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**The Heart of a Smart City: The Internet of You**

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**The Heart of a Smart City: The Internet of You**

by Mike Steep

*Pssshhhhhhtttt.* Like a shot of steam in your morning latte, the sound of train doors opening injects vitality into any urban commute. But imagine at 7:18 a.m. on Monday in the London Underground the red doors stand open and quiet.

Inside the rail cars, instead of the familiar sway and howl of a train at pace, there’s just a nervous electrical hum. Londoners sit, yawn, and scroll absently on their phones. Tired of waiting, a couple of would-be passengers make a decision, tuck away their phones, and head back out onto the platform.

Now what?

The commuters have no idea why their train is delayed or when or if it will move again. So they’re forced into a scavenger hunt for an alternative way to work.

To be fair to London, this experience is rapidly becoming extinct. The city upon the Thames is growing faster than at any other time in its 2,000 year history. According to the [City of London](http://www.london.gov.uk/sites/default/files/smart_london_plan.pdf), the core will hit nine million in population before New York and approach 10 million by 2030. London is on track to become one of the 30 megacities forecast to exist worldwide by 2023. So the city is necessarily reinventing itself in the Digital Age as a Smart City.

But how does becoming a Smart City save the hapless riders stranded on the train? Imagine you’re a commuter in a different scenario. Sensors monitoring the Tube and its trains detect an irregularity in the brake system of your usual train. The data gets reported in real time to the government agency Transport for London (TfL), checked with a probability heuristic, and confirmed. There’s a 90% chance of brake failure in the next two hours.

No problem.

Before you can leave a tip for the barista at your favorite coffee house, a text message alerts you to the delay, and offers you an alternative route, as well as a coupon for a discount on your next cup of coffee. All compliments of the City of London and TfL. Apps like [Citymapper](https://citymapper.com/london/superrouter?) are already taking the first toddling steps toward this ideal.

And that’s why the current model of a Smart City as an extended Internet of Things is inadequate. It leaves out the most critical component – you, the digital citizen. You are not just a thing, but the reason the system exists. There can be no useful vision of a city, smart or otherwise, that doesn't place you at its center.

So, then, what is a smart city? And what are the implications for the people who live within its bounds?

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To truly leverage what a city can be, planners, companies, and urban dwellers need to understand three critical things:

1. **You don’t just live in a city; you cross through its layers every day.**

In the simplest view, cities have three layers: the underground level, the surface, and the airspace. In a Smart City there’s a corresponding parallel universe of data-collecting sensors integrated within each stratum.

Take, for example, the underground. Like trees with a massive root system, cities are figuratively and literally supported by a vast subterranean physical complex – transportation, heat, sewers, fresh water, electricity, communications, and structural supports. Today these systems are being augmented with sensors, digital arrays, and hubs to monitor every aspect of their activity. If the earth shakes, whether from a train or a seismic event, the data will be accurately captured.

The next layer is the surface. Think streets, parks, plazas, and even the retail shops, restaurants, and other buildings or entrances normally accessible from street level. At this layer the parallel digital network includes cameras, location-based services, cellular networks, and sensors monitoring everything from traffic to the pace of pedestrians.

The final layer is airspace. Skyscrapers, bridges, and towers hold aloft sensors that monitor Wi-Fi, weather, air quality, and perhaps even drone traffic.

So why is it important to think about the strata of city? *Because humans cross through each layer every day*. Any technology solution that fails to anticipate and account for people is, at the outset, a hobbled initiative. ***The truly connected city begins to emerge in how data is managed across all three physical layers***. The data analytics become the glue that, when managed well, dramatically improve your experience of life.

1. **You will be the active, mobile center of a vast network.**

We’re used to thinking of ourselves as part of a social network, but done right, Smart Cities promise to put each of us at the center of far-reaching civic and commercial networks, too. Points of connection will be everywhere – smartphones, clothing, cars, benches, buildings, parking meters, speed bumps, shop windows, and more. Pass by your favorite clothing boutique and your jacket alerts the store, flashing a special price on the window just for you.

Of course, smart doesn’t just mean opportunistic sales. The kind of porous and flexible connection required for usability argues for a whole new level of data security and privacy. A truly smart city must take into account social policy and how it translates into protection for its citizens. The good news is, as points of connection proliferate, so will your choices about when and how to interact with the network.

1. **You will have the power to shape your experience of the city.**

In another futuristic example, imagine acting as a kind of living thermostat to regulate the temperature of your city. On the surface during rush hour above certain key transit hubs, the temperature of the sidewalk can soar up to 20 degrees higher than the surrounding environment. What if city managers could transfer that heat from underground into the buildings above? Instead of energy escaping into the atmosphere, buildings could reduce their heat consumption and improve their carbon footprint. Take it a step further and thousands of commuters could voluntarily alter their route to promote heat exchanges and maybe even receive an energy tax credit.

Cities have always shaped their inhabitants. The élan vital can manifest in an accent, the pace of service, or even how much time people spend outdoors. But this may be the first time in history that an individual citizen has the power to push back on and shape her city in real time. We’re reaching a new level of engagement – a kind of symbiotechna.

In coming articles, we’ll look more closely into the specifics of Smart Cities and the tremendous creative potential for sustainability, livability and commercial impact. Smart means a safer, healthier, cleaner, and even joyful city. Always with you at its heart.