

#### Introduction

Earth's great cities are hubs of growth and innovation, but many are also beset with crumbling infrastructure, environmental pollution and growing social inequalities. Around the world, governments are struggling to manage the rapid pace of change, while corporations concurrently seek to play a far greater role in civic life. With two-thirds of humanity predicted to be living in urban environments by 2050 according to the UN, cities need to be able to sustain the growing demands on their infrastructure. But if governments don't have the resources to do this, will the role of city maker fall entirely to private corporations? And if so, will the metropolis of the future become a branded utopia or a commercial dystopia?

The smart city concept will be at the core of any major evolution, with networks of embedded sensors accumulating unprecedented amounts of data on the daily activities of its citizens. It's already happening, with our digital selves existing on platforms owned by corporate giants, and our personal data being exchanged for enriched social, cultural and economic lives. But in the next phase of hyper-connectivity and Whole-system Thinking, integrated branded platforms will act as much more than this - they will define the very fabric of the city experience.

Not only do corporations have the tools, they also have the money that is essential for this urban evolution. More than 30 financial institutions now have consolidated assets greater than \$50bn, according to an article by Fast Company, wielding far more power and influence than many sovereign states. The combined market capitalisation of Amazon, Apple, Facebook and Google is \$2.8 trillion and exceeds the GDP of all but five national economies (source: Nasdaq).



Above the clouds, a new view of the branded city emerges (Visual by Inferstudio for The Future Laboratory)

'Integrated branded platforms will define the very fabric of the city experience'



Al systems can already detect poverty-stricken areas (Penny by Stamen Design and DigitalGlobe)



Mobility companies will be forced to adapt to new urban infrastructures (REDS by Chris Bangle, Los Angeles)

'Cities are always an outward manifestation of the economics that create them. We need to be mindful in the future that they are run like communities rather than corporations.' – Anthony Engi-Meacock

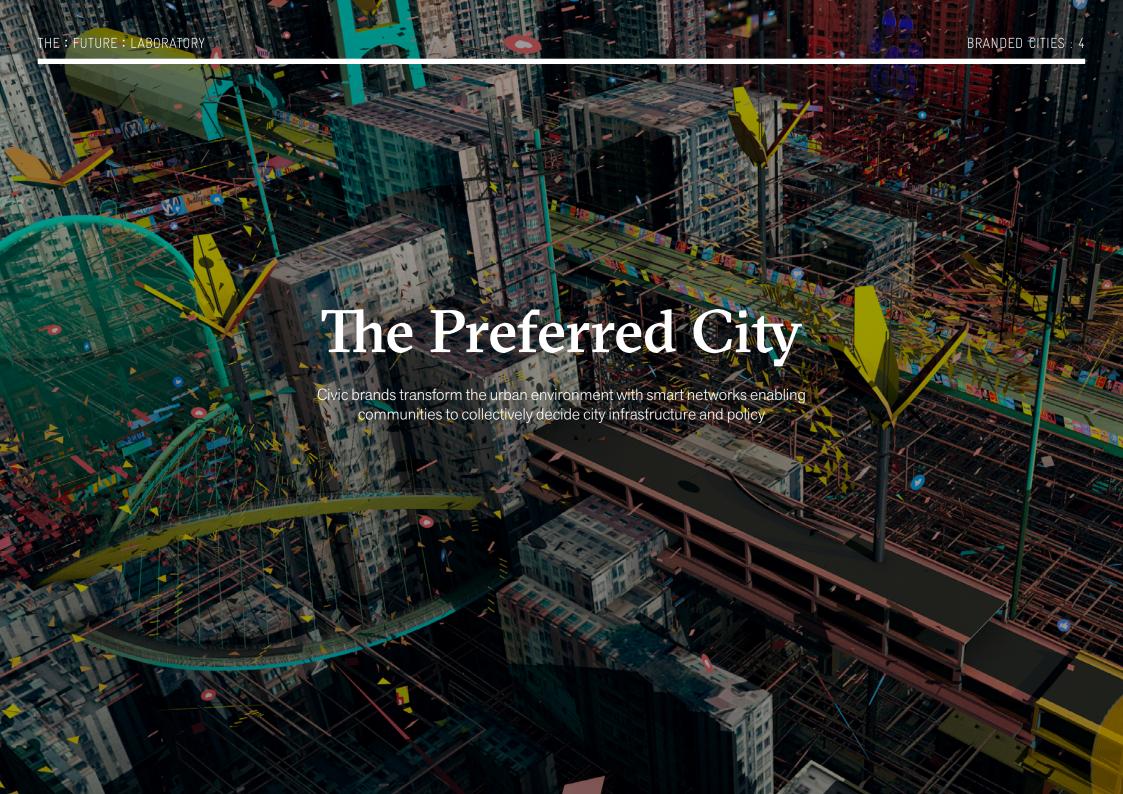
These corporations now have their sights set on a smart cities market which is forecast to grow from \$425bn to \$1.2 trillion in just the next four years, according to Markets and Markets.

The benefits of living in such cities are already felt by many urban dwellers, even if they do not yet register the mechanisms by which they operate. The South Korean capital Seoul is one of the most networked cities in the world, using technology to streamline a city with twice the population density of New York. Its metro system handles 7m passengers daily, but few would notice the sensors that provide Seoul's Transport Operation and Information Service (TOPIS) with real-time data. San Diego in California has a streetlight system that can detect parking spaces and notify the 30% of downtown traffic driving around trying to find them. On the opposite coast, Miami has lights that can detect gunshots and notify the police to respond. Although citizens will notice little outward visible change from upgrading the existing urban fabric, the tacit benefits to their standard of living will be significant.

But as we look to the future we must also learn from the past. History is littered with images of grandiose utopias that failed to function in the real world, of moribund company towns slowly being reclaimed by nature. And the interests of corporate entities will need to be balanced with the rights and interests of the population too. Anthony Engi-Meacock, co-founder of Turner Prize-winning design studio Assemble, believes that the built environment will be better when it is more heterarchical and less corporate: 'Cities are always an outward manifestation of the economics that create them,' he says. 'We need to be mindful in the future that they are run like communities rather than corporations.'



States are increasingly competing on their ability to build the most technologically advanced urban environments (Expo 2020 Dubai's Smart site)



### Scenario 1: The Preferred City

So far, the evolution of the future city has largely been led by municipalities working in tandem with a range of companies to develop the relevant technical infrastructure. Increasingly, however, local governments are turning over entire tracts to leading technology brands such as Samsung, Nissan, Google and Panasonic to use as testbeds for smart city innovations. These companies are well placed to develop such projects, using their depth of knowledge in everything from data collection and analytics to product development and user interface design to make the smart city truly manifest.

One example is Google's Sidewalk Labs, an 'urban innovation platform' aiming to redevelop a 800-acre section of Toronto's waterfront. The plan for Quayside is to create 'the world's first neighbourhood built from the internet up'. The redevelopment will focus on housing, energy, mobility, social services and shared public spaces with a view to creating a blueprint for sustainable communities worldwide. To do this the project will track 25 quality-of-life metrics including walkability, park access, job growth, civic participation and time saved commuting.

'We believe our role is to create the conditions for others to innovate on top of,' says CEO Daniel Doctoroff.
'That's what great cities have always done: A street grid is a platform.' It is precisely Google's expertise in the creation of such platforms that makes it far more capable than any government agency, local or federal, of moving the smart city concept beyond one that merely achieves certain efficiencies to one in which new ways of using the urban realm become possible for citizens. It is not hard to imagine residents of a district selecting which branded applications they want installed on their platform. CityMapper might be placed in

charge of conducting public transport, while Nike+ could be tasked with gamifying the route to the local primary school to encourage exercise. Dissatisfaction with any particular service would merely require majority opinion to sway in favour of an alternative application.

There are already precedents for such community action. ZenCity monitors social media in real time to track how citizens view their city, and this data can then be used to inform policy. The technology is being trialled in 10 Israeli cities and in Paris. Meanwhile, Australian information platform MiVote lets citizens vote on a wide range of policy issues as they pass through the legislature, rather than voting on a package of policies every few years.

City residents will increasingly be asked their opinion of civic matters, but their participation levels and their influence on how a city is run will depend on the balance of power between the corporations and the city. In the US only 22% of respondents to the Edelman Trust Barometer survey thought business was the institution most likely to lead to a better future. That seems low until you consider that only 15% thought the same of government. A full 64% said that CEOs should take the lead on change rather than wait for government to impose it.

Given that brands such as Google and its competitors have achieved their stratospheric growth not only by learning how to hold consumers' undivided attention, but also by seamlessly connecting every part of their day-to-day existence, and that government institutions are clearly regarded as untrustworthy and slow to act, accepting a branded city future might be key to reigniting civic engagement.

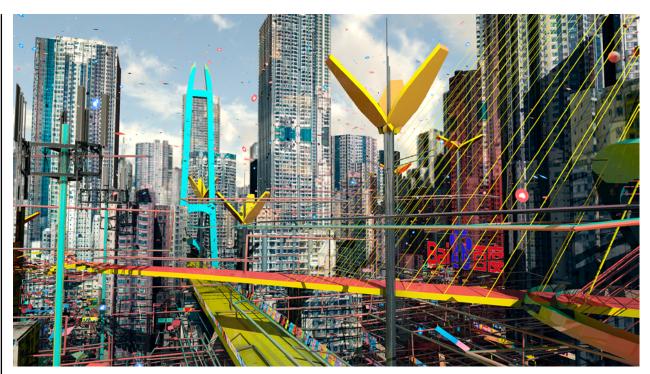


Branded applications could run public transport systems of the future (System Aesthetics – Self-driving Car by Field)

'With governments regarded as untrustworthy, accepting a branded city future might be the key to reigniting civic engagement.'

'Consumers will wake up in a city that will not look the same from one day to the next, visible proof that it is continuously optimising itself to their requirements.'

If initiatives such as Quayside are implemented transparently and around a core premise of direct democracy, with citizens able to exercise collective control over their environment and its services in real time, the city could appear markedly different by 2050. Consumers' media feeds would also include contextual calls to action from brands asking them to vote for their vision of the future metropolis. Zoning would become dynamic, directly mapping consumer needs onto the city. Transport routes would change in accordance with demand, with main commuter arteries transforming into pedestrianised boulevards in the middle of the day. Intelligent signage, operating even at the level of smart, colour-shifting paints, would indicate the presence of a new brand operator, their visual equities swarming across the urban landscape to indicate the start of their stewardship. Consumers will wake up in a city that will not look the same from one day to the next, visible proof that it is continuously optimising itself to their requirements.



Personalised branded city zones will adapt to individual consumer tastes (Visual by Inferstudio for The Future Laboratory)



### Scenario 2: The Probable City

The term 'smart city' means different things to different people. A recent survey of citizens in Asian metropolises by The Economist Intelligence Unit found that only 25% of respondents were very familiar with the term. But while only half (56%) regarded their city as smart today, more than three-quarters (78%) said they expect their city to be smart in five years. This worrying division between comprehension of, and enthusiasm for, networked urbanism points to a slightly different future of the brand-operated metropolis, suggesting that citizens might not be aware of the potential trade-offs of appointing these corporate custodians.

Indeed, this mirrors the struggle consumers already face in understanding the caveats that underpin the free exploration of digital space. Pragmatists will be quick to note that access to the kind of platforms by which major technology brands have thrived has not been granted as some complimentary, altruistic gesture. Every nominally free interaction we have online is transactional, with either our data or our attention being captured in return and used, directly or indirectly, to generate revenue for the host. Should we expect the branded city to be any different?

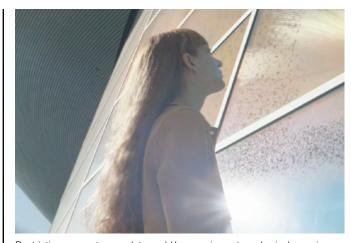
While the ability to supply real-time, contextual information to citizens has great potential for civic enhancement - not least in times of crisis - it is also highly attractive to advertisers. As physical and digital realms merge, targeted advertising will follow citizens wherever they go. This is already starting to happen as sensors continue to proliferate in urban spaces. In London, Westfield Shopping Centre has experimented with billboard advertising that follows individual shoppers around the complex, while beauty brand Elizabeth Arden has used live data on pollution levels to promote a skin cream. But in

the branded smart city, corporations will target messages to individual citizens to reap the greatest rewards. Google Play has combined data from Gmail, Calendar, Maps and YouTube with public weather and location data to create situational playlists. Meanwhile, Ebay has used biometric sensors in headsets to track shoppers' emotional responses to certain products.

There are also internal applications. The aforementioned Google Sidewalk Labs project will undoubtedly prove to be a goldmine of data for the company. And although we are told that access to its sensors will be open, it's easy to envisage a corporation looking to capture this value for itself. '[Google] clearly regards Toronto's waterfront as a massive research incubator for future product development,' argues John Lorinc, author of The New City.

By acting as a gatekeeper to multiple aspects of each resident's life, corporations could ultimately look to extract fees from any other company seeking to use community data from these neighbourhoods. Or they could give themselves privileged access by building in latency for third parties or only provide a partial overview of key metrics.

This is a view shared by Evgeny Morozov, author of The Net Delusion: The Dark Side of Internet Freedom, who comments: 'Amid all this platformaphoria, one could easily forget that the street grid is not typically the property of a private entity, capable of excluding some and indulging others.' Morozov raises a series of important and as yet unanswered questions about how such spaces will really operate. 'Who determines the rules by which different companies get access to it?' he asks. 'Would its self-driving



Restricting access to your data could have an impact on physical experiences (Still from Beyond Native)

'In the branded smart city, corporations will target messages to individual citizens to reap the greatest rewards.'

'Engaging with a business deemed incompatible with your host brand could require relocation. This could create monoculture eco-systems, severely restricting consumer choice.'

cars be those of [Alphabet-owned] Waymo... or those of Uber and any other entity that builds them? Would Alphabet support 'urban net neutrality' as actively as it supports net neutrality of the conventional type?'

The implication here is that consumers' future experience of the city will come with restrictions based on a series of fundamental choices. The opportunity to navigate an urban environment largely unmediated by AR advertising will probably come at the cost of unrestricted use of your data. Those who opt out of such an exchange will only be able to view a light version of this notionally public space. You might, for example, only be given a short window in which to watch a street performer before they are obscured by a virtual brand activation.

At the same time, the selection of brands operating in these spaces may be curtailed by whichever corporation is operating the overarching network, its existing partnerships and criteria for collaboration. Engaging with a business deemed incompatible with your host brand could require relocation. This could create monoculture eco-systems, severely restricting consumer choice. Tomorrow's branded city dwellers will have to debate whether these impositions are an acceptable price to pay for the commensurate increases in the convenience and innovativeness of services they receive compared to those reactionaries that still insist on living in 'dumb', council-run conurbations.



Augmented reality could be used enhance, or impede, city environments (AR Art Project by Snapchat)



Immersive media may face a backlash from digital demonstrators (Jeff Koons AR artwork vandalised by Sebastian Errazuriz)



Creating a data-rich urban topography that doesn't also overwhelm the city's inhabitants will be key (Hyper-reality by Keiichi Matsuda)



# Scenario 3: The Potential City

But what happens if the weighting of the transaction between the citizens of a city and its brand operator skews too far in favour of the latter? We are only in the very nascent stages of corporations being given the keys to our cities' futures, but if the democratic imperative is not embedded into the systems they are establishing from the start, it may be impossible to readjust the balance of power.

When Amazon announced it was looking for a location for a second North American HQ it had more than 230 cities vying for its attention. Stonecrest, Georgia, voted to change its name to Amazon, Georgia; Newark, New Jersey, has offered tax breaks worth \$7bn to lure the e-tail giant. Such a contest, complete with taxpayer-funded incentives, illustrates just how much influence the world's largest corporations can exert, especially over cash-strapped city halls struggling to balance the budgets for schools, hospitals, pensions and more. Who can say what civil liberties could be handed over in pursuit of the cash injection such deals might bring?

This raises the possibility that the branded city could become even more divided along socio-economic lines than those we inhabit today. If the only way consumers can exercise control over their environment is by paying for favourable access, concepts such as public space, services and right of way will be lost. Studies have already shown a correlation between the number of patents a city produces and the economic segregation within the city limits, with knowledge and creative workers clustering in innovative, networked communities tailored to their needs. The technology industry accounts for almost 50% of the increase in cities such as San Francisco's economic segregation over the past 20 years. Inequality will continue to grow as automation and

robotics undermine the economic wellbeing of some parts of the workforce. Even if the 900m urban dwellers worldwide that now live in slums (source: UN) see a marginal improvement in living conditions, will they look on as their data is harvested to build gilded communities nearby that enjoy a standard of living they can only dream of?

There are already compelling examples of how brands are changing the way we think of civic space. The population of Kenya's capital Nairobi has doubled in 20 years to 4.2m (source: The Economist) and yet it has no centralised ambulance service. Technology start-up Flare operates an Uber-style service to link patients, ambulances and hospitals, dramatically improving provision to those who can afford to pay for it. Meanwhile, SENSEable City Lab in Boston has developed Luigi, a remote device that collects data from the city's sewers. Possible uses include managing an epidemic or identifying the location of illegal drug use. These services will inevitably raise concerns about public policy and public accountability.

By 2050 the link between worth and access to the branded city will probably not operate through a mechanism such as an exchange of funds. It is more likely that your perceived value will act as your passport to the metropolis. The Chinese government recently introduced a Social Credit System that aims to rate the trustworthiness of the country's 1.3bn citizens. It does this by analysing everything from financial probity and shopping habits to who consumers associate with on social media to create a metric that controls their access to debt - and thus a vast potential range of goods and services. Those who indulge in pastimes deemed to be degenerate - which include the purchase of video games



Design based solely on profit motives will quickly become dysfunctional (Moby Mart by Wheelys, Shanghai)

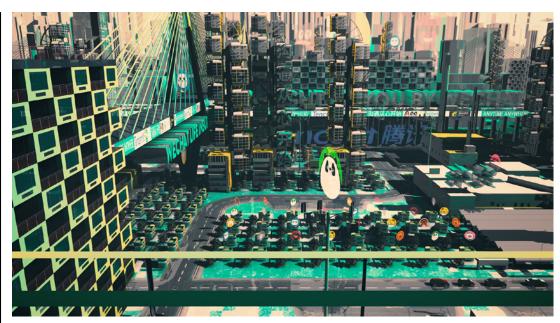
'Your perceived value will act as your passport to the branded city'

'By 2050 two-thirds of humanity will live in urban environments. Will the data of its poorest citizens help to create gilded communities for the wealthy?'

- see their social score, and standing, fall. Chinese consumers' Social Credit System rating is already being advertised on the profiles of users of the country's most popular dating app.

If such ratings systems sound dystopian when operated by an authoritarian government, they are potentially even more so when wielded by mega-system brands. When Chinese technology conglomerate Alibaba launched its own version of the social credit score, it greatly raised the stakes for inhabitants of cities such as Hangzhou and Kuala Lumpur. The former - the brand's home city - has been run using Alibaba's City Brain system since 2016, while the latter has just announced plans to be the first metropolis outside of China to integrate the technology. Used to monitor and manage everything from the metropolitan transport network to social feeds and even input into the design of the urban landscape, if City Brain were to start integrating credit score information it could also begin to decide where consumers should and shouldn't go.

Such a system might prevent a family from a poorer neighbourhood from taking a day trip to window shop in the city's luxury quarter, noting that the resources required to get them there would not be counterbalanced by any spending. A university student could be barred from entering a mixed reality arcade as any further use of such 'debauched' entertainment would lower his credit score and invalidate the lease on his flat. A son might choose not to visit his mother in a disreputable part of the city as the mere association could prevent him from purchasing a particular brand of luxury car he's always aspired to own. By its own metrics of success, this branded city will have organised its denizens in such a way as to maximise revenue, limit its ecological footprint and maintain social order, but the human costs are clear and unaccounted for.



Brands may eventually use our data to control which parts of the city we can access (Visual by Inferstudio for The Future Laboratory)



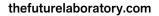
Once public services start to rely on private infrastructure, it will be difficult to regain democratic control (Antisocial series by Mike Campau)

# So, can we avoid an urban dystopia?

It is indisputable that brands will play an ever greater role in the formation and running of the urban spaces in which the majority of the world's population lives. This is not a future we should necessarily be afraid of. There are many advantages to be gained by letting the corporations that we have already willingly allowed to streamline and augment many aspects of our daily lives tackle one of the most complicated organisational challenges in society: making our experience of the city truly consistent, connected and convenient.

There are challenges in achieving this ideal, however. While the digitisation of public space is likely to supercharge consumer engagement with how their urban environment is run, big business will always demand the ability to extract some value in return. Establishing the checks and balances that will incentivise platform operators to realise the true potential of our urban infrastructure without destroying civil liberties will be key.

Get this balance wrong, and we may consign ourselves to a path in which the branded city's metrics for success diverge radically from those of its population. By that point it will be very hard to return to a state in which public services are not wholly reliant on private networks for implementation. Coming generations will not be able to opt-out of such a reality - it is important that brands, governments and the public hold these discussion now in order to realise a vision of the future city in which they do not feel the need to. In the words of urban activist Jane Jacobs: 'There is no logic that can be superimposed on the city; people make it; and it's to them, not buildings, that we must fit our plans.'





Branded utopia or dystopia? Tweet @TheFutureLab with the scenario that you think is the most likely and why (HangerCity by DVTK)

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