

Technology is not enough to create connected cities - here's why

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The [United Nations \(UN\)](#) estimates that by 2050, 66% of the world's population will live in cities. This creates an unprecedented pressure on cities around the world to optimise the standard of living for citizens, organisations and institutions.



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Cities such as [Dubai](#), [Singapore](#), [Yinchuan](#) and [Copenhagen](#) are experimenting with new technology and digital services to target specific problems that affect their citizens. Copenhagen, for example, has set the target of becoming the first [carbon neutral capital by 2025](#). The city [reduced](#) CO2 emissions by 38% between 2005 and 2015.

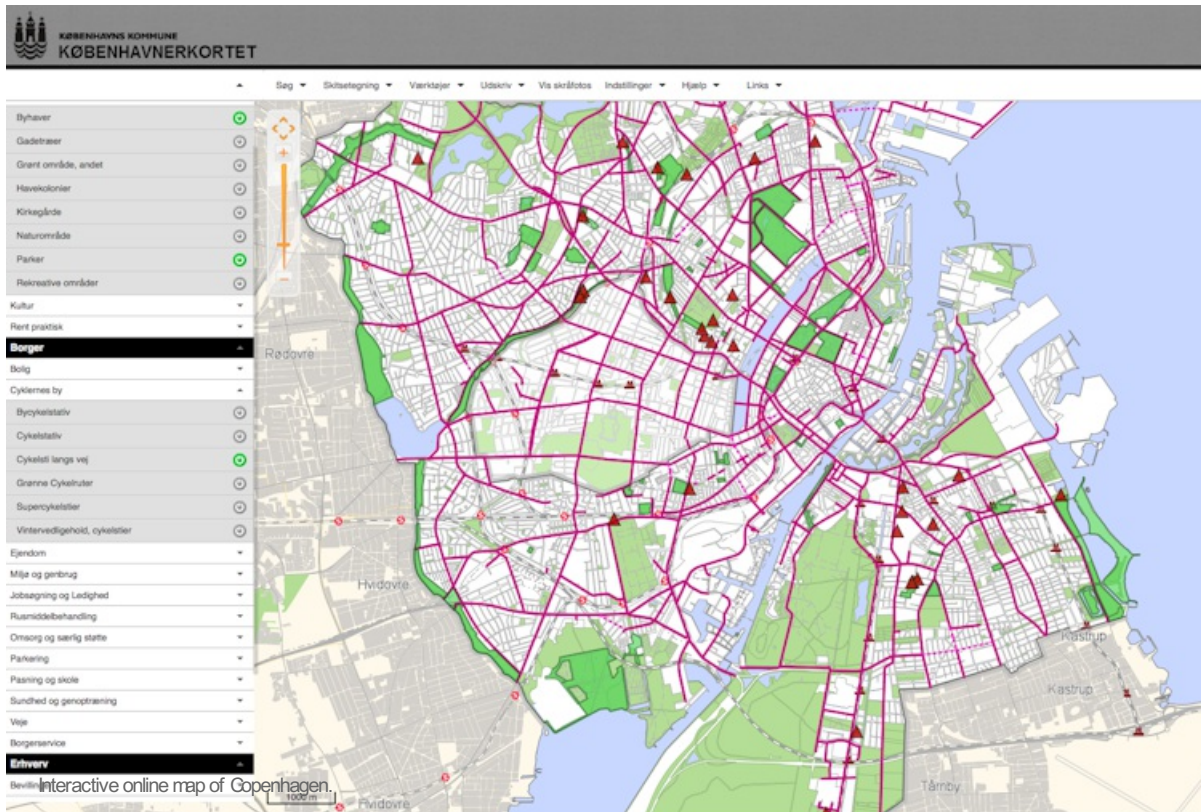
As part of a wider research project, we conducted research with the [team](#) at [Copenhagen Solutions Lab](#) (CSL), Copenhagen's innovative incubator for driving smart city initiatives.

Our research reveals that, although technology is important to the development of connected cities, there are other "softer" drivers at play, too – and we identified three that are critical to the success of future connected cities.

1. Citizen empowerment

The role of citizens in cities is changing. Many citizens no longer wish to be passive consumers directed by the city, but instead want to be [empowered](#) and active participants in the exchange of services between the city, suppliers and communities. Technology is already assisting citizens to get involved with the provision of key services, such as gas and electricity, transport and waste collection. However, we believe that increasingly, city-based services will need to adapt to become transparent, empowering and citizen-driven to meet the needs of communities and individuals.

A recent initiative launched by the Danish Technical & Environment Department, one of CSL's partners, encouraged citizens to provide feedback on how to improve cycling paths in the city. Citizen feedback was given via the [interactive online map of Copenhagen](#). In the first 12 days, [10,000 recommendations](#) were submitted. This information is now being used to develop the 2017-2025 strategy for cycle path infrastructure. This is a good example of how empowering citizens with the ability to engage can help the city to better plan its infrastructure.



In future, citizens will want to drive new ways of interacting with and consuming city services by being actively involved. Therefore, providers of these services need to enable the public to contribute and create more individualised solutions in a citizen-friendly way.

2. Open and experimental collaboration

Truly open collaboration between incubator units and various organisational and citizen partners will be the [hallmark](#) of successful connected cities. However, in reality, creating effective collaborations is incredibly hard to do. We need a new and different type of collaborative ethos.

[Marius Sylvestersen](#), the smart city programme manager at CSL, explains that collaborations must be built on transparency, the willingness to share data and must be driven by the same set of values. This requires a particularly open mindset from the organisations that wish to get involved.

To facilitate open collaboration and knowledge-sharing, CSL launched [Copenhagen Street Lab](#) in 2016. Here, organisations such as TDC, Hitachi, Citelum and Cisco work in collaboration with CSL to identify new solutions to city and citizen problems.

The lab tests solutions that can personalise citizens' experiences and provide real-time data to facilitate responsive governance. Real-time and personalised parking information is one solution that is currently being explored. CSL and partners, such as the Technical & Environment Department, are keen to find a way to use vacant parking spaces on an on-demand platform, where residential permit holders can release their spaces for others when not in use. This would reduce the amount of traffic searching for parking and optimise overall traffic flow.

Perhaps the most important role of the lab is to test the viability of systems for implementation within existing city infrastructure. Hence, it provides proof-of-concept prior to scaling to other parts of the city. The organisations that use the Street Lab to experiment and test new ideas benefit from interacting with other innovators within and outside their own industry. This provides ongoing learning and insight into new solutions.

There is innovation and knowledge-sharing taking place at [Bloxhub](#), a new non-profit member association, which brings together individuals and organisations at the intersection of architecture, design, construction and digitalisation. Located in the [historic part](#) of Copenhagen, organisations based on these cobbled streets are now leading the way to rethink city life.

New streams of knowledge flow into CSL via the [industrial PhD programme](#). Here PhD students spend half their time with CSL and the other half at university, researching an area related to connected cities. These initiatives create avenues for many new collaborative partnerships.

3. Rewarding the intangible

We believe that the success of connected cities will also rely on organisations adopting a new mindset whereby suppliers, service providers, partners and other contributors break free from a profit-driven way of operating to embrace a model of collective equity. For example, connected city partners, such as [Hitachi](#), [TDC](#), [Cisco](#) and [Citelum](#), work in collaboration to gain rewards that extend beyond simple financial profit.

CSL encourages partners to value expertise, knowledge, relationships and joint innovation as equally rewarding as profit for their organisations. This includes rewarding employees for their ability to collaborate, adopt demand-led innovation and create new long-term, value-based partnerships.

In cities, these new innovations and collaborations will increasingly be enabled by the presence of large-scale data sets. In Copenhagen, for example, the [world's first](#) city data marketplace for the purchase and sale of data was established as a Public-Private Innovation Partnership with Hitachi, the City of Copenhagen and Capital Region in 2016. [The City Data Exchange](#) (CDE), as it is called, was initially populated with existing data held by the city's open data platforms. Now, organisations are also encouraged to sell their data via the platform.

With this data, organisations can drive innovation, establish new partnerships and capitalise on new opportunities. But a different remuneration and rewards strategy is needed that will encourage employees to dedicate time and effort to pursue these more intangible and embryonic opportunities. This in return can help organisations to attract new talent and contribute to expanding its networks and collaborative initiatives.

Great innovation is taking place in Copenhagen and other cities around the world to create more connected and optimised citizen experiences. Although technology is often seen as the main engine for these city overhauls, it is equally important to look after the “softer” drivers of connected cities – empower citizens, create open and experimental collaborations and identify new strategies for rewarding less profit-driven achievements.

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