Understanding the Logic of a New Business Model. Juncture, 23(4), 254–257.

US Securities and Exchange Commission (2019). Lyft filing for IPO. https://www.sec.gov/Archives/edgar/data/1759509/000119312519059849/d633517ds1.htm. Viewed on 02/04/2020.

Wen, W., & Zhu, F. (2017). Threat of Platform-Owner Entry and Complementor Responses: Evidence from the Mobile App Market. Harvard Business School, Working Paper No. 18-036.

Yardi, S., & Boyd, D. (2010). Dynamic Debates: An Analysis of Group Polarization Over Time on Twitter. Bulletin of Science, Technology & Society, 30(5), 316–327.

Yigitcanlar, T., Kamruzzaman, M., Buys, L., Ioppolo, G., Marques, J., Costa, E., & Yun, J. (2018). Understanding 'smart cities': Intertwining development drivers with desired outcomes in a multidimensional framework. Cities.

Zhu, F., & Liu, Q. (2016). Competing with Complementors: An Empirical Look at Amazon.com. Harvard Business School, Working Paper No. 15–044.

Zuboff, S. (2016). The Secrets of Surveillance Capitalism. Frankfurter Allgemeine. http://www.faz.net/aktuell/feuilleton/debatten/the-digital-debate/shoshana-zuboff-secrets-of-surveillance-capitalism-14103616.html. Viewed on 11/03/2020.

Zuiderveen Borgesius, F., Möller, J., Kruikemeier, S., Ó Fathaigh, R., Irion, K., Dobber, T., ... & de Vreese, C. H. (2018). Online Political Microtargeting: Promises and Threats for Democracy. Utrecht Law Review, 14(1), 82–96.