

# Power relations and smart technologies

*Interview with Francisco Klauser  
Full professor, Chair in political geography,  
Geography Institute, University of Neuchâtel*

## 1. HOW HUMANS FIT IN WITH TECHNOLOGY

A smart city is one “that employs and incorporates automated and interconnected technologies”. Such “smart” technologies rely more on software than hardware. In other words, a number of algorithms will gather and analyse a certain dataset in accordance with predefined criteria. Based on that information, a response, a reaction or access (to services or to a site, for example) will be triggered or approved. It is also crucial to point out that these technologies are interconnected, meaning they systematically communicate with each other based on a human-designed blueprint.

As a result, a “sociotechnical” approach to this issue shows that, for smart cities, both humans and technological tools are involved at every level. In other words: “where there is technology, there have to be humans”. We can only determine whether a given technology is beneficial or problematic by assessing the interaction between these two worlds.

Let’s take a motorway as an example. Our motorway is equipped with a series of sensors and measurement equipment – from exhaust sensors in tunnels to speed cameras – able to collect huge amounts of data. But these data are then viewed and processed by operators working at a control centre, whose task it is to determine what actions to take and which process to follow. In reality, human involvement occurs further upstream, when the new technological system is acquired and installed; just think, for example, about all the decisions that go into determining the technical specifications of a new CCTV camera and where it should be located. And before the system is installed, the people in charge of designing and selling it also have to select which algorithm to use in their product. In view of these many touch points, we can safely posit that smart technology consists of both human and non-human variables. This means that when we discuss these technologies, we cannot look only

at the object itself; rather, we must consider how it fits into the broader context. That is the only way we can assess how effective it is.

So it is crucial to understand that even if the algorithms are used to automate the management of day-to-day practices and processes, they are no more objective than if the same task had been given to a human located on site. The truth is that one of the main impacts of the introduction of algorithms has been to shift decision-making authority in both time and space. Decisions are now taken earlier on and by a coder, rather than on the spot and in real time by a regulatory agent (such as a police officer). The underlying risk of this shift is that the decisions involved in managing our daily lives are taken outside our collective control and are not subject to individual analysis. You can try explaining things to a law enforcement agent, but you would not dream of pleading your case to an algorithm.

This observation shows that democratic debate and our ability to engage in practical and individual resistance in our everyday lives could be jeopardised. Decisions would become more opaque, even though the issues at stake are inherent to any democratic society. The proportionality and relevance of the power of algorithms is another critical question. Is it fair to assume that whatever is acceptable and relevant in Singapore, Beijing, Tokyo and New York is also necessarily acceptable and relevant in Geneva, Bern or Neuchâtel? The uniqueness of each city must be taken into account to avoid simply duplicating predefined, standardised algorithmic solutions.

## 2. IS TECHNOLOGY A PANACEA OR AN INSTRUMENT OF TOTAL CONTROL?

First, one must not forget that smart technologies are fundamentally fragile: they can crash, be hacked and contain coding errors. We must also understand that they are not good or bad in and of themselves; rather, they can be more or less beneficial or problematic for the communities concerned depending on how they are used. The targeted use of technology can make our lives more comfortable and help us lead more sustainable lives on a daily basis, such as by making the most efficient use of

certain resources. Yet smart technologies can also have a harmful effect if they are used to oppress, subjugate, exclude or discriminate against people. In this latter respect, we simply need to look at totalitarian countries as examples.

There is a fine line between positive and negative influence, since the add-on “smart” – e.g. smartphone, smart city and smart farming – always implies surveillance. That is because “smart” is linked to collecting, compiling, analysing and cross-indexing people’s data. A mobile phone is smart because it tracks our movements, activities, interests and preferences and can then combine these and other data to provide us with relevant information. If I’m looking for a restaurant in Paris, for example, Google will recommend somewhere based not only on my location, but also on other restaurants I have been to.

## 3. TECHNOLOGICAL SOLUTIONISM?

We began using smart technologies more and more in our daily lives as a result of the Covid-19 restrictions. For example, tracing apps were created to curb the spread of the virus, and drones were sent into the skies above some French cities to detect gatherings of people. I don’t find this surprising. The initial reaction to any crisis is usually to put very stiff controls in place, bringing things to a halt; we saw this, for example, when various countries closed their borders. Technology can then be used to manage such situations in a differentiated manner, with certain groups allowed to move around more than others. To put it differently, a system of regulation can be made more flexible and granular with technology, so that specific forms of travel can again take place. This process of opening up again is gradual and limited – and it has a cost: our data are required, giving access to our private lives.

Figure 1.



One of my concerns with this process is its legacy, i.e. the long-term effects of the systems put in place. When we employ specific instruments to manage a crisis situation, we should also be able to return

to how things were once the situation has been resolved. It is then that we need to evaluate the long-term pros and cons of using those tools and consider their proportionality and relevance once the crisis has ended. As it turns out, however, once a technological measure is introduced, it tends to stick around: since launching it implied a cost, whether political or monetary, making it obsolete could be seen as a step backwards.

The cost of these technologies is indeed a major issue, as we can demonstrate by looking at the British and Swiss approaches to video surveillance. In the UK, between 2000 and 2010, three quarters of the crime prevention budget was allocated to CCTV infrastructure. This led to a decrease in the number of police officers, in order to offset the cost of investing in these cameras. The opposite happened around 15 years ago in Zurich’s Langstrasse neighbourhood. Although politicians had set aside money to install CCTV cameras, the police preferred to maintain their physical presence, as they did not want to reduce their numbers and undermine the community policing strategy that they had developed in previous years. This example points to the numerous decisions and the deeply political dynamics involved in delegating control to a technological system.

Going one step further, when new technological systems are imposed from the top, the people themselves are not likely to buy in. The video surveillance example is again instructive: rather than simply installing new CCTV cameras in a neighbourhood, a good compromise could be found by establishing a dialogue with residents and other stakeholders. This compromise should make everyone feel they are involved in the chosen solution and ensure that people understand that system, see how it is relevant and, possibly, contribute to it in some way. Such an approach would lead people to be more accepting of the presence of CCTV, and this would bolster this technology’s reassuring effect over the long term.

This participatory solution could be a good fit in Switzerland, a country with a strong democratic culture and tradition. The Swiss people are also keenly attuned to the question of data privacy. They are thus in a very good position to take a moderate and informed approach to these issues, and to find a way of using and incorporating these technologies into their lives.

The political class has a key role to play here too. That is because a situation of dependence is created when a solution is purchased from a company. It is the company, not the government, that is most familiar with and knowledgeable about the technology. Nowadays, this indispensable technical expertise is held by economic agents, through private companies.

If we again look at the Covid-19 pandemic, a series of technological solutions was implemented in Switzerland, including the SwissCovid app, which was co-developed by ETH Zurich. The country attempted to come up with a local solution yet could not avoid involving international partners. Data storage was outsourced to Amazon, for example, which soon raised the question of technological dependence. In situations such as this, it is hard to know which jurisdiction would prevail in the event of a dispute.

#### 4. IS POPULAR TRUST IN TECHNOLOGICAL SOLUTIONS COMPATIBLE WITH FREEDOM?

In our daily lives, there is a growing dependence on technological tools: it is increasingly difficult to live without them. Things change quickly – and quickly become obsolete. Can we really hope to safeguard our own privacy if we are also undermining it by using social media like Facebook, Instagram and Twitter? Can we really be against video surveillance, which does not identify people directly, when our mobile phones are already tracking us ten times more effectively? One of the only possible answers to these questions has to do with cost and efficiency. As noted above, the budget required to install CCTV cameras could, for example, be used to increase the number of police officers on the beat.

Again taking our cue from the Covid-19 pandemic, we have seen how people are prepared to pay a certain price for greater freedom, as with apps like SwissCovid. Yet initiatives like this have proven, over time, to have only a limited impact. While most people trusted these initiatives, particularly the data privacy aspect, the technology's main achievement was that it reassured people, although only for a limited period. More broadly, the appeal of technological measures, like symbolic political measures, should never be underestimated.

In this respect, it is worth noting that such symbolic actions can also work in favour of a politician's election campaign. Such "direct" measures are used because they work wonders in terms of winning people's trust and buy-in – installing CCTV cameras in a neighbourhood is a visible action that shows something is being done about people's safety. Investing in education, on the other hand, is less visible and, therefore, less symbolic.

In conclusion, we must understand that smart city projects are also linked to urban entrepreneurialism, a system in which cities act as entrepreneurs, staking out their position both domestically and internationally. In keeping with this idea, cities need to stand out, or at least not lag behind other cities, since they are in direct competition for funding. Money that is not invested in Geneva, for example, will go to Lausanne. In this competitive constellation, it is not easy to set one's city apart, either domestically or internationally. Given the pressing need to rise above the rest, promoting a city's "modernisation" can do the trick: numerous smart city projects have been created for that purpose. These projects and the accompanying discourse can make cities visible and attractive, not only for the city's residents but also to bring in investments that could be used to develop other projects.

## Civic tech: the opportunities and challenges of citizen participation in Society 4.0

*Dr Jérôme Duberry  
Senior researcher, Albert Hirschmann Centre on Democracy and Managing Director of the Tech Hub, Geneva Graduate Institute*

The smart city concept, which dates back around ten years, comprises technological solutions to the problems of urban densification and opens territorial governance up to citizens' participation.<sup>31</sup> In other words, smart cities bring together technological and social innovation. Within smart cities, and more broadly at different levels of governance, civic technology – or civic tech – proposes digital tools to enhance citizen participation<sup>32</sup> at a time when individuals, organisations and governments have access to a wide range of both data and information and communications technology (ICT). The proportion of households in the European Union (EU) with internet access reached 92% in 2021, and four fifths (80%) of people used the internet daily that year.<sup>33</sup> As we see, digitalisation and political participation are increasingly intertwined,<sup>34</sup> and it is even getting harder to be politically active

without using digital infrastructure.<sup>35</sup> This boosts the appeal of civic tech, but it also highlights the need to analyse the related challenges.

It is hard to provide a precise definition of civic tech. Most authors associate it with more proactive governance and the increased participation of citizens and other stakeholders.<sup>36</sup> In other words, civic tech relies on digital technology to boost interaction between citizens, public administrations and the government.<sup>37</sup> Civic tech can be divided into five groups: (1) more responsive and efficient city services; (2) open data portals and open government data publishing; (3) citizen engagement platforms; (4) community-focused organising services; and (5) geo-based services and open mapping data.<sup>38</sup> The civic tech concept has been mapped out at both country level (including in Switzerland<sup>39</sup> and France<sup>40</sup>) and internationally (such as *civictech.guide*<sup>41</sup> and *participedia*<sup>42</sup>).

It is also possible to distinguish between bottom-up civic tech (initiated and managed by civil society) and top-down civic tech (put in place by public administrations and governments).<sup>43</sup> First,

<sup>31</sup> Cerema (undated) "Définition: qu'est-ce qu'une smart city?": <https://smart-city.cerema.fr/territoire-intelligent/definition-smart-city> [consulted on 17 January 2022].

<sup>32</sup> Knight Foundation and Rita Allen Foundation (2017) "Scaling Civic tech: Paths to a sustainable future": [https://knightfoundation.org/wp-content/uploads/2020/03/Scaling\\_Civic\\_Tech\\_final.pdf](https://knightfoundation.org/wp-content/uploads/2020/03/Scaling_Civic_Tech_final.pdf) [consulted on 10 January 2022].

<sup>33</sup> Eurostat (2021) "Digital economy and society statistics – households and individuals": [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Digital\\_economy\\_and\\_society\\_statistics\\_-\\_households\\_and\\_individuals](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Digital_economy_and_society_statistics_-_households_and_individuals) [consulted on 10 January 2022].

<sup>34</sup> Tolbert, C. J. and McNeal, R. S. (2003) "Unraveling the effects of the Internet on political participation?", *Political research quarterly*, 56(2), pp. 175-185.

<sup>35</sup> Leander, A. (2019) "Sticky security: the collages of tracking device advertising", *European Journal of International Security*, 4(3), pp. 322-344.

<sup>36</sup> Patel, M., Sotsky, J., Gourley, S. and Houghton, D. (2013) *The emergence of civic tech: Investments in a growing field*, Knight Foundation.

<sup>37</sup> Dietrich, D. (2015) "The role of civic tech communities in PSI reuse and open data policies", *European Public Sector Information Platform Topic Report*, 5, 2015.

<sup>38</sup> Verhulst, S. (2015) "Unpacking civic tech – Inside and outside of government", *GovLab Digest*, New York.

<sup>39</sup> See the Swiss civic tech barometer: <https://www.epfl.ch/labs/lasur/fr/barometre-des-civic-tech-2019/> [consulted on 10 January 2022].

<sup>40</sup> Assemblée nationale Mardigital (2016) "Les pouvoirs publics ouvrent leurs portes aux startups", Press kit, 13th edition, 24 May 2016, #CivicTech: [https://www.economie.gouv.fr/files/files/PDF/Mardigital\\_24052016.pdf](https://www.economie.gouv.fr/files/files/PDF/Mardigital_24052016.pdf) [consulted on 10 January 2022].

<sup>41</sup> See <https://civictech.guide>.

<sup>42</sup> See <https://participedia.net>.

<sup>43</sup> Knight Foundation and Rita Allen Foundation (2017) *Scaling Civic tech: Paths to a sustainable future*: [https://knightfoundation.org/wp-content/uploads/2020/03/Scaling\\_Civic\\_Tech\\_final.pdf](https://knightfoundation.org/wp-content/uploads/2020/03/Scaling_Civic_Tech_final.pdf) [consulted on 18 January 2022].