

后新冠肺炎疫情时代  
城市的加速智能化

THE ACCELERATED  
SMART(-IFICATION) OF  
CITIES POST-COVID-19

1 认识挑战

尽管新冠疫情带来了众多不确定性，但社会的发展并未暂停脚步，智慧城市的概念也越发受到青睐。在这一概念引导下的未来城市建设中，传感器、摄像头和联网智能手机对人与环境的追踪效率将达到前所未有的水平。面对未来几年可能遭遇的全球经济衰退，在中国，这类智慧城市已然被视作推动城市发展的关键模式。<sup>[1]</sup>

如今，中国各地已有500多座智慧城市处于建设中——政府、开发商和大型科技公司都热情高涨，争先恐后地参与其中，试图领跑这场“智慧”未来的竞赛<sup>[1]</sup>。他们坚信，建设智慧城市有助于保持城市竞争力，并使其在全球城市创新和宜居指数排名中位列前茅。

中国仍处于快速发展的过程中。除了当前不断推进的城镇化进程外，也正由以制造业为主的经济向知识与服务型经济迅速转变。对于我们来说，在中国从事城市设计工作，需要特别纳入对于高科技的考

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摘要

当前，不论是政府、开发商，还是大型科技公司，都纷纷投身于智慧城市的建设中，期望打造出一个高效、方便（且盈利的）的“智慧”大都市，以适应和调和城市发展的快速节奏。虽然由无人机、平衡车和闪亮的反光玻璃高楼等典型智慧城市愿景构建出的未来城市很诱人，但现实是，真正的高品质（智慧）城市包含着自下而上的繁杂和城市活力，这对城市的整体繁荣至关重要。

在Hassell于深圳新桥区城市转型项目竞赛的获胜方案中，设计团队探索了智慧型创新城市首先需要秉持的理念——构建一个能促进包容性、多元性、协作性和韧性的场所。如今，我们还处于新冠肺炎疫情持续的不确定性中，设计团队深知对于智慧城市的豪言将更甚以往，且这将成为一种必要的城市监控方式，用来支持社区建设、防控疫情——构建一个更具韧性和适应性的城市环境，将有助于在大型灾难事件发生时推动城市重新校准、重新组织并实时进化。在此类情况下，城市设计师能否在实现韧性之外，更进一步地设想灾难性事件发生后的城市发展？

关键词

智慧城市；去中心化；适应性；韧性；包容性；多元性

ABSTRACT

Governments, developers and big-tech companies have become enamoured with the possibility of the smart city: an efficient, convenient (and profitable) “smart” metropolis to help accommodate and optimize rapid urban growth. While it is tempting to wash renders of future cities with the typical smart city visions of drones, segways, and shiny reflective glass towers—the reality is that good (smart) cities incorporate a bottom-up messiness and urban vitality which is fundamental to the overall thriving of the city.

In Hassell’s competition winning scheme for the Xinqiao District in Shenzhen—the design team explored the ideas that a smart and innovative city that first and foremost uphold—a place which fosters inclusivity, diversity, collaboration, and resilience. Now through times of ongoing uncertainty in the COVID-19 era, Hassell’s design team expects an even greater adoption of smart cities rhetoric as a form of necessary urban surveillance and to manage and support communities and the containment of the COVID-19—building urban resilience against big disaster events, enabling adaptive environments that can re-calibrate, reorganize, and evolve in real-time as needed. Can urban designers go beyond resilience to imagine cities which thrive and grow out of disaster events?

KEYWORDS

Smart City; Decentralization; Adaptability; Resilience; Inclusivity; Diversity

1. 将数字应用程序整合到社区参与和韧性规划中。移动设备已成为每个个体的延展，捕获了大量独特且高度个人化的数据集。它无声无息地融入我们日常生活的每一个角落，这是否就是智慧城市的终极扩展？

1. Digital app integration in community participation and resilience planning. The mobile device has become the extension of the individual, capturing a multitude of unique and highly personal datasets. Its place in the everyday lives has been seamless and invisible, could it be the ultimate extension of the smart city?



虑，如物联网、5G云网络、自动驾驶和监控等技术，了解它们将如何影响或转化为未来城市发展的成果（图1）。人们都希望在不久的将来，让他们引以为豪的产品不只是“中国制造”，更是“中国设计”。

但是，人们在接纳智慧城市和新技术成为未来都市生活中不可或缺的基本构成要素的同时，也需要秉持批判性的眼光。与由“可持续城市”和“漂绿”等概念滋生的一片片绿色图景类似，在各类项目中融入大量的无人机、平衡车和布满LED屏幕的高楼同样十分诱人。这种智慧愿景被奉为城市品牌与身份的核心。尽管可以理解客户乐于利用此类形象吸引城市开发投资的原因，但对于塑造新城市项目的城市设计师来说，以上种种却都回避了正题：是否应该推动这些技术成为城市固有的本质特性及日常可见的科技设施？还是应该把注意力集中在构建具备包容性、多元性、协作性与韧性的良好城市与社会上？需要在什么程度上将智慧城市的技术要素整合到城市设计中，而非仅仅作为城市形象来展示？

## 2 全球标杆——对智慧城市的不同态度

### 2.1 深圳——一座城市实验室

深圳被誉为中国的硅谷，这里既是创新中心，也是高科技设计和制造的理想场所。自1980年被确立为中国首个经济特区以来，深圳的创新生态系统已在逐步发展（图2），尖端科技公司借助模仿模式，从对创意进行复制和粘贴的“山寨”文化中脱颖而出。当苹果和谷歌等公司还在严格保护自身知识产权的时候，深圳的科技发展在早期阶段就已经开辟了企业聚焦、产业密集，以及开放和共享的土壤。在当时的深圳，人们可以快速投入设计、制作原型、制造、销售、获取反馈等流程，并将其转化为新的创新设计所需要的一切条件。在过去几十年里，这座城市迅速发展，速度甚至超过了自上而下的规划对其的控制。

如今，许多全球知名科技公司都安家深圳，其中包括了比亚迪、

大疆、华为和腾讯。这些公司占据了大片城市土地，在这里设立园区，且无一例外地都在参与探索未来创新型城市的新模式。同时，这些行业巨头也成为了众多初创企业和小型创新企业的孵化器，吸引它们环绕而建。这些公司将这座城市作为实验室，实施并测试各自的大量技术和产品，包括摄像头与GPS监控交通管理系统、面部识别、数字健康记录、无人机配送与监控、5G互联网基础设施等。

在这里，无论是政府还是普罗大众都普遍热爱且乐于接受科技。科技与自然及人的体验一样，都成为了打造高品质城市和社区的关键。

### 2.2 多伦多——监控资本主义

与此同时，谷歌旗下公司“步道实验室”（Sidewalk Lab）曾在加拿大多伦多开启一项雄心勃勃的智慧社区计划，但这个计划已于近日取消。该计划的其中一个愿景便是通过“互联网优先”社区，帮助多伦多成为全球城市创新中心之一。在这个社区中，除了水电、电信和排水系统等城市常规基础设施以外，联网的互联网基础设施也将成为城市核心。这一方案最大的特色在于，试图利用从城市环境中收集的数据来改善市民的生活。

与深圳类似，步道实验室也期望在多伦多创建一个畅通、整合的公共交通系统，以及有利于步行和骑行的城市环境。与此同时，城市的交通，以及商店、餐馆和商业服务也需要尽可能地智能和高效。本质上，这些都是高品质城市的标配——但步道实验室的计划主要通过收集城市环境中的数据来帮助精简和整合城市中各个移动的元素。

虽然有消息称，该计划的取消是由于总体经济形式的不确定，但它确实也曾引发强烈争议——公众认为，数据的安全性难以保障且存在潜在的滥用风险<sup>[2]</sup>。《监控资本主义时代》一书的作者肖沙娜·朱伯夫和其他多位学者也都曾提出反对智慧城市的强烈论断<sup>[3]</sup>。当身处一个极其鼓励最大限度收集数据的城市环境中时，问题也随之出现——试想如果我们失去对自身数据的掌控，且无从知晓数据掌控方会如何使用数据来影响公众决策，将会发生什么？当这些数

据掌握在私人公司手中，他们对我们的了解多过我们自己时，又会发生什么？

3 迈向去中心化的智慧城市

究其根本，“最聪明”且最具韧性的将是那些愿意让市民参与其中，并将他们的意见纳入反馈流程中的城市，唯有如此，才能更好地评估城市发展并调整相关服务和系统。这些系统应该通过智能设备（而非外显的技术展示），无声无息地融入人们的日常生活。

持续的疫情使我们关注到，了解人们如何与城市及他人互动十分必要。此类信息能够帮助我们有效应对当前爆发的新冠疫情，同时促使人们更好地理解城市的发展方向，从而应对未来的健康和气候危机。

随之而来的讨论还包括：人们可以接受多大程度的监控，以及愿意放弃多少隐私。在新冠疫情下，迄今应对最有力的还是那些能够进行早期监控、检测、接触者追踪和严格隔离，并做到信息公开透明的国家。<sup>[4]</sup>例如，此次中国能够成功应对疫情，大数据和人工智能的应用功不可没。通过人们手机中的支付历史和社交媒体帖子，可以收集实时数据。有效的追踪能够了解曾经接近已知病例人员的行踪及其后续与其他人员的接触信息。<sup>[5]</sup>

中国的成功在很大程度上应归功于相关部门，他们获得了这些信息，并且能够根据公众利益需求作出反应和响应。在许多方面，是中国现有的数据规范和集成技术促进了这种响应。比如，以微信为代表的社交媒体平台每月活跃用户基数超过10亿<sup>[6]</sup>，在总人口中占据了相当

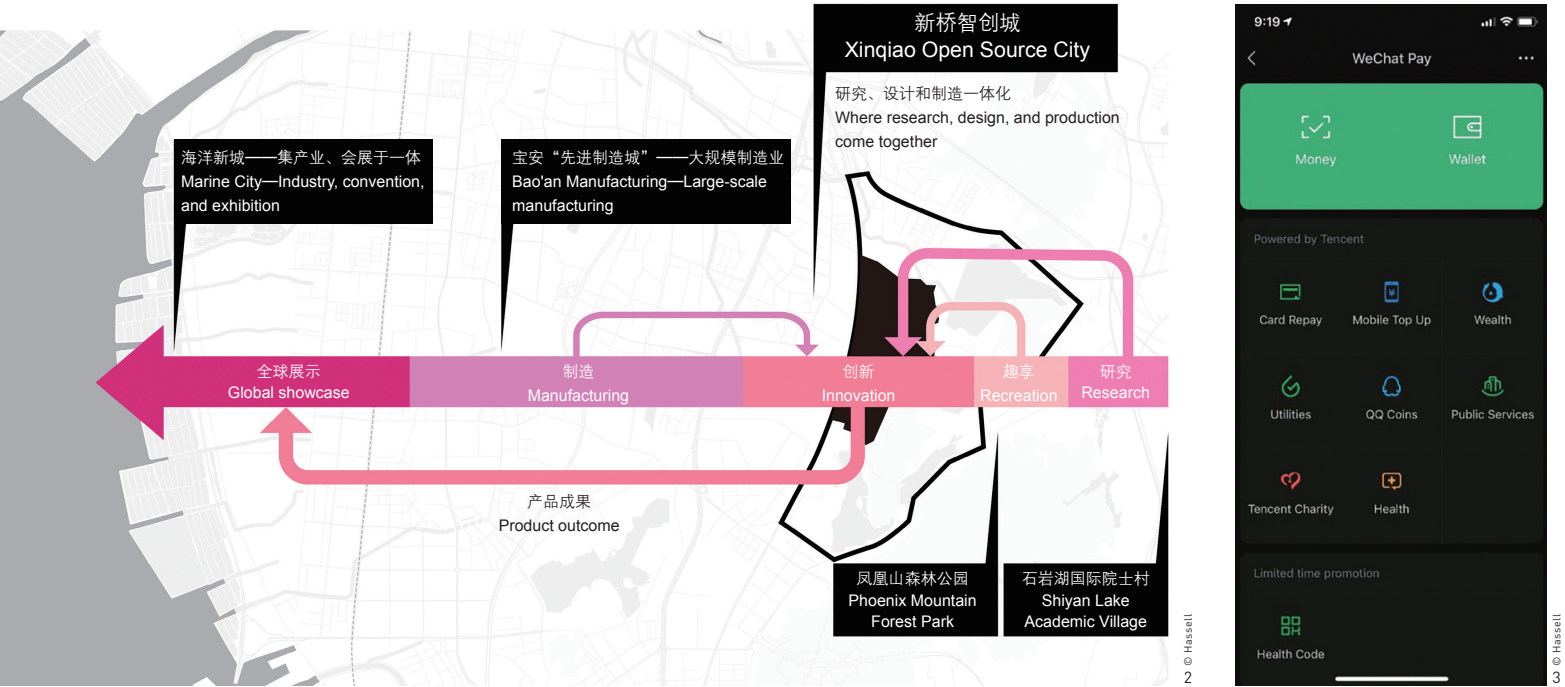
大的比例。具体来说，微信几乎融入了日常生活的每个方面，成为了城市的数字化延伸，有助于更有效地提供城市服务和功能（图3）。

相比之下，澳大利亚政府开发的一款名为“COVIDSafe”的接触者追踪应用下载量为640万次，仅占澳大利亚拥有智能手机总人数的28%。专家认为，唯有当这一占比达到60%，才可能通过该应用有效追踪接触者。<sup>[7]</sup>

多年来，声田（Spotify）和照片墙（Instagram）这些西方国家流行应用程序的用户一直乐于通过提供个人信息，获得他们认为有价值的服务。然而，从COVIDSafe等例子中可以看出，当这些应用程序涉及政府层面时，人们会立即产生不信任感。这就是微信一类应用程序强大的地方，它们极大程度地融入了人们的日常生活，这样就形成了一个稳固的价值定位；等到必要时刻，人们便能放下一些利弊权衡，继续享受这些应用程序对整体生活质量的提升价值。这与智慧城市的许多方面及实现智慧城市的机制有着内在联系。但作为城市设计师，我们更感兴趣的是，当政府开始应对新冠肺炎疫情等事件时，人们会如何看待私营企业与政府机构的交集，人们又是如何感知这一交集的。

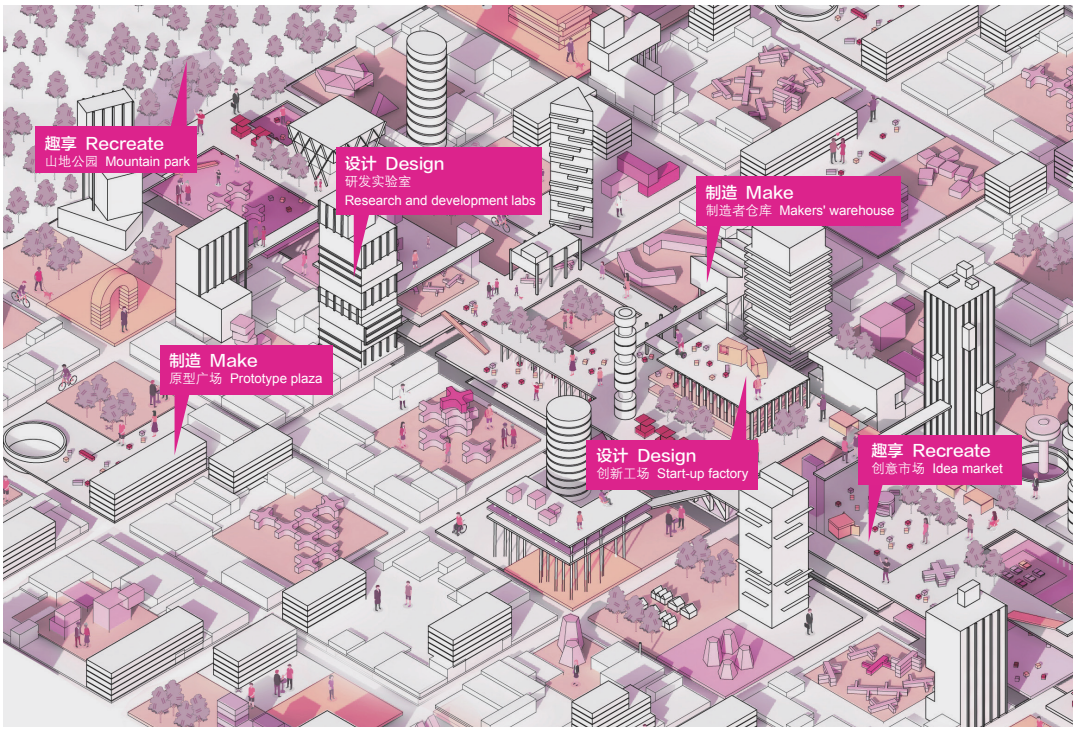
以深圳“新桥智创城”竞赛获奖方案为例，来自Hassell的设计团队期望鼓励居民积极参与到一个开放的框架中，从而实现城市关键组成部分的配置与再配置，探索蕴含其中的城市发展机遇。这一设计方案呈现了一种创新的城市生态系统，如果将开放的信息流应用到城市设计中，就能形成一种由根深蒂固的社区决策权和所有权所共同创造的环境（图4）。设计提出了融建筑与景观为一体的全新公共空间原型，重点在于构建一系列贯穿整个城市的多层次景观廊道（图5，6）。城市公

- 2. 应用于深圳“新桥智创城”的创新生态系统
- 3. 微信屏幕截图
- 2. Innovation ecosystem in Xinqiao Open Source City, Shenzhen.
- 3. Screenshot of the WeChat app





4. “新桥智创城”概念解析：利用城市公共领域构建高度连接的创新生态系统，支持设计、制造与休闲娱乐等活动。
4. Xinqiao Open Source City Conceptual illustration: Urban public realm is used to create a hyper connected innovation ecosystem supporting design, making, and recreation.



共领域成为了恒久而又活跃的测试空间，能够鼓励周边科技企业在景观廊道提供的基础设施中展示和重新配置产品（图7）。

设计方案利用城市公共领域和不同商业运作方式之间的合作与竞争，对未来城市提出了期许——在那里，去中心化的企业家和企业社区与政府自上而下提供的基础设施和整体治理模式形成交集。这种城市模式包含了嵌入的信息流和创意，以及内在的社会适应性和韧性。本质上，这就是“智慧”城市所追求的真正品质。

#### 4 前进——加速

这就引出了本文探讨的核心问题：如何识别当前阻止设计师创建去中心化的智慧型和创新型韧性城市的障碍？作为设计师，我们提倡通过开放而丰富的信息交流，促进共享与协作，这是推动高品质城市发展的关键。进一步来说，我们可以开始寻找机遇，让设计师参与到有关技术在城市公共领域中应用的对话中，并帮助提供解决方案，以此来响应用户需求和社会整体利益（图8）。

这方面最吸引人的是，智慧城市更多地依赖于个人在上述这些“智慧”层面的参与，而不是嵌入到城市中的二级监控系统。在深圳“新桥智创城”项目中，设计团队设想并构建了一些系统，让公众通过更快速且可迭代的开放设计平台，亲自参与所在环境的设计（图9）。这将有助于培育出“开源城市”。在这种模式下，技术虽不可见，却已融入整个城市发展过程之中。

如果从微信、COVIDSafe等这些现实生活中的例子出发，上述在城市中构建系统的一个关键问题将是——如何以可接受且透明的方式收集个人数据和用户偏好，并将其作为城市发展的组成部分，从而有效地为城市政策和基础设施规划提供信息？关于整合和消除个人信息收集和使用方式之间的障碍，我们尚不知晓后新冠肺炎疫情时代会出现什么情况。但在疫情爆发期间，出于公众利益考虑而对数据的收集与利用得到了整合并广为接受。由此看来，我们或许将看到智慧城市技术能够更多地用于促进快速创新和开发。

考虑到城市持续发展需要经历一定的时间，我们有必要从当下就开始规划，这样才能看到以开放数据为核心的城市化为城市发展带来的机遇。在城市公共领域中融入更多开源方式，将有助于发现更具针对性的投资机会，并为城市开发与升级开启新机遇。最终，如果我们能够定义出理想的“未来”韧性城市，就可以通过分散式信息系统进行反馈，从而在基础设施和个人层面上一步步使理想成为现实。“智慧城市”将不仅仅是覆盖于城市上方的一层表象，而是可以帮助管理城市当前需求和运作的一种策略。“智慧城市”理念应该深植入整个规划过程，促进公众积极参与，无形地融入城市使用者的日常生活和活动中，这样才能实现高度包容和平等的决策过程。

正如荷兰裔美国社会学家萨斯基娅·萨森所指出的：“我们需要的是让技术城市化，并让它为用户服务。社会学家提倡的‘纵向水平化’（即维基解密的城市变体）呼吁开源的城市化和无数由底层的小型干预措施自下而上构建的城市。”<sup>[8]</sup> LAF





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## 1 Identifying the Challenge

The concept of the “Smart City” has been increasingly embraced as society navigates further through the ongoing uncertainty initiated by the COVID-19 pandemic. It is the idea of an urban future in which sensors, cameras, and networked smart phones facilitate unprecedented efficiency to track people and the environment. In China, this smart city model for development is being earmarked as a key to spur urban development through the coming years of expected global economic downturn.<sup>[1]</sup>

Already more than 500 smart cities are being built across China—with governments, developers, and big-tech companies enthusiastically scrambling to establish the cities at the front of the race towards a “smart” future<sup>[1]</sup>. They believe that it will help them maintain a competitive edge and position that their cities at the top of global rankings in terms of innovation and liveability.

China is a nation still in the process of rapid development. In addition to the ongoing process of rural to urban migration, the economy is going through a shift from production-oriented towards knowledge- and service-based. For us, working as urban designers in China, it is particularly important to consider

technologies, such as the Internet of Things, 5G cloud-based networks, and autonomous vehicles and surveillance, and understand how they might influence or be translated into future urban developments (Fig. 1). It is hoped that soon there will be a proud reputation for products not just “Made in China” but instead “Designed in China.”

While embracing smart cities and new technologies as fundamental and unavoidable aspects of future urbanism, people also need to maintain a degree of criticality. Similar to the concepts of “Sustainable City” and green-washing that take place in marketing images, it is tempting now to overlay the project visions with numerous drones, segways, and towers covered in LED screens. This vision of smartness is touted as central to the branding and identity of the city. While it is understandable that clients have an interest to use these images to attract investment for urban developments, it begs the question for urban designers shaping new urban projects: Should urban designers facilitate the inclusion of these technologies as intrinsic and visible elements to the environment? Do we instead focus on the fundamental principles of what makes good cities and societies—fostering inclusivity, diversity, collaboration, and resilience? And to what degree should the smartness of cities be invisible and be integrated into practices of urban design?

## 2 Global Benchmarking—Differentiated Attitudes towards Smart Cities

### 2.1 Shenzhen—An Urban Laboratory

Often claimed to be the Silicon Valley of China, Shenzhen

5. “新桥智创城” 中央创新廊道
6. “新桥智创城” 高架中央创新景观廊道
5. Central Innovation Corridor of Xinqiao Open Source City
6. Elevated Central Innovation Landscape Corridor of Xinqiao Open Source City



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7. “新桥智创城”初创企业  
和创新园区

7. Start-ups and  
Innovation Parks in  
Xinqiao Open Source  
City

is a hub of innovation and an ideal place for high-tech design and manufacturing. Established in 1980 as China’s first Special Economic Zone, Shenzhen’s innovation ecosystem has grown organically (Fig. 2), with cutting-edge technology companies emerging out of the “shanzhai” culture of copy-paste innovation through imitation. While the likes of Apple and Google strictly protect their IP, the early stages of Shenzhen’s tech emergence were founded on an environment of proximity, density, openness, and sharing. It was a place where you had everything you needed to rapidly design, prototype, manufacture, sell, get feedback, and recycle into a new innovative design. Over the last few decades, the city has grown rapidly, outpacing the ability of top-down planning to control its development.

Shenzhen is now home to many globally known technology companies, including BYD, DJI, Huawei, and Tencent, which hold large areas of land in the city where they house their campuses and are essentially exploring new models for future innovative cities. Meanwhile, these companies have become attractors and incubators for start-ups and small-scale innovators following to establish around them. They use the city itself as a laboratory in which to implement and test their technologies and products. These include camera and GPS monitored traffic management systems, facial recognition, digital health records, drone delivery and monitoring, 5G internet infrastructure, and a myriad of others.

It is a place where there is widespread enthusiasm and embracing of technology by both the government and the general public. Technology is placed on an equal footing along

with nature and people’s experience as key points of making great cities and communities.

## 2.2 Toronto—Surveillance Capitalism

Meanwhile, in Toronto, Canada, the Google subsidiary Sidewalk Labs had an ambitious plan for a smart neighborhood which was recently cancelled. Part of the project’s vision was to help make Toronto a global urban innovation hub through an “internet first” community, in which the provision of networked internet infrastructure would be a core provision alongside the normal infrastructure required by a city including power, water, telephone, and sewerage. The key point of difference for the proposal from Sidewalk Labs was in the intent to use data collected from the urban environment to improve the quality of life for its citizens.

Similar to Shenzhen, the intention was to create a smooth and integrated public transportation system and an urban environment conducive to walking and cycling. At the same time, transport in the city and the servicing of its stores, restaurants, and business would also need to be as smart and efficient as possible. Essentially, these are all the basic things you can find in a good city—but with Sidewalk Labs, the collection of data within the urban environment was planned to help streamline and integrate the various moving parts of the city.

While it has been suggested that the cancellation of the project is due to general economic uncertainty, the project has faced significant scrutiny from the public around fears about data security and potential for misuse<sup>[2]</sup>. Scholars such as Shoshana Zuboff in her book *The Age of Surveillance Capitalism* have developed strong arguments against the smart city for this reason<sup>[3]</sup>. In an urban environment enhanced to facilitate maximum data harvesting, questions start to arise about what happens when we lose control of our data, having a lack of knowledge around how they are used to affect our own decision-making processes. What happens when these data are held in the hand of private companies who stand to know more about us than we know ourselves?

## 3 Moving towards a Decentralized Smart City

Ultimately the “smartest” and most resilient cities will be the ones that can willingly engage their citizens and include them into a feedback loop to assess the city and adjust its services and systems accordingly. These systems should be integrated transparently into people’s everyday life through their smart devices, rather than through overt displays of technology.

The ongoing pandemic has drawn attention for the need to



understand how populations engage with cities and how people interact with others. The purpose of this information becomes essential for the response to the current outbreaks of COVID-19, and further this enables us to better understand how the city should evolve to respond to future health and climate crises.

What arise are discussions around the extent of monitoring that is acceptable and how much of the private data people are willing to give up. In the COVID-19 cases, countries with the most successful response so far are those that have enabled early surveillance, testing, contact tracing, and strict quarantine together with transparent and open communication to the public.<sup>[4]</sup> For instance, China’s employment of big data and artificial intelligence have contributed to its successful response. Real-time data was collected from people’s mobile phones through payment history and social media posts. Effective tracking was implemented to trace the movement of people who had been in proximity to known cases and their subsequent interactions.<sup>[5]</sup>

Much of this success can be attributed to relevant authorities, who have access to this information and then were able to react and respond as needed in the public interest. In many ways, this response has been facilitated by the existing data norms as well as integrated technologies that already exist within China. Social media platforms such as WeChat have an active monthly user base of more than 1 billion people<sup>[6]</sup>, representing a significant portion of the population. WeChat’s extensive integration into almost every aspect of daily life has made it a digital extension of the city contributing to more efficient delivery of city services and functioning (Fig. 3).

In contrast, a contact tracing specific app developed by the Australian government called COVIDSafe was downloaded 6.4 million times, representing 28% of the total number of Australians who own a smartphone. However, for digital contact tracing to be effective, experts claim that it is necessary to have an uptake of 60%.<sup>[7]</sup>

Users of popular apps in the West such as Spotify and Instagram have been willingly providing personal information for many years till now in exchange for services that they see as valuable. However, there is an immediate distrust when the government is involved as we have seen through apps such as COVIDSafe. This is where apps such as WeChat become powerful because of their incredible integration into all aspects of life. It becomes a strong value proposition and enables people to forego some of the trade-offs for the benefits such apps offer to the overall quality of life. This is intrinsically connected to many aspects of the smart city and the mechanisms which enable it. However, what is interesting is how people see the intersection

between private enterprises and government institutions beginning to respond to the issue and how the population perceives this.

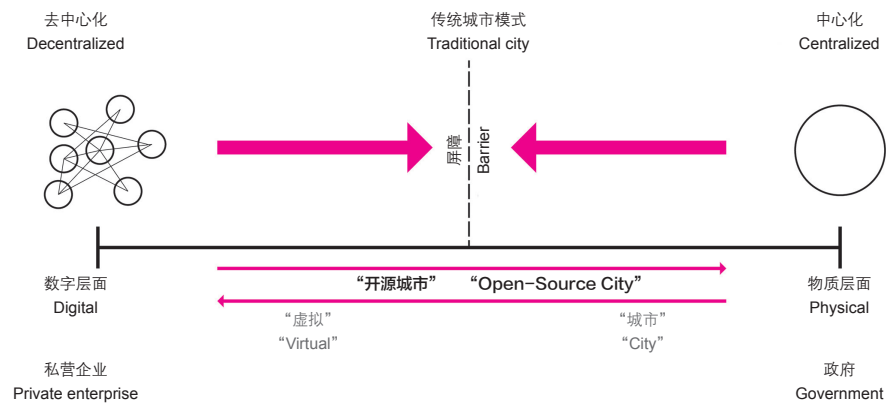
In Hassell’s competition winning scheme for “Xinqiao Open Source City” for Shenzhen, the design team explored the urban opportunities contained by actively engaging the population within an open framework that enable the configuration and reconfiguration of a key part of the city. The proposal of this scheme was for an innovative urban ecosystem that could emerge if the open flow of information is applied to the design of cities, allowing a co-created environment with an ingrained sense of community authorship and ownership (Fig. 4). The design, a new prototype for public space where architecture and landscape is fused together, is focused on a series of multi-layered landscape corridors which extend through the city (Fig. 5, 6). The urban public realm becomes a space for constant and active testing, whereby the surrounding tech businesses are encouraged to display and reconfigure within a basic infrastructure provided by the landscape corridor (Fig. 7).

By leveraging collaboration and competition amongst the public and different business operations within the city, the scheme builds on the opportunities for the future city where the intersection of a decentralized community of entrepreneurs and enterprises with the top-down governmental delivery of infrastructure and overall governance. This city model contains a built-in flow of information and ideas, and an inherent social adaptability and resilience. In essence the true qualities to which the notion of “smart” city aspires.

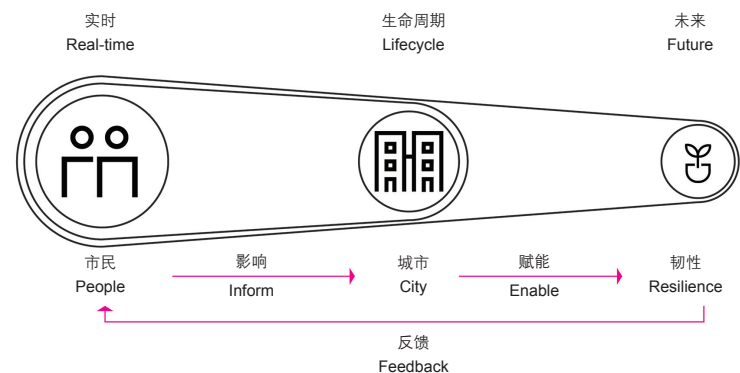
4 Moving Forward—Faster

This leads us to the core issue that this article explores: identifying the currently existing barriers to create a decentralized form of the smart, resilient, and innovative cities that designers

8. 理解公共与私人领域的界限与交界面。传统的城市在了解市民生活需求和提供相应的物质和社会环境方面正面临信息脱节问题。基于对公众需求更加深刻的认知，智创城如何帮助创建一个更加公平的响应式城市环境？
8. Understanding the public versus private poles and the interface challenges. The traditional city faces an information disconnect between understanding its citizen's lives and providing the physical and social environment to support them. Through a greater understanding of its people, how can the "open-source city" enable a more equitable and responsive urban environment?



9. 实时数据和嵌入式城市系统。随着城市的自我重新配置，它将逐步发展以应对各种与人和环境相关的未来挑战。这些变化发生的时间各不相同。因此，及时了解人们的需求可以帮助扩展城市的生命周期，从而实现更具韧性的城市未来。反过来，这一系统又可对未来人们可能的需求进行反馈，推动城市渐进的积极变化。
9. Real-time data and embedded city systems. The city's continual evolution is expected as it reconfigures itself to meet future challenges, both from its people and the environment. These changes occur over different time periods. By understanding the people's needs in real-time, the lifecycle of the city can be augmented to enable a more resilient future. Ultimately it could be possible to feedback projected future needs back to the people to provide a gradual positive change.



all strive for. We advocate for an open and rich exchange of information to help accelerate sharing and collaboration which are essential for good city development. Further to this we can begin to look for the opportunities that designers can participate in the conversation around how technology is used in the public realm and help deliver solutions that are responsive to user needs and to the general benefit of society (Fig. 8).

What is most interesting about this user-centered approach to smart cities is that, it is much more dependent upon the participation of individual engagement in these aspects of “smart” rather than secondary systems of monitoring that is embedded into cities. In the project of Xinqiao Open Source City of Shenzhen, the design team imagines and creates systems through which the public themselves can contribute to the design of their environment through more rapid and iterative open design platforms (Fig. 9). This will help foster an “open-source city.” In this model, technology would be invisible but integrated throughout.

If taking these real-life examples, such as WeChat and COVIDSafe, as a starting point, a key issue in these systems will be how individual data collection and user preferences can be used in an acceptable and transparent way to effectively inform urban policy and infrastructure planning as part of the city’s development. We are yet to see what will emerge in the post-COVID-19 world regarding the integration and removal of barriers between how our personal information gets collected and used. Through the integration and broader acceptance of data collection and use for public benefit as seen during the management of the pandemic outbreak, we may start to see greater adoption of smart city technology to help foster rapid innovation and development.

Considering the timeframe involved in the continuous evolution of the city, it is important to start planning now, to look at the opportunities that an open data urbanism could have for urban development. Enabling a more open-source

approach and integration into the urban public realm of the city will help find targeted investment opportunities and unlock new opportunities for development and enhancement. Ultimately if we are able to define a desired “future” resilient city, this can be fed back through a distributed information system to make those incremental steps at both an infrastructure level and an individual level. The “smart city” will be more than a layer that exists over the city surface to help manage its current needs and operations. It should be embedded throughout and enable active participation and invisible integration into the lives and actions of all its users and as a consequence allow for a highly inclusive and equal form of decision-making.

As Dutch-American sociologist Saskia Sassen notes, “What we need instead is to urbanize technology and put it at the service of users. The sociologist pushes for ‘horizontalizing the vertical,’ an urban variant of WikiLeaks, and calls for open-source urbanism, where the city is made from the bottom-up, at a ground level, and from a myriad of little interventions.”<sup>[8]</sup> **LAF**

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