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From Possibilities to Practice

The Committee for Sydney

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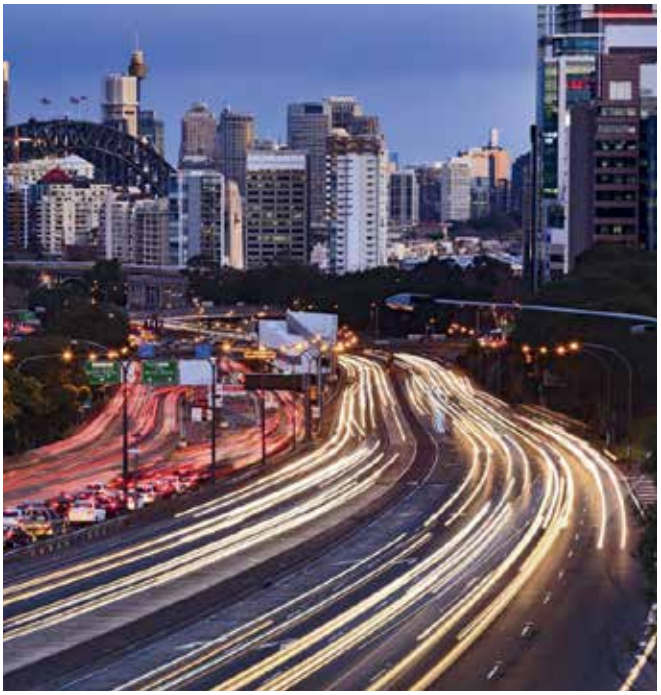


ALL OUR OWN WORK – FOREWORD

By the time a child entering primary school today turns 40, over 70% of the world's population will be living in cities. For New York's former Mayor Michael Bloomberg, that simple statistic reinforces a simple observation, what happens in cities matters now more than ever.

Contests of opportunity and risk are turning the world's leading cities into policy labs as they harness "a capacity for diverse economies, a tradition of problem solving free from excessive partisanship and a resilience to external shocks"[1] to forge a rising urban civilisation in the 21st century.

As Australia appoints its first Federal Minister for Cities and the Built Environment, the link between how well cities engage the expectations and values of their metropolitan population and our national collective ambitions for growth, jobs, sustainability and inclusion, has become both stronger and more urgent.

The Committee has always promoted the importance of cities and a recognition of their role in a knowledge and innovation-based economy. So we welcome the prospects for greater collaboration between Federal, State and local government around strategic interventions and investments for cities. One of the new challenges is to recognise how the management of liveability and productivity will change – is being changed – in this digital and collaborative era.

At the heart of that challenge are the same digital and disruptive driving forces for connection, communication and collaboration that are upending settled institutions everywhere and their practices of investment, performance, governance and leadership.. The economy and society are now irretrievably digital. Nowhere is that revolution being played out more fiercely and with more consequence than in our cities.

1 https://www.foreignaffairs.com/articles/2015-08-18/city-century

Whether or not they are called 'smart cities' or 'intelligent communities', cities everywhere are exploring how digital technologies, platforms, mindsets – and the data about city performance and experience – improve the way they manage resources, deliver services, design and build infrastructure and engage with and learn from, their residents. The way cities are shaped, governed, experienced and shared – in other words, their core business model – is being fundamentally changed. While the advent of enabling and transformative technologies and devices is in itself bringing changes to the way cities function, the lesson from the 'smartest' cities and 'most intelligent' communities is surely that they actively organise and manage how they can function most effectively to exploit new opportunities and deal with the risks they face.

Two years ago in *#wethecity: collaborating to compete in the digital era*, the Committee for Sydney set out three ambitions for Sydney in this new era to be:

- An open city of collaboration and social innovation where ideas and solutions are widely shared in the common cause
- An engaged city with participation as the basis of good governance and rising trust
- A data-informed city of high collective intelligence and evidence based decision-making

These are to be enabled by new digital platforms, social media, the internet of things – and by a mindset which sees city governance and management as something for all to be involved in as 'co-producers'

We stressed then, and reinforce now, that what matters for cities at this moment is not simply that they have the right technologies and infrastructure in place, however transformational they are in principle. What matters is the requisite mindset, culture, institutional capacity and governance to exploit them and embrace the disruption they pose to established ways of working. As a recent UK report puts it, the challenge for 'smart cities' and those who manage or govern them is not about accessing digital technology but rather incorporating it into their workflow and their problem solving processes[2].

This is a really profound change as cities re-imagine and re-engineer how they operate in a digital era. In the process, and using the same tools, platforms, partnerships and behaviour, they have to realise this has to be "all our own work"; conceived, designed and executed with and by citizens, not to and for them. Smart cities need to be understood as social and collaborative: by instinct; by default; and by preference, not just because they want to be, but because they work better that way.

It is in this sense that the Committee for Sydney stressed two years ago in *#wethecity* that "smart cities need smart governance".[3] By that we meant how Sydney, as a growing metropolis of 4.5 million, reaching 8 million by mid-century, responded to it. We also meant governance, not just as leadership or management of a council but also how their structures, platforms and ways of working enable people who live and work in the city – and governments' own staff – participate in designing and delivering services and outcomes for their communities.

"what matters for cities at this moment is not simply that they have the right technologies and infrastructure in place ... What matters is the requisite mindset, culture, institutional capacity and governance to exploit them and embrace the disruption they pose to established ways of working."

2 http://www.nesta.org.uk
3 http://timwilliams.placemakingresource.com/2013/08/15/we-the-city-collaborating-to-compete-in-the-digital-era/

Of course, much has changed since 2013. The economic momentum of Sydney has intensified and the city is once again a key engine of national growth. At the heart of this is the professional services industry, with stellar performances by the finance, ICT and creative industries sectors, in which Sydney has a dominant position in Australia. Their location in Sydney has provided fertile ground for the emergence of a strong centre for "*fintech*" of national and regional significance.

The progress of this sector in Sydney echoes some key themes of this report as it combines digital with analytics, cloud platforms, consumer empowerment and exceptional collaboration between the public and private sectors, resulting in transformed business models for financial services.

Since *#wethecity*, we have seen a number of state or local government initiatives based on digital technologies, social media and the 'internet of things'. At their best, these have re-designed business processes and services, empowered consumers, enabled greater public access to key government or council data and provided more effective platforms for participation and communication.

However, as we argued in *#wethecity*, the fractured and siloed nature of governance in Sydney has held back momentum towards a 'Smart Sydney'. It impairs the adoption and coordination of what innovation there has been. Because of this fractured city governance, the scaling up and wider dissemination of local initiatives and innovations pose special and serious challenge here – challenges not faced to this degree by many of the cities with which Sydney competes.

In *#wethecity*, we called for the establishment of a unit to collate and measure Greater Sydney's key performance data as part of the metropolitan governance framework that allows Sydney to compete with other global cities. We also called for a digital dashboard to be introduced, along the lines of those emerging internationally, as a platform of data sharing, engagement and social innovation, encouraging Sydneysiders, academia and business to participate by providing their own data and by suggesting their own solutions to city-wide challenges.

We are delighted the NSW Government is establishing the Greater Sydney Commission to improve coordination across government agencies and councils[4]. Linked to this is a proposal to establish a Greater Sydney digital dashboard of the kind we advocated. Both initiatives are now in train and represent a huge investment in a more connected and collaborative 'smart' Sydney.

4 http://www.planning.nsw.gov.au/Plans-for-Your-Area/Sydney/A-Plan-for-Growing-Sydney/Greater-Sydney-Commission

Further government innovation: the collaborative economy

Another part of the emerging digital environment of Sydney since *#wethecity* relates to the growth of peer-to-peer initiatives, in what is being called the 'Collaborative Economy'. Sydney is of course the home of one of the world's first car-sharing companies and is now a very successful market for Uber with its mould-breaking approach to data and tech-enabled peer-to-peer taxi service. The NSW Government is about to present its conclusions from its point-to-point transport review. The Committee believes that 'smart regulation' is a key part of being a smart competitive city and that 'digital disruption' means more empowered consumers and communities.

The trends we identified two years ago towards digital transformation and collaboration are unstoppable – and are fundamentally changing business models across all sectors. Indeed they are redefining the very boundaries of the 'public' and the 'private' and how communities shape their social lives, working environments, governments and their city. This report is part of the Committee for Sydney's continuing contribution to promote understanding about the potential of 'digital transformation' – and the action that needs to be taken to exploit it for Sydney. Our aim is to speed up the move from possibilities to practice and by reviewing some international exemplars of implemented best practice, to cut out some of the learning time and prototyping costs involved in effecting similar transformation in Sydney. Building quickly on what other cities have already done will enable us to compete with them even more effectively.

LUCY HUGHES TURNBULL AO
CHAIR
COMMITTEE FOR SYDNEY

INTRODUCTION

Everywhere you look, cities are talking to themselves and sharing solutions. When New York Mayor Bill de Blasio took office in 2013, over 70,000 New Yorkers shared their views about city services and what his priorities should be via a new community digital engagement initiative – TalkingTransition NYC[5]. New York has also created ChangebyUS NYC, modelled on the Amsterdam Smart City platform, as "a place to share ideas, create projects, discover resources and make our city better." The platform allows people to either create or join a project including an open community mapping site, the Community Clean Up program and the Green City Force, which prepares young people for job opportunities in the clean energy economy.[6]

In the Yorkshire city of Kirklees, the Comoodle project has secured $1m funding from the Bloomberg City Challenge, to boost the city's collaboration or 'sharing' economy.[7]

The Brazilian city of Sao Paulo has developed a crowdsourcing platform called Volunteered Geographic Information (VGI) to enlist citizens in revising the city's master plan. The planning process has involved over 25,000 people and more than 10,000 contributions. The VGI platform will also help people to evaluate whether the plan is meeting public demands. Sao Paulo also used technological innovation, setting up MobiLab to host "hackathon" summits centred on urban mobility and city planning. Programmers work collaboratively on innovative projects over a number of days with industry and academics.[8]

And in perhaps the most mature example of a 'collaborative economy' initiative, there is the emergence of 'sharing cities' such as Seoul, whose Sharehub project has now certified 50 schemes ranging from car-sharing companies to an initiative matching students needing affordable accommodation with elderly home-owners with spare rooms.

Kirklees, Sao Paulo, New Yorkand Seoul might not be cities you'd normally mention in the same sentence, but these examples from across the globe show how innovative cities everywhere are using the new digital tools and the associated culture of open and distributed participation to "collaborate to compete". They are developing their collective digital mindsets to apply problem solving processes beyond technology implementation. These diverse cities are seeking success by moving decisively towards innovation in governance and more inclusive forms of engagement, using digital tools. This was the direction of travel we foresaw in *#wethecity* and thought it was vital for Sydney to follow.

5 http://www.talkingtransition2013.com/
6 http://localprojects.net/project/change-by-us/
7 http://www.comoodle.com/about-us/
8 http://sustainablecitiescollective.com/embarq/1032721/thecityfix-s-year-review-top-ten-sustainable-cities-stories-2014

So what has happened in the intervening two years? How are some of the examples we looked at from around the world developing? How well is Sydney tracking and where do we need to concentrate our attention for the next wave of reform and innovation? In this Issues Paper we identify what progress has been made but also recognise that fully realising the ambitions of *#wethecity* in Sydney remains a work in progress.

So this Paper also attempts to move the discussion from understanding the benefits of the smarter, more collaborative city to actually delivering it. Our aim is to move from possibilities to practice and by reviewing some international exemplars, show not only what the 'next' looks like but how we can make it happen.

"More imagination, openness and commitment to collaboration will be required to make international exemplars of these initiatives: but Sydney is taking decisive steps in the right direction."

Towards smarter governance: a key change since 2013?

#wethecity worried that Sydney would miss out on some of the innovations and opportunities around 'smart cities', Big Data and the Internet of Things. It's not that our technology wasn't smart or because we didn't have smart people. The problem is that Sydney's governance has not been smart at the metropolitan level or involved the community enough in problem-sharing and problem-solving. *#wethecity* detailed the elements that are required to be in place for a city to be considered 'smart':

- effective governance at the Metro level;
- the capacity to capture and use data and insights from across a whole city to manage the city and improve its performance
- a commitment to open data;
- the provision of the right digital infrastructure and platforms, and
- the right mindset and culture within government organisations to use the technological capacity to transform how they work.

'Smart cities' are produced collaboratively by the many and not the few. *#wethecity* cited some of the global cities and which were using improved governance and enhanced tools of community engagement to understand, manage and reform their cities. These were becoming places whose inhabitants increasingly didn't just 'consume' what their city had to offer but 'co-produced' it because of a modern inclusive approach to governance and city management by the best city governments.

In *#wethecity*, we repeated our call for a metropolitan governance framework for Greater Sydney linked to a Greater Sydney Unit in the NSW Government – tasked to gather data from all state government agencies, councils, SMEs, universities and the community to construct a digital dashboard to highlight key data and indicators of city performance. This would provide a platform on which engaged Sydneysiders could discuss the future of their city and help shape solutions to its challenges.

We thus welcome the highly significant initiatives of the NSW Government to create both a Greater Sydney

Commission with a digital dashboard. These are early days but the intent and direction are unequivocal. More imagination, openness and commitment to collaboration will be required to make international exemplars of these initiatives: but Sydney is taking decisive steps in the right direction.

Also relevant, in terms of progress since *#wethecity*, is the fact that two of the most important centres in Greater Sydney – City of Sydney Council and Parramatta City Council – have both embarked on 'smart city' strategies. They maximise the possibilities for service transformation within their councils, the opportunities for business and communities from greater online engagement, and 'place management' arising from digital technologies, big data and the Internet of Things. It is crucial, in a city that is currently fractured in governance terms, that the best practice and learning from these two centres is spread across Greater Sydney and becomes embedded in whatever structures emerge from amalgamations. This is a task Greater Sydney Commission should take on.

At a time when NSW is embarking on council amalgamations where some are concerned that greater scale will mean remoteness, we believe that digital tools and mindset can be an important part of the mix to help councils and residents to actually get closer. As well as using social media and other digital tools to see how people interact with each other and with their communities, the council of the future will know and understand its residents and their intersections with its services in a deeper way through the enormous reservoir of data about their needs but also their area and services. By making the data open and accessible councils and government will make possible the co-development of solutions to urban challenges.

Three themes

Three themes bind the *#wethecity* story together.

One is **the power and potential of connectedness**. Our observation is that the ethic of the crowd and the instinct for collaboration are both entrenching themselves as central to many of the things we need to achieve in business, government and the community. That ability to forge new ways to undertake the collective work of city making is, we think, one of the preeminent virtues from which good cities emerge.

The second theme is **the idea of the conscious or deliberate city**[9]. This is a city that thinks about its identity and evolving sense of itself and turns those aspirations into the way it makes decisions about its future. It is also in some measure about the way we think together about things like making the city fairer and more accessible, as well as realising our collective ambition for economic strength and shared prosperity.

The third idea that runs through our story is about **the redistribution of power, control and authority**.

Some of the traditional practices of power and the ability to get things done remain critical to a city's life, but people and their ability to connect and work together for common causes are disrupting some aspects of those traditional patterns of power. It's not so much that "big power" has come to an end – far from it. It's more that "big power" has had at least some of its traditional sources and scope to exercise its influence and control circumscribed by proliferating sources of "small power".

The key changes since *#wethecity*

Four things in particular have changed since 2013

Firstly, the world's leading cities are experimenting with new ways to integrate policy, technology and design to improve the way they plan and invest at a rapidly accelerating pace. That raises opportunities to learn from and replicate what they are doing, and add our own take on those experiments. It also suggests the price of falling behind by not doing enough, and not doing it quickly enough, is steadily rising.

Secondly, the importance of new and better types of city conversations about direction and decisions for the future as part of collaborative governance is now more urgent.

Thirdly, the cluster of challenges which continue to drive the policy and investment agenda in cities is expanding. New demands on sustainability and resilience can be added to the existing list of: the new geography of jobs; affordable housing; infrastructure renewal; community engagement and accountability; and community safety and security.

Finally, the speed of technology innovation and capacity in the digital economy, as well as a factor in its own right, is changing the other three trends too and impacting how cities can and should respond.

Our simple message is: while we were on the right track two years ago, we need to become more imaginative, be bolder and move faster. The stakes are rising all the time, ramping up the price of success and the cost of failure. In the next section – and in our collection of case studies – we focus on some key areas for action where there have been some important city exemplars internationally. These include Data and Analytics, Mobility and Engagement.

Agglomeration and the importance of place

In the knowledge economy, based on talent agglomeration and knowledge spill overs, we know that certain places support and attract knowledge workers, and thus entrepreneurs, and others don't.

The Brookings Institution has developed the notion of the 'innovation district' to describe this phenomenon. Greg Clark, an advisor on cities to the Committee for Sydney and to the NSW Government, has called this a 'reurbanisation of the economy'. This is the trend for companies who rely increasingly on smart workers to locate where talent wants to live and work.

Increasingly this is in mixed-use, higher-density districts, close to walkable city centres, public transport and universities. Universities are increasingly relocating to town centres as worker preferences turn against out of town, exurban, car-based business parks that lack amenities and those 'factories of the digital age'; cafes, bars and, restaurants.

This is the age in which tech start-ups have migrated from suburban garages to urban co-working spaces like Piivot 'innovation districts' where urbanism and innovation collide. This reinforces a key insight of Committee research, and of important work by members: this is the importance of 'place' – well connected, with a great environment and a mix of uses and a density than provides enhanced amenity – even in the digital era, and the economic as well as social significance of effective 'place-making'. As former New York City Mayor Michael Bloomberg pointed out, "people

9 There is a movement around the ideas of "conscious cities", along the same lines as conscious capitalism, reinforcing themes of empowerment and sustainability, for example. http://consciouscity.com/

want to live in communities that offer health and family-friendly lifestyles: not only good schools and safe streets but also clean air, beautiful parks and extensive mass transit systems."

This persistent insight is powerfully reinforced by a recent report from the Royal Society for the encouragement of the Arts, Manufactures and Commerce (RSA) in the UK.[10] The report draws on extended research between RSA and, among others, the London School of Economics, to explore the value of "connected communities". And the research reinforces that connected communities invest in, and can draw down on, "community capital" which, in turn, has some very practical benefits.

The study picks four in particular – a wellbeing dividend which exploits social connectedness, a citizenship dividend which taps the "power of us", a capacity divided which recognises that networks and relationships make us stronger, and an economic dividend. Social relationships improve employability, improve health (which has economic benefits of its own) and create savings in health, welfare and other services.

The design principle we might derive is simple – the need to make places where people want to live and businesses want to invest.[11] Talent, the eco-system which nurtures it and the places where it lives and work tends to attract capital much more effectively than capital attracts talent.

It is a sign of the times that the discussion about cities as places, and the rising interest in the art and practice of place-making, are becoming more common themes in the urban conversation. 'Digital' doesn't abolish space or places or the benefits for the economy and community of agglomeration and 'density done well' in terms of jobs and amenity.

Indeed, in this phase of digitisation the attractions of certain cities and certain places within cities are being intensified by the clustering there of high-paying knowledge economy businesses supported by best in class digital infrastructure and the 'thick' labour market of talent drawn to these economic and social magnets. The inner cities or close to CBD areas where such 'magnets' are to be found are bringing about what urbanists are calling the 'Great Inversion'. Where previously what in the US was called 'white flight' away from the inner city to the suburbs and exurbs has been replaced by 'bright flight' of time hungry knowledge workers back to the city and particularly its central districts.

10 https://www.thersa.org/discover/publications-and-articles/reports/community-capital-the-value-of-connected-communities/#

11 https://www.foreignaffairs.com/articles/2015-08-18/city-century

At the same time digitisation is creating the tools and apps to empower individuals to navigate and shape their experience of their city with greater confidence and safety. The best cities and the best city governments are the ones that reinforce the emerging digital infrastructure of sensors, devices apps – and the data and collaborations enabled by them - to improve the management and performance of their city for the benefit of their increasingly digitally savvy, collaboration-seeking, open-data using citizens and businesses. Many of the case studies in this Issues Paper are of such cities.

New momentum behind tech innovation in Sydney

There is significant new momentum behind tech start-ups and innovation in Sydney. This is epitomised by initiatives such as co-working space Fishburners and the dynamic emergence of 'Fintec' in Sydney, symbolised by Stone and Chalk, which fosters and accelerates the development of fintech start-ups. This momentum must be supported by innovative urban strategy that makes Sydney an affordable and pleasant place to live, which attracts the businesses and the talent needed for new economies.

The Committee for Sydney, the NSW Government and private sector partners helped create Stone and Chalk through research and advocacy and some seed-funding under the aegis of the new Financial Services Knowledge Hub.

The NSW Government is leading the way in Australia in its policy approach to, and support for, fintech and start-ups. It continues to be an effective advocate for the sectors in terms of both national policy shifts needed to promote them and marketing Sydney as a tech and innovation centre.

Since *#wethecity*, the NSW Government's Innovate NSW program has added a funding arm to the mix – "Minimum Viable Product" grants. The approach adopts a core concept from the "lean start-up" model. This funding supports technology SMEs to engage with a potential business customer in a key market sector and create an innovative business-to-business solution that addresses a compelling need.[12]

"The city is not a company; community is not a brand; citizenship cannot be mistaken for consuption. While Zappos claims that it can deliver happiness when they deliver shoes to your door, the same philosophy cannot – and should not – necessarily be translated to the city. This kind of thinking reduces the city to an algorithm, or customer service mantra that is expected to produce the same predictable output repeatedly. It is just this kind of urbanism that we should be critical of when we think about the future cities. A sharing city is one that is open to all, not the few. This can be achieved by working together, not co-working. The city is more than just office space, but a place to discover and nurture the values that make it more than the sum of its parts."

Michael Bauwens
blog.p2pfoundation.net/the-anticipated-the-failure-of-startup-urbanism/2014/12/27

12 http://www.industry.nsw.gov.au/business-and-industry-in-nsw/innovation-and-research/innovate-nsw/minimum-viable-product-program

Sydney's Digital Creative Hub: *Piivot*

Also supported by the NSW Government and the Committee is a second 'Knowledge Hub' initiative called *Piivot*. Headquartered at the University of Technology Sydney, *Piivot* aims to build Sydney's reputation as a global innovation and tech hub.[13]

With over 60% of Australian start-ups based in Sydney, potentially feeding a value of over $100 billion into the Australian economy by 2033, this is a timely partnership between Australia's thriving ecosystem of creative and digital/tech startups and our major cultural, media, commercial, government, technology and educational organisations.

We know from startup hubs globally such as California's Silicon Valley, New York's Silicon Alley, the city of Boulder in Colorado, Tech City UK, Hub Singapore and Start Tel Aviv – that collaboration is critical to innovation, especially in the digital economy. The other critical factor is an urban environment where the best people want to live and play.

Piivot blends the best of our digital and creative industries and partners with a unique Sydney flavour. It also reinforces that place matters in promoting innovation and this is why they will take an approach that addresses affordable and flexible workplaces, mentoring, mentoring, community and connection to capital, but also an improved Ultimo with better physical connectivity and better places to be.

13 https://www.piivot.sydney/about

Open data and innovation in NSW: My Infrastructure Planning

In NSW, more accessible information is increasingly available to explain where and how major infrastructure investments are being made.

Arup, in a joint project with the NSW Department of Planning and Environment (DPE) and NSW Treasury, has helped the Government understand the benefit of open data and develop a roadmap for releasing state budget data.

For the 2014/15 NSW Budget, the team developed an interactive map showing the location of each project listed in Budget Paper 4: Infrastructure Statement.[14] This innovative platform, built entirely on open source technology, not only engaged a whole new demographic in understanding the budget but also developed the technical skills in the government project team and also helped shape the vision for open budget data in NSW.

For 2015/16, the main focus will be on formalising the open data policy and practice around the Budget. When the Budget is announced, data will be released on **data.nsw.gov.au**, alongside revamped public-facing material.

This is a small but vital step in the NSW Government's open data journey and helps provide a test bed and skill development exercise for larger initiatives like DPE's ePlanning portal.

The same thing is happening in other cities. In Pittsburgh, a concerted effort is underway to turn PDF documents that often hide budget data into much accessible visualisations that help people to, literally, see what's going on.[15] Similarly, New York City's Checkbook NYC is considered to be the best financial online transparency tool.[16] For Pittsburg Mayor Bill Peduto, it's about "letting the sun shine in."

These two examples suggest that the NSW Budget visualisation tool is part of a rising trend.

14 http://myinfrastructure.planning.nsw.gov.au/#
15 https://nextcity.org/daily/entry/open-data-pittsburgh
16 http://www.checkbooknyc.com/spending_landing/yeartype/B/year/116

And not just international cities: learning from Melbourne

Since *#wethecity*, the City of Melbourne launched its Knowledge City Strategy 2014–2018. It seeks to create a future in which the knowledge sector is better branded, better understood, valued and experienced. In this future, "individuals and organisations are better informed about the sector and how to engage with and benefit from it."

The city will engage its part in the strategy from the perspective of four different roles – promoter, leader, partner and enabler.[17]

The City also released its Data Dashboard which shares data on the environment, parking records, property development and the urban canopy. In 2013, Melbourne joined the World Council on City Data as a founding member, which made it one of the first cities to implement the world's first international standard for recording city data, ISO 37120[18]

Another important initiative is Participate Melbourne launched in 2013. This platform offers an online hub for people to provide feedback and make a contribution to city decision-making.[19]

Together with the creation of a new Smart City unit these initiatives remind us that not all governance and digital innovation – or competition – is coming from cities offshore.

The smart, data-informed, collaborative city is also a resilient city

Since *#wethecity* in 2013 it has become clearer that in a time of volatility and great change, the city which understands key trends and challenges and engages its inhabitants in finding solutions, will be better placed for the complexities and uncertainties of the future. It will be more resilient and able to make decisions more quickly and confidently under conditions of complexity and ambiguity.

Resilience has three dimensions.

One is about the speed with which cities are becoming part of the new 'climate economy'; making the transition from 'green' policies and strategies to embracing the possibilities of de-carbonising the city. Cities are the key to the climate economy's capacity to reset the foundations for sustainable prosperity in which growth, sustainability and inclusion are mutually reinforcing.[20]

The second dimension is innovation. A city's capacity to think differently about commerce, energy, transport, the digital and creative industries and urban design and planning can unlock investment, jobs and prosperity.

The third dimension of resilience takes the conversation back to its human roots. It reminds us that it is in the crucible of its social life that cities forge an appetite for both risk and opportunity.

The City of Sydney has been selected as one of the Rockefeller Foundation's 100 Resilient Cities and appointed a Chief Resilience Officer. Resilience officers work across departments to help the city improve communications, promote collaboration, bring people together to develop an integrated resilience strategy. Resilience has also been identified in the legislation for the Greater Sydney Commission as one of its founding principles.

17 http://www.melbourne.vic.gov.au/aboutmelbourne/knowledgemelbourne/Pages/KnowledgeMelbourne.aspx
18 http://participate.melbourne.vic.gov.au/about/
19 http://participate.melbourne.vic.gov.au/about/

20 http://newclimateeconomy.report/

The 100 Resilient Cities are clear that city resilience is not a swap out for sustainability principles and not just about climate change but more about enabling cities to manage disruptions to how cities function, and to create opportunity. The 100 Resilient Cities use a city resilience framework to enable city governments to assess the current status and measure progress against four essential dimensions of urban resilience:

- **Health and wellbeing** – everyone living and working in the city has access to what they need to survive and thrive.
- **Economy and society** – the social and financial systems that enable urban populations to live peacefully and act collectively.
- **Leadership and strategy** – the processes that promote effective leadership, inclusive decision-making, empowered stakeholders and integrated planning.
- **Infrastructure and urban systems** – the man-made and natural systems that provide critical services, protect, and connect urban assets enabling the flow of goods, services and knowledge; reliable communications and mobility.

The framework is big and inclusive. It calls out the different dimensions of resilience, reinforcing especially the importance of social connections and relationships.

The more that a city, in the normal course of its life and work, connects to and with its citizens, businesses and communities, and the more it engages them in thinking and making decisions about the city, the better able it will be to draw on available skills, expertise and co-operation to respond quickly and effectively to disruption.

Resilient cities privilege collaborative behaviour and leadership for shared and open governance as a long term investment in deep levels of trust.

So when we consider what has happened and what is happening in Sydney, it is clear there are steps we must take. Sydney needs to understand that data matters – not the data itself, but how it is accessed, analysed and integrated with decision making. We also will need to understand how digital contributes to developing an efficient multimodal platform for urban movement, which is one of the most pressing issues around the world. All of this must be considered in light of the digital opportunities for democratic renewal and participatory decision making. When we consider these themes in more detail, we can begin to see that the "smart" label, and the technological mindset that comes with it, aren't enough to meet our collective ambitions at the city scale.

"Cities are not built forms, they are social forms. We must design from social life, not for it."

Fran Tonkiss, author of
Cities by Design: The Social Life of Urban Form.

Data matters

It is already well past trite to proclaim the era of Big Data and big analytics and to trumpet its game-changing implications for the way cities think and work. But despite the difficulty of avoiding the clichés, data is increasingly influential in just about every aspect of the city's life.

Along with resilience, the Big Data conversation is one of the major shifts in focus and priority since the first *#wethecity* paper was released.

As the Internet of Everything spreads[21], the quantum and quality of data from people and things, gradually being matched by the rising quality of analytics, is growing. And that means very different ways of doing most of the things that matter to the success of a city – how it makes decisions, how it talks with its citizens (and how they talk with each other), the management of mobility and transport, building and maintaining physical infrastructure and energy as well as harnessing the new mobile, human and machine data in new social webs of connected people and places.

Cities have always been data processing machines. The creativity, commerce and new social connections that have been at the heart of cities from the start were fuelled by stocks and flows of data in the form of people and paper. The scale, scope and speed of "cities as data" have all obviously changed profoundly, but the story is essentially the same.

How do they create, and then tame, scads of data about what people and institutions are thinking, doing, buying, selling, creating, plotting and deciding so that the city becomes more legible? How does data help people to "read", almost literally, the life and times of a city so that they can contribute to, and benefit from, the economic and social success for which it is always striving?

Former Indianapolis Mayor and now Harvard academic Stephen Goldsmith leads a project called "data smart city solutions". Its research focus is the intersection of government and data, ranging from open data and predictive analytics to civic engagement technology.[22]

Examples of "data smart" projects are varied. In New York City, Goldsmith's own role as Deputy Mayor for Operations saw the birth of the Office of Data Analytics, building on some projects driven by the city's first chief analytics officer. The office has become, according to Goldsmith, a "civic intelligence centre" where data about operations and outcomes measures more accurately how the city is working.[23] This is similar to the recently announced initiative by the NSW Government to establish a Data Analytics Centre.[24] This Centre will grow a capability across Government for better ways to turn the torrents of data which are already available, and which will be augmented by new streams of digital and other data that track patterns of activity and engagement across and within the city, into insights that drive better decisions, good policy and improving services.

In Goldsmith's Harvard work, the research is exploring the implications of people generating data as they converse with their governments via social media, when they participate in online "ideation" forums, and when they call 311 or use city apps to report problems or rate services. This community feedback can be curated into solutions to guide governments' rulemaking, problem solving and resource allocation.

Yet these massive amounts of data will drive efficiency only when organized and analysed in a manner that supports decision-making. Governments are just beginning to meaningfully incorporate data analytics into their operations. The results, so far, have been highly promising.

21 http://ioeassessment.cisco.com/

22 http://datasmart.ash.harvard.edu/about/data-smart-city-solutions

23 http://datasmart.ash.harvard.edu/news/article/how-new-york-city-is-mainstreaming-data-driven-governance-737

24 http://www.computerworld.com.au/article/581109/nsw-government-establish-data-analytics-centre/

Predictive algorithms allow police departments to anticipate future crime hotspots and pre-emptively deploy officers. Buildings departments can determine which structures are most likely to have code violations in order to efficiently allocate limited inspector capacity. Analysing data from subway smartcards can predict the effects of transit disruptions and give broad insight into transit-system operations. Integrating data from different human-services agencies can greatly increase the effectiveness of social workers as they assist at-risk young people. Agencies and their workers can use digital tools both to collaborate and to gain new insight from their combined data resources.[25]

Another example is the way in which cities are using data to inform new and sometimes contentious debates about regulation, especially in areas like health and safety. The impact of transport providers like Uber is a well-known example, and has prompted a major review of regulatory arrangements in NSW.[26]

Urban mobility

The participatory and collaborative instincts, culture and practices of *#wethecity* are deeply implicated in some of the most interesting mobility solutions that are changing the way cities work and interact with their inhabitants.

Developing an efficient multimodal platform to combat the problems associated with urban mobility is one of the most pressing challenges cities face. System-level innovation is required to overcome the fragmentation that results from the diverse array of transport operators. Mobility is at the heart, not only of the way a city works, but also of the way the community interacts with the city.

Urban mobility has become the top priority for cities seeking to attract investors, and the development of an integrated mobility infrastructure has huge potential for cities in terms of economic, social and environmental wellbeing.

25 http://datasmart.ash.harvard.edu/news/article/big-data-analytics-and-a-new-era-of-efficiency-in-government-246
26 http://pointtopointtransport.nsw.gov.au/

An integrated response to urban mobility involves:

- Managing capacity over time to make the most efficient use of existing physical infrastructure; and
- Distributing reliable information to travellers about the relative costs and benefits of different travel options, thereby promoting behaviour change.

Cities across the world are looking to shift away from car-centric transport systems.

Hamburg is aiming to eliminate the need for cars within the next 20 years by implementing its proposed "Green Network".[27] Copenhagen plans to construct 26 bicycle "superhighways" that extend out from the city centre to the suburbs as part of the city's goal to become carbon neutral by 2050.

Short of eliminating cars altogether, integrated public transport systems coupled with disincentives, such as congestion charges, are driving the shared-vehicle economy and the use of alternative transport options.

Cities, including Sydney, are responding to the mobility challenges with more vigorous strategies and investments in better public transport.

In Seattle, a "hack the commute" project is looking at ways to engage people directly in the task of finding better ways to design the commuting structure across the city. The hack event, held in March, brought together about 80 coders, designers, data analysts and entrepreneurs led by the city of Seattle and Commute Seattle.

Participants were given the context for the types of problems that need solving, along with prizes and support from the city government for the best ideas. The event heard from academic researchers, community activists, tech entrepreneurs already developing solutions like the OneBusAway app, as well as from the city itself.[28]

In Lyon, a project called Optimod'Lyon aims to collect, centralise and process all urban mobility data on a unique platform to provide users with real-time information about optimal transportation options. With 12 partners from the public and private sector, the initiative provides three major services:

- 1 hour traffic prediction;
- A multi-modal transport app for citizens, and
- A Navigator for urban freight and an optimisation tool for delivery routes

In Paris, the Station Diderot bus stop has been designed, as part of a "bus stop of the future" project, to be a multi-purpose public space, comprising an electric bicycle rental station, free Wifi, a lending library, and a coffee stand.[29]

Many cities are experimenting with better ways to manage their parking systems. In San Francisco, where city officials estimate that a third of the city's traffic congestion is caused by people circling the city, looking for a parking spot, SFPark is a parking management system that uses demand-responsive parking and rate adjustment and mobile phone apps with real-time information about available spots.

The system combines sensors embedded in the pavement to create the data with variable pricing mechanisms which raise parking fees when the demand for parking is greatest and directs drivers to available spots.

The system cuts down on the noise, pollution and frustration that comes with traffic congestion. As well, mobile phone apps allow drivers to find available spots more quickly and refill meters remotely. The city's parking data is open source and made available for app developers.

PaybyPhone allows individuals to add time to their parking without returning to the meter, receive reminders when their parking time is about to expire and pay for their parking on their phone.[30]

In Vienna, the Smart Mobility Information and Ticketing System leading the way for Effective e-mobility services (SMILE) is an app that draws on the value of open data. It acts as a single point of contact for the commuter by proposing optimal routes to suit the commuter's needs from an integrated range of transport offerings. The app facilitates online booking and payment for intermodal route options provided by the various mobility partners.

SMILE connects a network of public and private partners. It displays the level of CO2 emissions for each alternative route. The solution is funded by the Climate and Energy Fund of the Austrian Government and has been piloted since April 2014. The intention is that SMILE will spread as an nationwide platform.

And typically, for the current generation of 'smart city' solutions, the approach is open and collaborative. using simple interfaces, cloud-based agility to host and provision the service and a growing network of public and private partners to deliver the services and capabilities.[31]

In Mexico, the story takes a slightly different twist and links data, analytics and social media to tap into deep cultural instincts for trust and social collaboration.

27 http://inhabitat.com/hamburg-announces-plans-to-become-a-car-free-city-within-20-years/
28 http://www.govtech.com/data/Techies-Tackle-Transportation-Troubles-at-Hack-the-Commute-Seattle.html

29 http://www.psfk.com/2012/06/future-bus-station.html
30 http://sfpark.org
31 http://smile-einfachmobil.at/

The project is being masterminded by Gabriella Gómez-Mont, the director of city government department Laboratorio Para La Ciudad (city laboratory) whose personal slogan is "imagination is not a luxury."

The project establishes a new division of responsibilities between the government and the people and looks again at how to tap dep sources of trust and civic engagement to solve a big problem like traffic and mobility.

The plan consists of a data-donating platform that collects information on origin and destination, transit times, and modes of transit. The app, Living Mobs, is now in use in beta form. The plan also establishes data-sharing partnerships with companies, educational institutions and government agencies. So far, they've collected 14,000 datasets.

These datasets will be used to deliver a real-time transport app for participants, all derived from data voluntarily provided by citizens. [32]

We're seen for some time now cities like London, Singapore and Stockholm attack the congestion and mobility challenge through congestion charging.

In Stockholm, which has been using pricing since 2006, congestion has reduced and people favour the retention of the pricing mechanism, which exempts alternative fuel vehicles. In that sense, the pricing mechanism can be both an effective demand management tool and a powerful "nudge" that gets people to make choices and shift behaviour in line with the overall objectives of reducing congestion and improving the quality of the environment in the city.

According to Arthur D. Little's 2013 Urban Mobility Index, Hong Kong has the world's most mature multimodal transport system. The Octopus card is a multi-function contactless smart card. It facilitates e-payment across public transport, shops, libraries, parking meters and leisure activities and enables access to residential and offices buildings. Penetration is very high with 22 million cards in use.

Sydney, of course, has moved strongly into this approach with the introduction over the past 12 months of the Opal card, which is gradually rolling out across the city and across different modes of public transport.

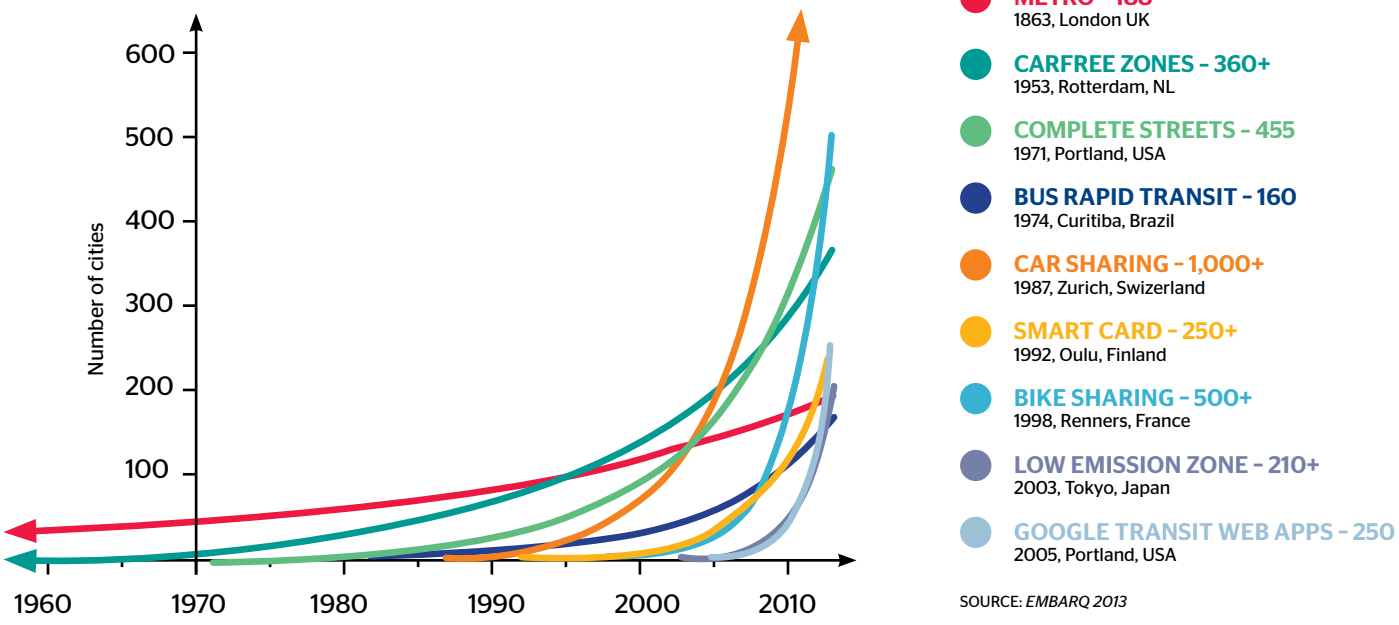
32 https://nextcity.org/daily/entry/mexico-city-government-lab-community-trust-big-data-traffic

In a related initiative to improve the efficiency and impact of urban mobility, the NSW Government has introduced car sharing for public servants. This has reduced the size and cost of official car fleets by encouraging senior public servants to use GoGet, Hertz 24/7 and GreenCarShare instead of the traditional, and expensive, dedicated car allocation.

A final and very recent example is Green Wave, a proposal from Deloitte to the NSW Premier's Innovation Challenge, to harness the power of networked commuters to improve mobility and journey planning in Sydney.

The proposal is for "an engaging social network of transport users that creates intelligent, rich data for predictive transport decisions both for the individual and at a state level." Similar to SMILE in Austria, Green Wave will be a route planning and modal decision-making tool to take data from commuters themselves – people as nodes in the network – to help them work out the best – fastest, cheapest, greenest – trip to fulfil their travel needs.

This graph from the New Climate Economy group presents a snapshot of the range of transport projects since 2000, all of which tackle the urban mobility challenge in different ways.[1]



SOURCE: *EMBARQ 2013*

1 http://newclimateeconomy.report/cities/

Engagement and participation

Much of the discussion about cities and urban policy combines two characteristics.

One is an instrumental obsession with trying to improve what cities do for and to their citizens across the range of city services and functions.

That means a focus on how cities maximise investment and jobs, how they invest in and maintain requisite infrastructure, how they improve the range of transport, energy and social services for citizens for which they are responsible or to which they make a contribution.

The other is an intrinsic obsession with what cities do with their citizens (and sometimes the things the things citizens can do by themselves) to turn the rising instinct for co-creation and participation into projects and investments.[33]

The Shareable and Sustainable Economies Law Center[34] has produced a guide that curates scores of innovative, high impact policies that US city governments have put in place to help citizens share resources, co-produce, and create their own jobs. It focuses on sharing policy innovations that are most important to citizens and urban leaders such as food, housing, transportation, and jobs.

Whether it is sharing power tools and lawnmowers, the spreading use of collaborative mobility services like Uber and ridesharing, the use of Airbnb as a platform to rent out spare rooms or the use of simple social media tools to match people cooking a meal at home to someone close by who needs a good meal (described by some as the "Uberisation of Meals on Wheels"[35]), these instincts share a concern to improve the quality, and often the quantity, of engagement and participation by citizens in the life and work of their city and of its communities.

The idea of "with and by" instead of "for and to" shifts the participation debate out of the often rather stale and even cynical rhythms of traditional consultation and feedback and towards a more nourishing instinct for honest, fair and open discussion and co-discovery.

As we explained in the original *#wethecity* paper, cities need to embrace the shift away from consultation to conversation. This reflects an escape from formal and structured dialogue towards more informal and unplanned conversation.

We noted that much of this shift is being fuelled by the "flight to social" in our collective use of the new social technologies (*#wethecity* p.36). There are some good examples of the emerging generation of robust and simple tools for effective digital democracy.[36]

One is the DCent project, which is building open-source, privacy-aware tools for people to use for large-scale collaboration and decision-making.[37]

Another is Your Priorities, a platform for mobilisation of community opinion around a range of policy challenges such as political lobbying and funding and the Transatlantic Trade and Investment Partnership.[38] There are other good stories too[39]: Democracy 2.1, which includes projects in New York for participatory budgeting, in Paris for climate change policy discussions and in Tunisia for local democracy[40]; OpaVote, for online elections and polls[41]; DemocracyOS, which looks specifically at drafting legislative and policy proposals[42]; and Discourse ("civilised discussion") which supports wide-ranging and open collective discussions.[43]

Broadly, the instinct for a new practice of participation works out in three ways:

- How the city makes decisions.
- How city services are designed, delivered and held accountable.
- How the mantra of "with and by" motivates experiments in co-design and co-production whose output is measured in the currencies of trust and legitimacy.

One place to look for ways in which these instincts for engagement and participation are being tapped is Bangalore, India where urban innovator, politician, scientist, technologist, journalist and public policy professor Ash Mahesh is engaged in a series of initiatives whose animating instinct is very much "we, the city".

Mahesh believes that rather than looking for solutions in our cities, which usually implies a process of doing things "to and for" people, the premium now should be on increasing the number and efficacy of what he calls "problem-solving people". We can all, he claims, be change makers.[44]

33 The rise of the collaborative or "sharing" economy is a good example. http://collaborativeeconomy.com/; http://collaborativeeconomy.com/research/cities-the-sharing-economy-and-whats-next/
34 http://collaborativeeconomy.com/research/policies-for-shareable-cities/
35 http://inspiredworlds.com/the-uberization-of-services/

36 Designing digital democracy: a short guide, Geoff Mulgan http://www.nesta.org.uk/blog/designing-digital-democracy-short-guide
37 http://dcentproject.eu/
38 https://www.yrpri.org/home/world
39 Participatory democracy's emerging tools, Beth Noveck and Arnaud Sahuguet http://www.governing.com/columns/smart-mgmt/col-participatory-democracy-emerging-tools.html
40 http://www.democracy21.com/
41 https://www.opavote.org/
42 http://blog.democracyos.org/democracyos.org
43 http://www.discourse.org/
44 http://www.ashwinmahesh.in/

The claim is backed by a consistent approach to initiatives which keep looking for things that citizens can do "with and by" themselves. This combines four ideas.

Firstly, progress can be made every day, even if the progress is to make things 1% better today than they were yesterday. Lots of small steps add up to big steps.

Secondly, "information is the glue of modern societies." Harnessing knowledge is the key to clever cities doing things better. In *#wethecity*, we kept reminding ourselves "wouldn't it be great if Sydney knew what Sydney knows?" The focus here on sharing ideas and knowledge as the core of citymaking is based exactly on that assumption.

Thirdly, "solutions, together." Mahesh makes the point that we often know how to fix things, but the knowledge and practice is dispersed and fractured across the city. Problem solving and opportunity realisation tends to be easier if you're not trying to do it all on your own.

The fourth idea of the "more problem solving people" strategy is "we, the government." Mahesh argues we must believe that we can create the government we want, and the development we want, together.[45]

The answer to the great social and developmental challenges we face today is not in finding the 'right' solutions and scaling them. I believe that India, and many other countries are too complex and diverse for this. Insiead, we must increase the number of problem-solving people."

Ashwin Mahesh
ashwinmahesh.in/#5ideas/c66t

45 http://www.ashwinmahesh.in/#!blog/c1q55

Smart isn't enough[46]

The discussion about 'smart cities' has become more pervasive and intense over recent years. It seems impossible for cities to engage pretty much any aspect of their work and life from a digital or technology perspective without attaching the "smart" label to their activities. Smart transport, smart energy, smart buildings, smart roads, smart lighting, smart parking, even smart waste, signpost a new kind of urbanism.

Like all convenient and useful labels, 'smart cities' risks becoming trite and superficial. And often, 'smart' equates to 'automated'. It describes initiatives whose driving ambition is to render much of the transactional work of the city – managing traffic and mobility patterns, making utility services more efficient, responding to (or, even better, anticipating) emergencies and crises that disrupt the routines and patterns of city life – quicker and more effective.

Increasingly, this dimension of smart cities is about engaging the potential of the "Internet of Everything", which connects people and data and things and business process to create value, to bits of city life and management that are too slow and opaque.

This is a revolution in its own right, the third or fourth wave of the Internet's evolution that means just about everyone and everything can transmit data that, even if it is at a basic level, tells the world something about their condition. The nodes in this next network are capable of a measure of self-knowledge and governance.

This instinct to make things "smart" is both good and necessary. There is a large efficiency and productivity harvest to be reaped from the design and execution of these new capabilities, each of which calls forth significant technology and infrastructure investments, complex execution strategies and, inevitably, major shifts in culture and leadership.

The great challenge now is to evolve the smart cities debate to the point where "smart" means more than automated and certainly more than technology. Smart needs to mean, and reflect, the truly human.

We signalled two years ago that *#wethecity* marked a shift in the ceaseless interaction between technology, institutions and human purpose and human values that drives (or hinders) growth and progress.

The risk still remains, though, that cities think they are smart when they have installed a sensor based parking scheme or can give you real time updates on traffic congestion.

46 This section is adapted from Town and Gown: *A Digital Update Linking connected universities and smart cities for growth, inclusion and sustainability* (June 2015) Martin Stewart-Weeks (white paper for Smart Cities Roundtable, June 2015, hosted by Deakin University, sponsored by Cisco, the Business Higher Education Round Table and IBM)

Being able to do those things is important and they are non-trivial undertakings in their own right.

But they do not, in and of itself, make a city smart. They just make it better instrumented and more automatic.

We said this two years ago, and it is even more true now, that if a city isn't rethinking and retooling every aspect of its life and work using a combination of technology, design, deliberation and a close and authentic connection with their citizens, it may end up hitting the target but it will well and truly miss the point.

Some examples of people-centred smart city initiatives have been collected in a recent Nesta publication.[47]

A program called "Block by Block" from the United Nations Human Settlements Programme, uses the online game Minecraft to find out how people want to see their cities develop in the future. Using the game, residents can build simple 3D models of their community, to effectively visualise future developments and create a consensus within the community.[48]

Wheelmap is a German tool that enables people to share information about how accessible places are by wheelchair. Launched in 2010, users have mapped 500,000 locations across the world.[49]

In the end, the story of 'smart cities' is the story of how the city relates to its citizens and its communities. That is a political, ethical, organisational, social and leadership issue, as well as a technological challenge.

We remarked in our earlier paper that a paradox lies at the heart of the smart city discussion.

The more important technology has become as part of the equation, the less central technology becomes. At this point, the trick is to work out the human, institutional and governance pieces because getting them right is what will make communities and cities more connected in ways that boost growth, inclusion and sustainability. That is smart. Sasskia Sassen's exhortation not to demonise the impact of technology but to "urbanise" its impact, making sure that its power and potential intersects with the essential humanity of cities and their communities remains compelling:

"...the real power of technology is unleashed only if it fits the contours of the way people and cities actually work, rather than simply providing 'dumb' infrastructure. The point is that users bring their own logics to these technologies. In the case of a city with its vast diversities of people and what makes them tick, the outcome can be quite different from what the designers expected."[50]

Anthony Townsend's critique of the smart city movement continues this theme of understanding the human potential and implications of the 'smart city' movement.

He contrasts the instinct to 'reprogram' cities using networks and data to "do more with less and tame and green the chaos of booming cities," with what he described as "a new civics." This slightly messy, but palpable, movement is an attempt to "take the wheel back from the engineers" and organise the local innovation he sees blossoming (often using the tools and infrastructure that the large technology companies provide) into a truly global movement.

47 http://www.nesta.org.uk/news/10-people-centred-smart-city-initiatives
48 http://www.nesta.org.uk/news/10-people-centred-smart-city-initiatives/minecraft-nairobi
49 http://www.nesta.org.uk/news/10-people-centred-smart-city-initiatives/wheelmap
50 http://videos.liftconference.com/video/2895375/saskia-sassenthe-future-of

Townsend asks the pertinent question: "What do you want a smart city to be?" His answer: "places where information technology is combined with infrastructure, architecture, everyday objects, and even our bodies, to address social, economic and environmental questions."

The contrast also speaks to quite different mindsets Townsend sees at work in the "corporate" and the "hacker" approach to smart cities.

One the one hand is an instinct to automate and digitise the "dumb design" of the last couple of hundred years and get cities into a fit and proper state to cope with the demands of the new century. This is an approach characterised by scale, ambition, impatience and a largely top down, prescriptive set of investments in infrastructure and services.

Against this "mainframe" view of cities is the smaller, distributed and "personal computing" view of the "new civics" movement.

Instead of optimising government operations behind the scenes, they create digital interfaces for people to see, touch and feel the city in completely new ways. Instead of proprietary monopolies, they build collaborative networks.

The point of the critique isn't to argue that scale investments in infrastructure and capabilities for city management that have grunt and power aren't necessary. Clearly they are.

The point is that these local, messy and experimental urban "hacks" take time and need to be grounded in their human instincts for connection and purpose. For civic leaders who understand the opportunity on offer, the new civics isn't just a way to do more with less, it is about doing decidedly better with whatever resources are available to "rethink and reinvent government on a more open, transparent, democratic and responsive model." (p10)

It's an instinct that *#wethecity* both shares and seeks to nurture.

Smart cities, universities, entrepreneurs and citizens

The Committee for Sydney supports linking the "smart city" imperative with the work of our universities, which is now reinforced by a new policy and investment focus by the federal government.

There is a growing link between the concept of "smart campus" initiatives across our universities and the "smart city" initiatives which are transforming the way the cities and communities of which they are a part use digital technology to drive sustainable growth, innovation and better services.

This growing realisation that cities and universities are locked in a powerful set of interdependencies, each of them seeking to embed learning, innovation, new investment for jobs and high levels of liveability, is reinforcing a set of powerful mutual and overlapping ambitions.

This was the subject of a recent workshop convened by the Business/Higher Education Round Table (B/HERT) and hosted by the Vice Chancellor of Deakin University, Professor Jane den Hollander, supported by Cisco and IBM. The workshop brought together university leaders, entrepreneurs and leading businesses as well as key civic and community leaders to look at the way Geelong and Deakin were collaborating for regional growth and resilience – bringing together 'town' and 'gown'.[51]

More recently, in the updated Strategy for American Innovation, President Obama has called out the "smart city" challenge specifically for university-city linkages to exploit capabilities in data, learning and skills and collaborative and open innovation.

51 http://www.bhert.com/events/2015-06-08/Town-and-gown-a-digital-update-Smart-Cities-Round-Table.pdf.

In the strategy, the challenge of deploying innovative approaches in smart cities "requires focused research, particularly to develop and testbed new "Internet of Things" technologies, as well as multi-sector collaborations to deploy new approaches and knowledge sharing across communities."

President Obama committed to significant new investment in science and research, including more than $US35 million in new grants and over $US10 million in proposed investments to build a research infrastructure for Smart Cities by the National Science Foundation and National Institute of Standards and Technology.

And the smart city priority in the new strategy also includes support for cities participating in major new multi-city collaborations that will help city leaders effectively collaborate with universities and industry, including the new MetroLab Network.

The network will bring together more than 20 U.S. cities and universities to launch more than 60 smart city projects over the next year and share best practices.[52]

In September 2015, Rice University and the City of Houston announced a data-sharing partnership as part of the national Smart City Initiative under the Kinder Institute.

The core role of this partnership program will be to break down the data silos across government and academia, bringing an interdisciplinary approach to smart city thinking.

Building on the City of Houston's many existing data sets, and linking in many other city institutions, the partnership has begun work linking and cross-referencing public opinion surveys, school performance data and health data. Bill Fulton, Director of the Kinder Institute explained the value in this cross industry work - "When we connect this data we can connect the dots between education and health, absences and student performances, medical visits and medical problems". Similar work is underway examining the impacts on the city of flooding and improving the governance of shipping ports.[53]

52 https://www.whitehouse.gov/sites/default/files/strategy_for_american_innovation_october_2015.pdf, pg. 94

53 https://nextcity.org/daily/entry/kinder-institute-rice-data-sharing-big-data-houston

FROM POSSIBILITIES TO PRACTICE

The *#wethecity* puzzle is about how we harness the new digital tools and platforms of connection and collaboration to change the nature and quality of the conversations we have with each other, and with the city. This will inform decisions that make the city cleverer and more innovative, more prosperous, fairer and more inclusive, more creative and sustainable and more resilient. Or, in the mantra from our first paper, how the city "collaborates to compete."

The final part of this paper sketches some principles to guide thinking and actions by the various players which are in line with this definition. From the principles flows a set of recommendations that will turn *#wethecity* from hashtag to hard work, to achieve practical results that people can see and feel.

Guiding principles:

The sharp end of all of this is what Sydney needs to do now to accelerate what it's already doing, and start doing some new things, to put these insights and experiences to work.

We think the answer comes in two parts.

The first part is about embracing the *#wethecity* way of working. The *#wethecity* way of working has emerged in areas of Sydney over the last two years and the examples are explored in part 2 of this paper. We have distilled some guiding principles from our research and deliberations over the past couple of years. These principles should increasingly be the touchstone for action and accountability in Sydney.

1. The proper study of the city is the city

Successful cities focus on who they are and what they want to become. Digital platforms and processes help government transparency and effective public private partnerships, with more opinions and information – even analysis – put forward by the people of the city. The conversations that can now be had on a broader and more inclusive scale are as important as, and provide the foundation for, the decisions to build new roads, change the planning laws or install a sensor network for lighting or parking.

2. Cities are about people, places and networks as well as about forms and structures

Cities are social forms, not just built forms. The reality of this is becoming more and more pronounced in the digital era. The social and the built are interdependent but there is always a risk of forgetting that people and place are at the core of cities that work and attract the talent needed in the digital era.

3. Resilience, rightly understood, should be central to the business of city making.

Resilience means more than the ability to predict, withstand and recover from various forms of economic and environmental disasters. The approach has to integrate issues of health and wellbeing, economic strength, urban systems, institutions and leadership. Successful resilience and digital approaches at the metropolitan scale are both centred on capacity building. The resilience of our communities is increasingly linked to activities that address the growing digital divide.

4. From solving problems to increasing the number of problem solving people

Too often the approach to city challenges is to think up solutions and then work out how to "sell" their virtues to people and communities. It is more useful and efficient to harness technology and the rising capacity for "crowd" and "better, together" to increase the number and efficacy of problem solving people and communities. Collaborative platforms are facilitating greater input and more distributed problem solving from the people that city projects impacts the most.

5. Imagination and human ingenuity are city-making virtues.

We know that cities are organic places where people congregate for community, commerce and creativity. They have always worked best when imagination and human ingenuity have been married to institutions, resources and leadership. A healthy metropolitan innovation ecosystem is a must in the 21st century city.

6. The importance of public space

At the heart of a *#wethecity* strategy is the use of public space as a way to engage people in a city they feel they own, can use and which offers inclusion and identity. Public space can be reimagined with the use of digital technology and platforms so that it is better programmed, more flexible and meets people's needs more effectively.

7. Better together – how the city talks and decides

We emphasised it in the last paper and we're reinforcing it here: how a city governs itself, how it talks and decides together, matters greatly not just to the quality of the decisions that get made, but to the stock of trust which feeds the legitimacy on which the governance process relies.

RECOMMENDATIONS

1. Establish a "*#wethecity* What Works" centre in Sydney

This would combine aspects of the "what works" centres and the Urban Innovation Centre at the Future Cities Catapult in the UK, and along the lines of the What Works Cities Centre from Bloomberg Philanthropies and the Behavioural Insights Team,[54] to create a focus for:

- examples of good practice in the ideas and themes of *#wethecity* to demonstrate how they can be developed and put into action;
- more research on the impact and sustainability of *#wethecity* strategies and initiatives to gradually build up a stronger base of knowledge and evidence about the value of adopting these approaches and projects; and
- better interventions in specific places and communities to encourage more people-centred approaches.

The "What Works" centre could become the hub of a larger network of Australian cities around issues of digital innovation, engagement with people and communities and the social life of cities.

2. Use the Greater Sydney Commission to engage with the *#wethecity* principles and values and, in particular, develop:

- a "people and place" strategy that reinforces a people-centred placemaking approach to Sydney's growth and planning;
- a digital strategy that looks at the full range of the Commission's activities, including the use of a transparent 'dashboard' to report on aspects of the implementation of the metropolitan strategy and the wider community engagement strategy;
- an accessibility strategy that improves the way people with disabilities, the elderly and children access and get around the city.

3. Set up a "challenge" to find new and creative uses of digital technologies for democratic engagement

The challenge could offer a total of $100,000 in prizes, which would include a $50,000 prize for the best example of digital democracy and 10 prizes of $5,000 as seed capital for promising ideas and new ventures in digital democracy in Sydney.

4. Establish a Sydney Datastore

This would be along the lines of the London Datastore, to improve access to, and the creative use of, public data about aspects of Sydney's development and urban planning.[55]

54 http://www.urbaninnovationcentre.org.uk/; https://www.gov.uk/what-works-network

55 http://data.london.gov.uk/

5. Develop a "social innovation in the city" strategy

This will draw on the experience and expertise of designers, start-up entrepreneurs, social activists and others to create a more visible and sustainable program of research, action and policy making to improve the social life of the city.

The strategy could be convened by the Centre for Design and Innovation at the University of Technology Sydney, with input from other organisations such as The Australian Centre for Social Innovation[56] It could be funded by the NSW Government, philanthropic organisations and commercial sponsorship.

56 www.tacsi.org.au (one of the authors of this paper, Martin Stewart-Weeks, is a director of TACSI)

Relevant recommendations from *#wethecity1*

We believe that the following recommendations from our first report, *#wethecity: collaborating to compete in the digital era*, remain relevant:

Create a Sydney Policy Unit

"Establish a Sydney Policy Unit in the NSW State Government in the Department of Premier and Cabinet to provide a Greater Sydney focus for all tiers of government including the 'forum of Sydney mayors', proposed by Samson. It will promote a specific data centre for Sydney (with open architecture access to data and open software) and identify opportunities to coordinate and consolidate various modelling tools for Sydney. It could be staffed by secondments from the various government departments that currently collect and manage their own data with the secondees championing the needs for a collective approach to data collection, analysis and monitoring of activities."

Appoint a Chief Digital Officer for Sydney as a digital champion

"The Premier should appoint a digital champion to support the Public Service Commission and the Customer Service Commissioner to promote the digitalisation of services within government and their interaction with the customers and the wider community. This role should include overseeing a digital inclusion campaign to ensure that everyone can participate in the increasingly digital economy and new forms of governance and community participation in decision-making and importantly benefit from improved delivery of public services.

"This position should sit alongside the newly created Customer Service Commissioner position within the Department of Premier and Cabinet and take a similar whole of Government perspective."

Support and extend digital precincts like the UTS Creative Digital Innovation Precinct

"Support for digital precincts is important – all levels of Government and business need to support the development of physical and virtual digital hubs in Sydney. The Committee for Sydney, CISCO and other Committee members have backed the UTS Creative Digital Innovation Precinct bid and acknowledge that agglomeration of activity and proximity to the CBD are key to making this a success. We are also interested in what more can be done to support the physical and virtual activity hubs around the University of Western Sydney and the digital upskilling of the communities of the area. Cisco is developing a strategic partnership with UWS, for example, to develop a number of initiatives, including the development of spaces that harness the creative (and sometimes disruptive) potential of networked collaboration for new models of teaching, learning and knowledge creation. The roll out of highspeed broadband is well advanced in western Sydney, ensuring that the physical infrastructure is in place to support the digital economy including the online provision of services and education at all levels"

Expand the shared work space and digital hubs strategy across the whole of Sydney as part of a larger focus on a "future of work" initiative that looks at how the changing patterns of working and mobility in the city impact built form, transport and employment strategies

"Development of a network of digital hubs or shared work spaces across Sydney along the lines of Amsterdam's experiment in "smart work" centres to support remote working, innovation, learning and collaboration. Sydney is already experimenting with new ways to create shared work space, collaborative 'hub' ventures or "smart work" centres that make it easier for people to find physical places to work, to share and to learn.

"We have to support that process and add to its momentum and invention, creating all sorts of ways that innovation finds its inescapable 'place' dimension through attractive and convenient building and locations which are the physical manifestation of the deeper culture of networked and collaborative work we need to nurture and extend."

"High speed broadband and the roll out of the NBN across Sydney is a key enabler for this initiative. It is being promoted by many including WSROC, RDA Sydney and academics at Macquarie University."

Establish a series of Innovation Fellowships

"These should reflect a wide and eclectic range of people and backgrounds – entrepreneurs, public servants, business people, academics, start-up specialists, financiers and lawyers, marketing people – whose different enthusiasms will each bring something different to the role. Appointments would be long enough to get something done and to make a mark, but not long enough to give the impression that the role is either permanent or inevitable.

"The fellowships should have a sustainable funding model; the fellowships could be sponsored either by government, business or the universities so they retain their independence but can still be connected to the Digital Champion."

Australian City Innovation Network

"...links Sydney with other leading cities in Australia – perhaps in partnership with the Federal Major Cities Unit and/or the Committees for each of the major cities. Another option would be to extend and grow the nascent Sustainable Digital Cities Network, which is evolving around the Institute for Sustainable Futures at UTS.

"The Network has a big focus at the moment on telework and distributed, flexible models of work and organisation, taking advantage of the growing availability of broadband assets which are making it easier to work on an "anywhere, anytime" basis."

The Committee for Sydney

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"The Committe for Sydney is a fantastic body adding to public debate in the city. It is exactly the organisation it needs to be – engaged, constructive and challenging.

The Hon. Mike Baird MP, NSW Premier