



# Making Cities Smarter: Which Work Practices Are Needed To Drive Smart City Transformation?

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# **Making Cities Smarter: Which work practices are needed to drive smart city transformation?**

## **Abstract**

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Smart City Managers (SCMs) need to perform institutional work to drive change in their cities. Institutional work emphasizes the role of human behavior to change the institutional environment (DiMaggio, 1998). Smart city officials performing institutional work try to unite people around a shared vision, motivate them to participate and cooperate to address common challenges. They have the responsibility to initiate and implement work practices and act like institutional entrepreneurs, innovators or change agents. Which specific types of institutional work practices are necessary to change institutions towards smart city transformation is topic of this article.

## **Context**

The term smart city refers to city's commitment and related efforts to become fit for the future in areas such as governance, human capital, economy, healthcare, environment or living (Lombardi, Giordano, Farouh, & Yousef, 2012). Cities rapidly become an important area of investigation (Mora, Bolici, & Deakin, 2017). The majority of literature, however, focuses on digitalization and technological aspects in government per se. Little amount of research emphasizes work practices that drive smart city transformation. Accordingly, questions must be asked how SCMs can foster innovation within their cities to become smarter - to develop towards better places of living, working, studying and having fun (Lara, Moreira Da Costa, Furlani, & Yigitcanlar, 2016).

Major obstacles for smart city transformations are institutional settings (Schedler, Guenduez, Frischknecht, 2019). To change these taken for granted practices and norms, institutional work must be applied to initiate change. Institutional work accounts for actors' purposive actions intended to create, maintain, and disrupt institutions (Lawrence & Suddaby, 2006). It is composed of several aspects. Integral parts are mobilization activities like the activation of financial resources or tactics to justify and legitimize change of existing practices.

## **Method**

As part of a qualitative multiple case study expert interviews with SCMs were conducted. The 40 selected interviewees are public servants with insights into the smart city transformation of leading smart cities around the globe partially listed on the Smart City Index (2019). The evaluation of the interviews was carried out in a three-stage process, to collect data on concepts, activities and practices to make cities smarter. In line with Saldaña (2013) the analysis involved continuous iterations between data and institutional work theory identified in the literature.

## **Which work practices drive smart city transformation?**

Below, a detailed enumeration of seven work practices of SCMs aimed at driving smart city transformation is presented. The results simultaneously offer practical implementations SCMs might perform to make their cities smarter.

### **Encouraging Innovation**

Public administrations are by nature not the most innovative organizations. Therefore, SCMs should create and foster conditions for innovation. For example, SCMs can actively present their innovative ideas and smart city projects. Ensuring innovation through inspiring actions should be another key activity. SCMs could contribute to hackathons, living labs, or innovation hubs. Resulting collaborations with third party companies or start-ups will further accelerate innovation towards smart city transformation and might help to overcome rigid structures.

### **Collaboration for Innovation**

Collaboration is a precondition for innovation and smart city transformation. To accomplish this, partnerships inside and outside the city government are key. To build strong relationships with external partners, SCMs should create collaborative networks to develop new projects, products and smart city services. Furthermore, they should engage at smart city conferences and exchange best practices with other managers.

Within the city, organizational silos must be eliminated. This will facilitate the interaction between public servants and foster better cooperation between departments. To achieve this, SCMs should promote cross-functional project teams and take a mediating role to bring people together.

### **Placing Citizen at the core**

Citizens should play a central role in SCMs' work. Maintaining personal contact through direct feedback or social media helps to identify citizen's sentiments and consequently to understand citizens' needs. Here, participatory mechanisms such as online platforms or workshops can further facilitate the involvement of citizens.

To become smart, interaction with citizens should be as easy as possible. Rethinking and re-designing administrative processes and services from a citizen or business perspective helps to meet this aim.

### **Relying on data-driven governance**

Data is one of the foundations of smart cities. SCMs have to make use of innovative ICT technologies and the data they generate. The first component encompasses the creation of physical and digital infrastructure required to collect, store, analyze and share data. However, setting up a functioning infrastructure is not sufficient to guarantee usage for public servants and citizens. Encouragement and awareness must be given to make use of the collected data. SCMs must continuously promote the collection and exchange of data across departments while keeping the challenge to ensure data privacy of citizens in mind.

### **Resources as enabler of smart city transformation**

Other conditions for smart city transformation are sufficient resources. Financial and human resource availability determines project's implementation. To ensure sufficient resources, SCMs need to gain support among local constituencies, citizens, public officials, and private businesses. This will reduce resistance and doubts, for example, if the benefits of projects for the smart city transformation are questioned.

### **New skills as accelerator of smart city transformation**

Public servant's skills and competencies affect smart city transformation. Until now, public administrations lack the necessary skills. In particular, agile project management skills, leadership skills, analytical skills, self-organization skills, communication skills, but also IT-related skills are essential to meet the challenges of smart city transformation. The task for SCMs is to build up an appropriate mix of these competencies. Here, problems in recruitment of qualified workers might occur. Therefore, continuous learning and training while rewarding creative thinking among public servants are key to acquire lacking skills.

Besides, new methods and approaches might accelerate transformation. Introducing agile methods could break down deeply ingrained risk-averse attitudes and strengthen administrations capability to adapt to change.

### **Creating a shared vision**

SCMs must create a shared understanding of smart city transformation. A concrete implementation roadmap generates a common understanding of the goals within and outside the administration. In case of questions, a shared strategy defends the necessary initiatives and investments the city intends to make in the transformation process. To avoid further doubts, SCMs must gain legitimacy and raise awareness of smart city projects among local constituents.

## **Theoretical & practical implications**

### **1) Square work practices with given proposals**

The above described institutional work practices are key elements to enable smart city transformation. Public servants tasked with smart city transformation are encouraged to consult and align their existing work practices with the presented insights to enhance current developments.

### **2) Pay equal attention to all aspects**

Smart city transformation is closely linked to SCMs encouragement and collaboration for innovation. In addition, dealing with new technologies and data is an essential aspect of their work. Managers therefore, must consider both the technology and the human aspect of smart cities equally to create innovation and transformation within cities.

## **Key Points**

Institutional work practices are an integral part of SCMs to transform cities. Therefore, SCMs need to act as institutional entrepreneurs to change standard operating procedures, norms and barriers standing in the way of successful smart city transformation. They need to perform a wide repertoire of institutional work, varying from capability building work to legitimacy work. Additionally, new forms specific to SCMs institutional work practices like innovation work, citizen centricity work and technology and data utilization work are identified. How these work practices influence outcomes of smart city has not yet been investigated and could be the subject of further research.

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