SMART CITIES

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EPISODE 11 - Featuring Helsinki Mayor Juhana Vartiainen

A recent UN report expects 68% of the world population to live in cities by 2050, compared to about 55% today. The uncomfortable truth behind that is that cities are responsible for the majority of greenhouse gas emissions, waste and pollution.

In this new episode, Kokou Agbo-Bloua explores the concept of smart cities and investigates whether they are simply the result of an intelligent designer or if there are more complex evolutionary forces at play? He is joined by the mayor of one the world's most celebrated smart cities, Helsinki's Mayor Juhana Vartiainen, to discuss the future of urbanisation and how smart cities rise to the challenges of sustainability, the energy transition and simply, strive to make life better for their citizens.

2050 INVESTORS – EPISODE 11 SCRIPT

(Opening credits for all episode of the podcast)

Welcome to 2050 Investors, the podcast that deciphers economic and market mega-trends to meet tomorrow's challenges.

I'm Kokou Agbo-Bloua, I head up Economics, Cross-Asset and Quant Research at Societe Generale.

In each episode of 2050 Investors, I'll investigate a key mega-trend that relates to the Economy, the Planet, Markets and You.

(Beginning of episode 11)

What can Singapore, Zurich, Oslo, Taipei, Lausanne and Helsinki possibly have in common? Well… beyond the fact that they are obviously cities.

They are smart cities! According to prestigeonline.com, they are six of the smartest cities in the world. Out of the 10,000 cities around the globe today, only 118 of them are deemed smart.

Have these cities taken an IQ test for them to be called smart? How does one differentiate between a smart, average and a dumb city? What makes a city smart?

To answer those questions, I've decided to use one of the world's most celebrated smart-cities as our case study: Helsinki. And I'm very happy and honoured that Helsinki's Mayor, Mr Juhana Vartiainen, has agreed to share his views on how his city has transformed to deliver for its citizens.

Kokou Agbo-Bloua: Mayor Juhana Vartiainen. It is a pleasure to have you on the show.
What is, in your opinion, a smart city? What is the mission statement of a city such as Helsinki, its purpose?

Mayor Juhana Vartiainen: Well, this term smart city is perhaps overhyped, and everybody can give the term his or her own significance and meaning. But in my view, there are many ways to improve the quality of life of citizens and visitors alike. And a smart city just tries to make life easier, smoother for anybody who works or visits the city. Let's say digital services. If you want to get information or you need a permission for an entrepreneurial project or as a citizen, you need perhaps a vaccination or information about traffic jams, then you should have access to easy going digital interfaces. That's one very important thing. Perhaps just as an example.
As to our mission, we want to go in that direction, but generally for Helsinki, we want to be a growing city, since we know that economic growth is basically identical with urbanization nowadays. And Helsinki can become a better place for entrepreneurship, a place to live a good life. And we need to grow, and we have the potential for that growing in a sustainable way. That's more or less my philosophy.

Very interesting. Before we go any further, let's start with some basics.

According to Wikipedia: a smart city is a technologically modern urban area that uses different types of electronic methods and sensors to collect specific data. This includes data collected from citizens, devices, buildings, traffic lights and cameras and so on.

This data is then processed and analysed to monitor and manage traffic congestion, transportation systems, power plants, utilities, water supply networks, waste, crime detection, schools, libraries, hospitals, and other community services.

Well, this is a smart definition of a smart city but here is another interesting way to think about them. Cities are simply akin to living biological organisms:
- First, the commercial and residential real estate which includes housing and businesses can be thought of as the skeleton, bones and the muscles of a city.
- Then, roads, pavements, streets are the veins and arteries.
- Parcs, gardens and trees are the lungs of the city which allows it to breathe.
- Underground sewage networks are the bowels.
- Traffic sensors, cameras, information technology, internet networks are its five senses and nerves that collect important data and stimuli for … the BRAIN.
- The Brain is the top management, the mayor's office, his or her management team and the information system.
- The police and firefighters are the immune systems or T cells fighting crime which if not treated only can cause an infection and sickness. Batman was therefore to Gotham city and its rampant corruption what antibiotics are to bacteria.

But to every Batman, there is a Joker. A Scarecrow. A Double-Face. You get the idea. And when it comes to cities, the uncomfortable truth is that they are also responsible for the majority of greenhouse gas emissions, waste and pollution. Can smart cities be the solution for more sustainable cities to meet the challenges of climate change? And if yes, can all cities afford to become smart or is it only a luxury for the happy few?

Let's start our investigation.

First, to fully grasp the importance of what we are talking about, we need to go beyond simple definitions of what a city or a smart city is and understand how they came about. Do cities evolve and become smarter over time or do you need smart architects and intelligent design to build them from scratch? Evolution or Creation?

The word city comes from the Latin word civitas, 'citizenship' or 'community member'. It eventually corresponded with urbs, meaning 'city' in a more physical sense.

According to articles on Wikipedia, cities were first formed after the Neolithic revolution, around 10,000 BC. This was an important moment for our ancestors, the homo sapiens.

We're talking wide-scale transition from a lifestyle of hunting and gathering to one of agriculture and settlement. Agriculture ultimately made denser human populations possible, and thus the formation of cities.

I think this was the moment our ancestors understood two very important life lessons you will get from your parents as a kid or also in business schools or management training today:

- the first one is "Alone you go far, together you go further"
- and the second "don't eat what you kill but instead hunt as a pack". This is not always obvious when you think about the selfish natural instinct of humans. As Hobbes famously said, or rather wrote: "Homo homini lupus est": A man is a wolf to another man.

But cities did not show up randomly. Geography played a crucial role. Cities originated and developed in areas which were fertile, suited for agriculture. So stable weather patterns, close to water sources, rivers, and sea fronts.

To come back to our question: evolution or creation? Cities do seem to follow a Darwinian process of evolution by human selection. They had to adapt and improve their ability to attract innovative thinkers, entrepreneurs, political or religious leaders.

Great cities got destroyed and wiped off the surface of the planet, by wars, natural disasters and simply … got lost. Think of Pompei that was destroyed by Mount Vesuvius, Babylon with its suspended gardens in Iraq, Petra in Jordan which we all remember thanks to the Indiana Jones movie, or even Machu Picchu in Peru which was rediscovered in 1911.

For cities, the pinnacle of success is to have a large population. It is not surprising that the most populated cities in the world are also the most popular and most visited. Tokyo takes the first place with 37 million people and is closely followed by Delhi at 32 million, and then Shanghai with 28 million.

The oldest city in the world is believed to be Jericho in the Palestinian Territory. With only 20,000 people, it is 11,000 years old. Beirut in Lebanon dates back to 3000 BC. Aleppo in Syria appeared around 5000 BC.

Most smart cities are therefore a function of evolution. Because to build a brand and a reputation and attract the masses, you need time, history and a soul.

Ok, so a city cannot just be conjured up out of nowhere. But can cities become smart if they decide to? Can they all afford to do so or is it only a luxury for the happy few?

A research by Frost & Sullivan published in 2014 identified and I quote "eight key aspects that define a smart city: smart governance, smart energy, smart building, smart mobility, smart infrastructure, smart technology, smart healthcare and smart citizens."

To quote Mike Tyson: "Your hands cannot hit what your eyes can't see". You cannot manage efficiently without seeing what is happening.

The tragedy of human cities is that most of them are not managed as efficiently as they should or could. The consequences of poor management and design are air and water pollution, waste, traffic congestion, overcrowding, energy waste, inefficient building. This in turn can result in illness, disease, misery, and social inequality.

An article from Nextcity.org highlights the fact that half of the 10,000 cities worldwide didn't exist 40 years ago. According to the World Bank, 55% of the world population lives in cities. That's 4.2 billion people.

A recent report on UN.org, expects 68% of the world population to live in cities by 2050. By then, the world population is expected to reach 9.7 billion, from 7.7 bn today. Therefore in 30 years, the population in cities will increase by 50% to 6.6bn. That's an additional 2.4bn people. Just imagine what this means in terms of housing, energy consumption, waste, water usage, pollution, impact on the environment and carbon emissions.

Statista.com tells us that in 2022 the World GDP reached $102 trillion. How much of all of this wealth is created in cities? Well…80%! Yes, 80% of global GDP is generated in cities according to the world bank. The top 3 cities ranked by their GDP are Tokyo with $2 trillion, New York with $1.8 trillion and then Los Angeles and Seoul which are both at $1.1 trillion.

But to generate GDP, you need energy. And the more GDP you generate, the more energy you consume. There is a formula in Physics that says that the amount of energy needed to move an object to a given speed, will always be half the mass times its speed squared. Moving more stuff around faster for more people is unsurprisingly an exponential consumption of energy that technology alone cannot solve.

It is therefore not surprising that according to Un.org, cities are major contributors to climate change. Cities consume 78% of the world's energy and produce more than 60% of greenhouse gas emissions. Yet, they account for less than 2% of the earth's surface.

This comes at a human cost too. In October 2018, the World Health Organization said in a report that 93 per cent of the world's children breathe toxic air every day.

Progress and the aspiration for a better life is for most people the deciding factor to move from rural areas to cities. The result is overweight cities with blood clots, i.e., endemic congestion, high blood sugar and cholesterol to such an extent that the liver, aka the recycling facilities, is overwhelmed.

But the list of cities with the highest carbon footprints are also the most famous, the most wealthy and smart. A quick google search for the top 10 cities with the largest carbon footprints, gives the following results: Seoul is at the top, then comes Guangzhou, New York, Hong Kong, Los Angeles, Shanghai, Singapore and Chicago.

This reminds me of the Kaya Equation which shows that the amount of greenhouse gas emissions is simply the product of population, GDP per capita, energy intensity of GDP and greenhouse gas intensity of energy. Ultimately, population consumption and energy intensity are outpacing the decarbonisation of energy sources.

So smart and famous cities will have no choice but to up their game and get even smarter. Increasing the use of digital technology (aka the internet of things) is a necessary condition but not a sufficient one to be in control of our impact on the environment.

Now let's see how Helsinki Mayor Juhana Vartiainen thinks cities can become smart and discuss another key component of the purpose of smart cities: their emotional intelligence and impact on the life of citizens – which of course includes tackling the challenges of climate change.

[Interview starts]

Kokou Agbo-Bloua: So Mr. Mayor, do you think it is part of evolution to become a smart city, or should it be part of an intelligent design? I.e., you have to create a city to be smart and you cannot become smarter through time.

Mayor Juhana Vartiainen: I guess it is very difficult or even impossible to create cities or smart cities from scratch because cities are a nexus of people with all their traditions and customs and ways of living that have really impregnated the city for centuries or even millennia in the case of some European cities. However, we can do a lot as political decision makers to create direction and facilities and help people's own initiatives in that smart direction. I do believe that modern economic growth is closely associated with urbanization, and that is something that has been going on. So, cities are mostly can be thought of as platforms where you can influence things and do interesting things, but you cannot start them from scratch.

Kokou Agbo-Bloua: The ability to use technology to harness and process data, such as traffic jams, movement of people, energy consumption, behavioral patterns, waste management, etc. So, like a brain, a smart city is able to anticipate the future and plan ahead with efficient resource allocation. So, let me ask you this, how smart is Helsinki in your opinion, and what can be improved?

Mayor Juhana Vartiainen: We have put a lot of emphasis on the availability of data and information that we can use as the city bureaucracy and we can even let the citizens and consumers and entrepreneurs use through multi various interfaces. Just to mention an example, we have a proactive preschool enrolment service. When our data tells us that the child will need to enrol into preschool, we send the family an SMS message containing information of a preselected facility or several facilities that we suggest for the child. Or a recent example, when we have operated covid-19 vaccinations, we have contacted people who we would like to get vaccinated. These are just a couple of examples, but we need to work a lot more into that direction.

For example, in city planning, when we look at traffic flows, for example, we want to facilitate movement within Helsinki and give up-to-date information to everybody about mobility, services, possible jams, but even different ways of moving within a city, even perhaps for people with some limitations as to access. So, there's a lot of work to do, but this is our general philosophy.

Kokou Agbo-Bloua: This is an interesting and important point in being able to use sensors to improve the lifestyle of your citizens. Which leads me to my next question about time, compared to other cities you've lived in, is the flow of time slower or faster in Helsinki? Do you think Helsinki gives more time to, or takes away time from its citizens?

Mayor Juhana Vartiainen: Well, that's a difficult one and a philosophical question. Now, if I remember right, some economists have measured the speed of speaking and moving in different cities, and it turns out that the larger the city is, the faster is the pace of things. So, people tend to speak faster and move faster in bigger cities. We don't necessarily want Helsinki to be an extremely busy and stressful city, but we want to offer a good work life balance and be efficient and speedy when the people need it.

For example, it's absolutely an advantage to be able to move in a short time from Eastern Helsinki to Western Helsinki with the underground or other ways of transport. But otherwise, it's surely an advantage for a city like Helsinki to offer a good work life balance with a lot of possibilities for recreation as well as working.

Kokou Agbo-Bloua: This is an excellent point. Obviously, one cannot measure the IQ of a smart city, but is there such a thing as the emotional intelligence of a city? Is Helsinki focused on the empathy aspect of things as opposed to just data processing?

Mayor Juhana Vartiainen: Well, you are really talking of the city's atmosphere. And what we can emphasize and where we at least can show something, is that we want to make Helsinki city that is filled with places where people can be at ease, like parks or public libraries, where people can gather around whatever activities they want to have. Also, it is a name of a Nordic city like Helsinki to be a place where different people can move around without risks and being comfortable at the same time. For example, for young people and children, Helsinki is a place where two seven-year-olds can take the tram without their parents just to go to a park, on the other side of the city or go to wherever they want to go. This is the kind of emotional comfort that we would be so happy to offer to anybody who happens to be in Helsinki, be it a visitor or a citizen.

Kokou Agbo-Bloua: Excellent point. How is Helsinki contributing to the fight against climate change? Do you have a net zero target and is the smart city more adapted to adjust and adapt to the energy transition challenge?

Mayor Juhana Vartiainen: Well, of course, that is a very integral part of being smart. Nowadays. You cannot be smart without really being sustainable. And we have just moved up our deadline for achieving carbon neutrality from 2035 to 2030. And we are in the process of renewing our carbon neutral Helsinki action plan, and that will include many concrete measures to reduce our emissions. One central challenge for us is to heat the city. This is a cold climate place, but we still don't want to produce CO_2 emissions. So, a lot of innovative thinking is going on in this field.

Kokou Agbo-Bloua: How do you see Helsinki in 2050?

Mayor Juhana Vartiainen: I hope Helsinki in 2050 will be bigger in a sustainable way, will be international, tolerant, an attractive city for people to move in and work for people of whatever their origin, a dynamic labor market, interesting arts, culture and music and events, a city with solid public finances that can continuously afford quality public services.

Kokou Agbo-Bloua: Mayor Juhana Vartiainen, it was a pleasure. Thank you for coming on the show

[Interview ends]

Global Data Thematic Research published in February 2021 year a timeline on the "History of Smart Cities" that states that the percentage of smart cities in the world will keep increasing, and

that by 2050, up to 70% of the world's population is expected to inhabit a smart city. They will have an important role to play in tackling climate change but also in the wellbeing of future generations.

Human life is made possible by billions of cells working together. The human brain, one of the most complex organs on earth, is made up of billions of synapses and cells cooperating to create consciousness.

Smart cities with all of their sensors will need smart consumption too. To quote Nigerian author Ogwo Emenike "Smart is not just a word: it's an attitude".

(Credits)

Thank you for listening to this episode of 2050 Investors. And thanks to Mayor Juhana Vartiainen for his interesting insights on Helsinki and smart cities in general.

I hope this episode has helped you get a better glimpse of the future of urbanisation and the challenges ahead! You can find the show on your regular streaming apps. Please subscribe, leave comments and stars anywhere you like and spread the word!

See you at the next episode!

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