Smart Cities
Brave new world or surveillance nightmare?

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What is a smart city?
The purpose of a smart city is to make life easier & safer for its citizens. We live in a new age where over 50% of the global population now live in cities and this number is continuing grow. By 2045, it's predicted that over 6 billion of people will live in cities. People aspire for a better quality of life, while reducing pollution and addressing climate change concerns. Not only is the population growing but it is also aging, cities are very important to us but as they grow in density, they create unique challenges.

What is smart technology?
In its simplest form, the collection and communication of data and the insights and actions that can be derived from such data. This allows us to build smart applications and services that can make daily life more comfortable. There are many aspects of a smart city ranging from utilities, transportation, policing, healthcare, planning to commerce & entertainment to name just a few. Examples ranging from smart lighting saving energy when people are not present, to complex analysis of air pollution and relevant strategies such as traffic management to mitigate the problem.

We have already seen advancements in areas such as transportation, with mobile applications integrating multiple layers of transport and delivery services, giving the user increased information and reducing friction. Some of the smart innovations often go unnoticed, the ability to remain connected to cellular and Wi-Fi networks underground, congestion mapping and planning, most people do not notice these things when they are working.

Public services digitization
Countries such as Estonia have digitised almost all aspects of public services, they have the most advanced digital identity system globally. Citizens can use their digital I.D. cards to authenticate with a range of services such as, travel within Europe, National health insurance, Proof of I.D. when logging into bank accounts, digital signatures via public key cryptography, i-voting, submission of Tax returns & e-prescriptions.

Data is the key ingredient that enables the current and future smart technologies. Some data is pseudo-anonymous some is not, and with ever increasing amounts of data points being collected there are real and justified concerns regarding privacy and security.

We should ask ourselves these questions:
- Who do we trust with this data?
- Should the sovereignty remain with private companies
- Should this resource be treated as a public interest?

Caption: Smart technology brings comfort and ease however, surveillance capitalism is a growing concern.

There is growing concern regarding "surveillance capitalism" and how large technology companies may use algorithms to nudge human behaviour in ways to favour their business rather than solely for the benefit of citizens. There remains hot debate between data collection and privacy such as the Toronto waterfront development by Sidewalk Labs, an Alphabet (Google) subsidiary.

As with all technology, there remain vulnerabilities. Estonia was besieged by two days of riots and cyber-attacks lasting weeks. Named the bronze soldier attack, online services of Estonian banks, media outlets and government agencies were taken down by unprecedented levels of bot-net traffic and email spam. The consequence for Estonian citizens was that cash machines and online banking services were sporadically out of action, government employees were unable to communicate with each other via email, and journalists were unable to upload articles to be printed in time.

Security by design
There are also concerns regarding hardware and devices that may not be developed with security at the forefront. One of the reasons such large botnets even exist is due to the millions of cheap internet devices that contain vulnerabilities. We can only imagine the potential impact of larger attacks on cities that are even more inter-connected and dependant on technology for critical functions, and how they could be used nefariously. Only time will tell if we have struck the correct balance between convenience, security & privacy.

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