**What Makes Smart Cities Smart?**

Samar Kaunain

**1** Evolving technologies are reshaping our lifestyles much faster than we even realize. The widespread availability of smart technologies has had an impact on practically everything from the way we work to the way we communicate, shop, plan and commute, and its effects can be seen in every aspect of our lives. What once were science fiction fantasies are turning into realities right in front of our eyes.

**2** We are not using flying cars to get to work or wearing silver foil jumpsuits yet. However, we are close to the day when we will see digital billboards communicating with passers-by as in the sci-fi movie *Minority Report*. As the world’s population increasingly becomes tech savvy, the cities need to evolve as well in order to be in sync with the times. Information technology is becoming the fourth utility, and more and more governments and municipal planners are embracing smart city projects.

**3** Globally, as many as 180,000 people relocate to cities every day, and this influx raises several challenges. Increasing urbanization means additional consumption of already depleting resources. Despite shrinking budgets, governments have to provide more and more services even before they can collect taxes. Rapidly growing urban populations are straining inadequate infrastructures. Around the world, most cities have outdated foundations making them ill-equipped to fully cater to food, water and energy needs of their inhabitants.

**4** It is obviously challenging to supplant the existing infrastructures with new ones. A faster, and more practicable solution is to digitize and modify existing infrastructures so that cities can intelligently cater to new demands as they arise. A number of cities in industrialized societies are already doing so, Amsterdam being just one example. The city won the Smart City Award for its innovative Open Data Program for transport and mobility. Amsterdam’s Department of Infrastructure and Transportation makes traffic and transportation data publicly available. Using a mobile app, smartphone users can easily access real-time transport and travel information on parking (tariffs, availability and time), taxi stands, cycle paths and traffic jams.

**5** In Arizona’s city of Mesa, the police department has reduced crime rate by 25 percent, thanks to an altered smart policing approach. With telecommunications networks breaking down barriers to rapid communication, the police department shares information with police units in almost 50 cities throughout Arizona. In addition to making investigations more effective, this saves the department both time and money.

**6** Existing infrastructures can be improved by retrofitting, which involves simply modifying the equipment that is already in service. The San Francisco Public Utilities Commission, for example, is retrofitting its 1,000 mile waste water system with sensors to spot and repair leaks. This prevents the overflowing of drains in the storm season, and mitigates the risk of mixing public water with untreated sewage.

**7** Of course, a more radical approach to dealing with the rising population and dwindling resources is to build entirely new smart cities. Many of us are in awe of the city of Panem in the movie *The Hunger Games* in which residents are mostly preoccupied with fashion, food, and entertainment. Despite its dystopian view of the future, the movie provides what some would consider a glimpse into the future.

**8** In the modern age, one of the most ambitious smart city projects is Masdar City, currently being built in Abu Dhabi. With a price tag of $22 billion, it is due to be fully functional by 2025. Masdar’s foundations are not being laid just with bricks and mortar, but are being weaved into the city’s infrastructure through social innovation and technology. Deriving energy from a solar farm located outside city limits, Masdar would use low energy appliances, thus saving on energy consumption. Instead of petrol-fueled cars, Masdar will only allow self-running electric cars which drive through specially built tunnels.

**9** Many critics are already questioning the practicality of Masdar, claiming that by the time the city is built, many of the technologies on which its foundations are based will become outdated. On the other hand, proponents of Masdar contend that while sooner or later every technology gets outdated, this should not be reason enough for not ushering in new technologies. Whether it is retrofitting existing cities or building new smart cities, the bottom line is that to meet the changing needs of urban populations and strained infrastructures, cities must become smart too.

**智能城市何以智能？**

萨马·卡纳恩

1 不断发展的技术正在重塑我们的生活方式，其速度之快超乎我们想象。智能技术的广泛应用几乎对各个方面都产生了影响，从工作方式，到交流、购物、规划和通勤方式等，其影响遍及生活的方方面面。那些曾经只存在于科幻小说里的奇思异想，正逐渐在我们眼前成为现实。

2 当然，我们还不能开着飞车去上班，也不能穿银箔连身衣。但是，这样的日子即将到来，就像在科幻电影《少数派报告》里一样，我们能看到电子广告牌与路人交流。随着世人逐渐成为技术控，城市也必须随之发展从而与时代同步。信息技术正逐步成为第四项公用事业，而且越来越多的政府和市政规划师正欣然接受智能城市项目。

3 从全球来看，每天有多达180000人移居到城市。这样的人口流入给城市带来多种挑战。城市化程度的提高意味着需要更多地消耗已濒临枯竭的资源。尽管缩减了预算，政府还没来得及征到税，却必须提供越来越多的服务。迅速增长的城市人口使已然不足的基础设施愈发紧张。从整个世界来看，多数城市的基础建设已经落后，陈旧的设施根本无法满足其居民对食品、用水和能源的需求。

4 要完全更新现有的基础设施，显然颇具挑战性。一个更快捷、更实际的解决途径是将现有基础设施数字化并进行改进，这样城市能够随着不断地扩张智能地满足新的需求。工业化国家里的一些城市正在走这条路，阿姆斯特丹就是一个例子。阿市因其创新型的交通运输“开放数据项目”而荣获“智能城市奖”。阿姆斯特丹的基础设施与交通运输厅向公众开放交通运输数据。只要使用移动应用程序，智能手机用户就能轻易地获取实时交通和旅行信息，比如停车（收费、车位信息及其时间）、出租车招呼站、自行车道以及交通拥堵情况等。

5 在亚利桑那州的梅萨市，由于改用了智能警务方法，警察部门将犯罪率降低了25%。由于远程通信网络打破了通讯障碍，从而实现快捷通讯，警察部门可以与亚利桑那州近50个城市的警察机关分享信息。这样，不仅使得调查的效率更高，也节省了警察部门的时间和金钱。

6 现有的基础设施可以通过改造实现优化，这只需对现有的设备做些改进。比方说，旧金山市公用事业委员会正在改造该市1000英里长的废水处理系统，新装配的传感器可以发现并修复漏点。这就可以防止雨季时下水道泛滥，降低公众用水与未经处理的废水混到一起的风险。

7 当然，要解决不断增加的人口和不断减少的资源问题，更彻底的方法是建设全新的智能城市。我们许多人对电影《饥饿游戏》中的帕纳姆市心怀敬畏，那里的居民多数沉迷于时装、食品和娱乐。尽管影片对未来持悲观态度，在一些人看来，该影片能让人们窥见世界的未来。

8 在现代，最雄心勃勃的智能城市项目是马斯达尔城，这是目前阿布扎比正在兴建的一座城市。该项目号称投资220亿美金，预计到2025年完全投入运行。马斯达尔城的地基并不仅仅是用砖块和灰浆建成的，而是通过社会革新和技术融入城市的基础设施建设。城市的能源来自城外的太阳能农场，这样马斯达尔城就可以使用低能耗电器，从而节省了能源消耗。马斯达尔城

禁用汽油作燃料的汽车，只允许使用全自动电力驱动汽车，在专用通道上行驶。

9 许多批评家已经在质疑马斯达尔城的实用性问题，认为到该城市建成时，其基础设施赖以建立的许多技术也就要过时了。而另一方面，马斯达尔城的支持者则争辩说，任何技术迟早都要过时，这不足以成为拒绝引进新技术的理由。不论是改造现有城市或新建智能城市，其根本在于，要满足城市人口和紧张的城市设施的不断变化的需求，城市也必须智能化。