ROADS & INFRASTRUCTURE AUSTRALIA

THE TOP 4 OBSTACLES TO ESTABLISHING A SMART CITY

The smart city – an efficient, economic hub driven by technology and fueled by 'smart' ideas – is one of the major trends in the infrastructure sector today.

While it is a broad subject, and open to interpretation, there are many ideas and innovations that are helping to making a city 'smart', including intelligent transport systems, the Internet of Things, data optimisation, smartphone technology and autonomous vehicles, to name a few.

If Australia can turn its capital cities into smart cities, we have a very bright future ahead indeed. However, there are a number of obstacles to introducing smart city concepts effectively, which need to be addressed to ensure the idea of the smart city can become a reality.

1. The Smart Citizen

Arguably, society has never been more engaged in technology. The advent of smart phones, social media and communications technology have opened up so many possibilities for efficiency.

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Many proposed smart concepts require the participation of the everyday citizen – Uber, Menulog, Deliveroo; these car sharing and delivery applications

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that are changing the way services are delivered empower and rely on the everyday citizen for them to function. Google Maps, and even Melbourne's TramTracker, rely on information taken from users to help improve their functionality and 'smartness'. A new delivery startup – Passel – is empowering the smart citizen by providing an innovative delivery platform that, like Uber, is giving everyday citizens the opportunity to be a part of the delivery process by sourcing delivery operators from an on-demand network of locals.

However, the question is: how do we empower the citizen to drive the development of these concepts, and how to keep them involved?

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The issue with many smartphone applications is that they constantly require updates, updates that may not be possible for some smartphone models and makes. Older generations of citizens may not be familiar with the latest mobile technology available, let alone own a smartphone.

If a significant proportion of society isn't using these smart concepts or lack the capability, can we ever achieve a functioning smart city?

2. Policy

Driverless vehicles are one of many technological milestones that may become a defining factor in the development of smart cities, and they are already raising a number of questions and ethical dilemmas through their implementation.

Car manufacturer Mercedes Benz was in the spotlight regarding this topic when its manager of driver assistance systems and active safety Christoph von Hugo reportedly said in an interview at the Paris Motor Show in 2016: "If you know you can save at least one person, at least save that one. Save the one in the car".

The manufacturer's stance on the ethical dilemma of who to save in an accident is clear, but it raises other concerns. If an autonomous vehicle, for instance, has the option to save a group of people or just the one in the car, what will the vehicle do and who decides that? What role do the manufacturer and the regulators have in this? It's a complex situation that needs to be addressed to best optimise autonomous vehicle technology and, in turn, the smart city.

National frameworks and policy, and collaboration between the public and private sectors, are needed here to ensure that this kind of technology is introduced in the safest and smartest way.

3. Acceptance

The societal acceptance of new technology and new ways of doing things will always be a deciding factor as to whether or not something will work.

How people use technology – and more realistically, how individuals will abuse technology – are aspects of the smart city conversation that need to happen.

The idea of cyber security has already been explored as a very real element of autonomous vehicles – what is going to happen to the passenger in a driverless vehicle if it is hijacked remotely?

When drone home delivery comes to fruition will the average person order food or go shopping down the road because it's more convenient (thus negating the true benefits of the technology)?

Will car enthusiasts refuse to adopt driverless vehicle technology based on their passion for driving?

One way to overcome these obstacles is to educate the public. Engagement with the public and the people using this technology will be a major element in the adoption and acceptance of smart city concepts.

4. Implementation

Putting restrictions on smart city concepts may have a role to play in how they are socially accepted, but also how they are implemented.

It's generally accepted that the introduction of driverless technology will be staggered, with variations on autonomous car technology being introduced in stages. A road network is never going to be able to provide the capacity or capability to switch from a manual fleet of vehicles to a fully autonomous one instantly.

How this technology is rolled out requires not just comprehensive planning and staging, in the case of autonomous vehicles, but also stakeholder engagement.

Singapore-based firm oBike launched its dockless share bikes in Melbourne in June, introducing a large number of its yellow bikes into the city's CBD and inner suburbs.

The oBike is unlocked via a smartphone app and can be parked anywhere the user decides to leave it after their ride. The freedom the dockless bikes boast, however, has been used and abused extensively.

This past September, 42 oBikes were fished out of the Yarra River and social media has been flush with sightings of the yellow bikes in inaccessible places, including signposts, fences and even trees.

Why have Melburnians so quickly rejected the seemingly efficient and effective, and green, new mode of transport around the city?

That is one big question that needs to be asked in the case of oBikes, but a similar question: 'how can we implement smart city concepts effectively and appropriately?' is something that needs to asked with any new smart city technology.