On the rhetoric of co-creation in smart cities

Smart city is a buzz word we have been hearing a lot over the past decade. With the booming urbanization, cities are competing in the use of information and communication technologies in order to deliver services in an easy and efficient manner to their citizens. Millions of euros have been put into research and innovation surrounding smart cities, but we still don't know what differentiates a good initiative.

While we shape up visions of our cities of the future every year, the greatest barrier doesn't seem to be the technology per se. As the CTO of New York City points out, two of the 3 main barriers to realizing these visions are human factors, namely buy-in and collaboration. Therefore, cities are realizing they also need to be competing in innovating new services while trying to excel in citizen engagement. The co-creation of smart city services with citizens and other relevant actors has taken up many different forms and approaches. Some cities do it directly with its citizens, while others open calls for funding third-parties to experiment and collaborate with the respective citizens.

Based on my involvement in a smart city project that combines these approaches, OrganiCity, I have observed and studied a variety of early smart city innovations that included at least one component of such co-creation. During those co-creation encounters, different challenges arise due to the nuances associated with contexts specific to each group of stakeholder. For instance, the public authorities' motivations for engagement were typically quite different from those of individual citizens, NGOs or small private companies.

So it took me back 24 centuries to reflect on the oldest strategies used to persuade or impress in human-centered interactions. Aristotle wrote one of the earliest pieces on rhetoric that goes by the same name. Rhetoric describes the three main persuasive strategies: Pathos, Logos, and Ethos. However, Aristotle not only described the three main strategies, but praised the faculty of observing which strategy, and in turn all available means, in the given case works best at persuasion. In this post, I will briefly go through each strategy and in which co-creative activity it emerges most prominently.

Pathos

Pathos is the interaction strategy that relies mainly on emotion. This strategy manifests itself mostly when the service provider co-creates a service with its intended users. In the context of smart cities, relying on pathos implies developing services that take users' values and emotions at

the core. Being able to capture those values and emotions is difficult without actually co-creating the services with those citizens and sharing an understanding in such co-creation activities. Also, manifesting those values in the developed service and appealing to the user's emotions makes a capturing user experience and a drive to continue using the service.

Relying more and more on data-driven services in smart cities makes realizing this strategy trickier. During the course of the project, it was evident that the more successful co-creation interactions with individuals were those who were able to create a service experience that both collected the data needed along with enabling the user to express themselves (i.e. entangles with emotion). For example, one of the innovations, TranquilCity, successfully collected data that helps them define tranquility through photos that citizens felt captured tranquil spaces and uploaded on Instagram. This is especially relevant when working with vulnerable groups of citizens. Both Colour-in City and MobiliCity innovations worked with vulnerable citizens, and thought appealing to their users' emotions and expectations was very necessary.

Building on pathos has its implications for value co-creation in service innovation. While non-economic value is harder to conceptualize and measure, it is indeed necessary when studying individual service beneficiaries.

Logos

Cities and public authorities, on the other hand, have different objectives such as economically and sustainably managing a city and providing services to its citizens. To achieve those objectives, they need to base their actions on hard evidence and logic, rather than individual/group values and emotions. Research, reports, and task forces used to form these evidences. Nowadays, these

cities and public authorities can be shown data that has previously been only accessible to them – urban sensory data are now easy and cheap to collect, and ICT is making it ever so convenient to analyze and make a case using such data.

Many of the experimental service innovations funded by OrganiCity had to function as a platform, serving two sides of their respective market. Siidi is one of those examples where the citizens opinions and visions are shared via their own mobile application and the aggregate data is shared with the city of Aarhus for more informed decisions. Accordingly, the service designers behind Siidi had to attend to the citizens' needs relying mainly on pathos, while simultaneously co-creating their service with the city of Aarhus and their partners relying on hard evidence and logic manifested in the collected datasets.

And that is what Logos in smart cities is all about: using urban data that could be used as catalysts for informing, changing and/or streamlining services currently offered by cites and public authorities. Whether the data is presented in reports or more optimal services are built and showcased around it, it makes a compelling case with such group of stakeholders: cities, public authorities, sponsors, or future partners to the service developers. Building on logos has its implications on the sustainability of cities, their administrations and the services offered since it mainly tackles the buy-in and collaboration challenges early on in the process.

Ethos

Ethos is relying on credibility and trustworthiness between parties in an interaction. Trust has been researched extensively in information systems research in the context of adopting new technologies. It is considered as a crucial precursor of success in IT projects and innovations. This strategy was also evident in OrganiCity, where experimentation and innovation are grounded in the

shared trust between different systems within the smart city ecosystem. This can be seen in the co-creation of the innovations which was possible thanks to the working relationship between the project consortium and service designers, developers and partners experimenting in the cities. It is also grounded in the freedom and flexibility of working methods that is a consequence of those shared values and trust. Without this trust and flexibility, experimentation would not be possible. Building on ethos has its implications for service ecosystems in smart cities, and the dynamics of innovations between stakeholders that are neither cities nor citizens themselves.

Even though I discuss the three strategies separately, they often overlap and two or more may be used simultaneously. Citizen engagement has been a priority in the development of sustainable smart cities and communities in Europe, and more so in the Nordic region. Yet, we lack knowledge and practical methodologies for inclusive design when it comes to data-intensive applications, IoT and big data solutions in the public spaces. This piece provides initial thoughts on the possible interactions in co-creating smart city solutions, and strategies of persuasion herein.

Having said that, it is important to exercise caution in these interactions, and aspire to strike the right balance between that openness to foster innovation and the opposing tensions of control from solution providers, especially city management. Any digital innovation comes with its risks and inherent ethical issues, thus building experimentation platforms for smart city co-creation must ensure that those risks are outlined and mitigated if possible.