The anywhere working city

Co-authored by Linda Chandler, Enterprise Architect at Microsoft UK and Phillip Ross, CEO of UnWork.com

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Executive summary

The time has come for technology to make its mark on the evolution of our cities. Historically we have seen geography, politics, transport, architecture and economics playing their part in the moulding of the cityscape but in the 21st Century it is the turn of technology to positively influence the design and planning of our great cities.

The concept of the Anywhere Working City is a highly livable, polycentric megapolis driven by societal expectation of a different way of working, shopping and living, and enabled by new architectures of building, technology and transport. Nomadic workers looking for workspace between head office and home will use innovative third space hubs at networked foci around the city and beyond. Pioneering developments in historic cities such as London and Manchester are learning from the boom in emerging cities like Qatar and Shenzhen; that technology, power and transport must be at the foundation of the planning and development process.

The evolution to an Anywhere Working City is driven by over-crowding, environmental concerns, economic factors and society's desire to work and live in a more balanced way. It's motivated by the need to save money, comply with stricter environmental legislation and compete for the next generation of employees with demands of a better way of working. But it is technology that underpins all of these factors. Although technology is the biggest achievement of our generation, it is the expectation of the next generation. Technology is the facilitator of the Anywhere Working City. The city will emerge as a people-focused metropolis embracing the potential of technology and enhancing the lives of its citizens.

About the authors

Linda Chandler is an Enterprise Architect at Microsoft UK. She is an experienced technology leader with nearly 20 years in the industry, latterly working in public sector with a focus on cities.

Philip Ross is founder and CEO of UnWork.com. He has written a number of books on the future of work including Space to Work and the 21st Century Office as well as leading research including the Anywhere Organisation white paper for Microsoft and VWork for Regus.

Introduction

Technology is often viewed as a short-term solution to business challenges rather than the longer-term driver of societal change that could determine our perceptions of future work. We have been shown a vision of a Smart City with obtrusive technology set in a revolutionary urban utopia, but the concept of the Anywhere Working City is a softer, evolved, more human-focused scenario where the adoption and leverage of technology stimulates a change in societal expectation of the way we work and live.
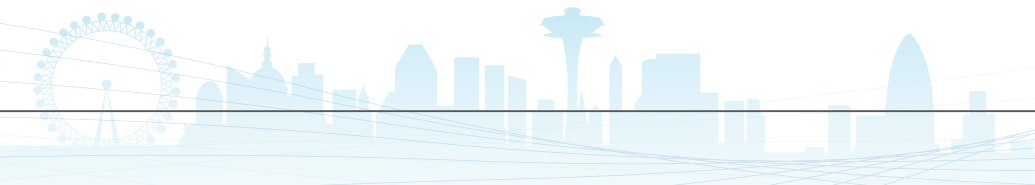
Beyond the smart city: architecture of a modern city utopia

Architects enjoy debating the definitions of architecture. But from the perspective of the Anywhere Working City it is important to make a distinction between terms that are often used interchangeably in this context but that should be seen as separate, but related, concepts; infrastructure and architecture. Infrastructure refers to basic and fundamental systems or facilities, which in a city context means building and utility infrastructure, transport infrastructure and, more latterly, technology infrastructure. Definitions of architecture refer to a 'higher' theme of design, with additional concepts of integration, holistic use, behaviours, emergence and transformation.

Tally Hatzakis, Strategy Specialist at Transport for London, suggests that another way of differentiating infrastructure and architecture is to revisit Maslow's Hierarchy of Needs, a model developed in the 1950s to understand human motivation, but which has important parallels to our understanding of the development of visions for today's cities. Through the city lens, this model would have urban infrastructure at the bottom of the triangle, covering our most basic needs, with architecture and the interplay of people, place and technology towards the top of the triangle. She adds: "City is the context within which you develop and satisfy your needs - or it can stop you reaching your full potential. The ability of a city to enable you to grow impacts on the attractiveness of a city as a place to live and work".

Architecture's role must now be to look at the higher benefits of design in a more holistic way. "Architects must stop trying to 'cut the ribbon' on projects and start looking for strategies," argues the eminent architect and master planner Sir Terry Farrell. As the Mayor's design adviser, he insists we need to look more broadly at development and city planning. Technology will be the key contributor to how city developments are designed; underpinning, enabling and informing the higher architectural concepts of how we work. But we must also ensure that technology architects and enterprise architects working at a higher level, look at the bigger picture

and develop strategies rather than their own 'ribbon cutting' projects.

Sir Terry suggests that we can learn from the academic world and the growth of new universities. The Oxbridge model is 'space positive'; interdisciplinary colleges with communal areas creating an atmosphere where people from different academic subjects live, work and discuss ideas. The 'new' universities are usually 'object positive' with each department in its own building, with a tendency to become territorial and isolated. Richard Watson, writer and strategist, also champions the theory that ideas need space to 'bump into each
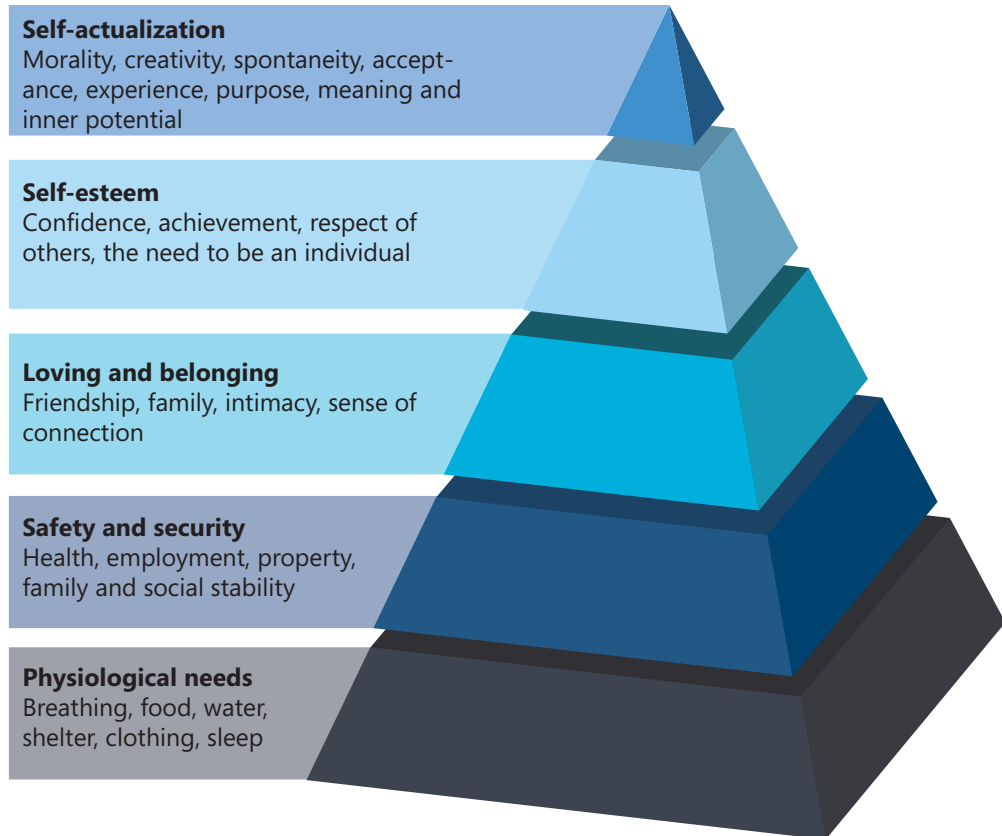

Self-actualization
Morality, creativity, spontaneity, acceptance, experience, purpose, meaning and inner potential

Self-esteem
Confidence, achievement, respect of others, the need to be an individual

Loving and belonging
Friendship, family, intimacy, sense of connection

Safety and security
Health, employment, property, family and social stability

Physiological needs
Breathing, food, water, shelter, clothing, sleep

FIGURE 1: MASLOW'S HIERARCHY OF HUMAN NEEDS (MOTIVATION AND PERSONALITY 1954[1])

[1] A.H. Maslow, A Theory of Human Motivation, Psychological Review 50(4) (1943):370-96

other', arguing that kitchens and staircases are the most important design concepts for creativity and serendipity. The 'Bump' concept[2] has already been discussed at the level of the Anywhere Organisation[3], with companies enabling their workspace so that employees can work more collaboratively and share ideas organically.

But as a society, both creatively and logistically, we must have both the building and technology architecture that will allow this to happen on a macro-scale within the city.

While new developments have technology at the root of their design, a major inhibitor of adapting more established cities is having to 'retrofit' technology to historic areas. Concentrated work hubs like Soho and the West End of London are already suffering power failures and are inhibited by this under-capacity of electrical distribution and the limitations of existing broadband cabling. New cities in China, the Middle East and Asia recognise the importance of enabling work through technology and have it as the basis of their infrastructure, determining the design and architecture of the city. Sir Terry is familiar with new developments in Shenzhen having built the tallest Chinese skyscraper by a British architect there and

believes we can learn from the mistakes and successes of these new cities.

Developments such as the Life Science hub at Royal Docks in London and Media City in Manchester are at the cutting edge of technology, as they need to attract digital businesses. The parallels between these developments and new cities such as Qatar are evident in their need to consider technology and transport infrastructure together. Fiona Fletcher Smith, Executive Director of Development and Environment at the GLA discusses the Mayor of London's commitment to 'barrier-busting activities': "New developments like the Royal Docks need to fit tech from the beginning. It will be like Taiwan in terms of broadband speed with cabling upgrades already in place." There has also been a commitment from Crossrail to minimise travel times to Heathrow[4], Canary Wharf and central London and a 'barrier-busting' cable car project linking the docks to the Greenwich peninsula.

In loose terms we talk almost interchangeably about building or technology architecture and infrastructure, but we tend not talk of 'transport architecture'. Smart mobility has come to mean transport plus IT, but perhaps we need to move to the 'higher' level

of transport architecture to allow us to think more holistically about connecting people, physically and virtually, across a city region. Transport architecture can take into account the bigger themes; flexible ways of working, new technologies and smarter travel and rather than reacting to unsustainable short-term demands on its capacity, transport will need to broaden its gaze in order to fulfil its remit to reduce emissions and to get cities moving again.

"The existing system cannot cope with infinite expansion," agrees Steven Norris, ex-Transport Minister and board member at Transport for London. Whilst traditional transport policy stuck to increasing capacity and improving services, the ever-growing demand is untenable and transport must now look beyond its traditional boundaries for an answer. Cities must have a strong, strategic transport architecture policy but will also have to be more inventive within their current transport framework to encourage a shift in attitude and behaviour. These parallels between building architecture, technology architecture and now transport architecture demonstrate that all city design should be looking more strategically about how, where and why we work and live like we do.

Architecture's role must now be to look at the higher benefits of design in a more holistic way.

[2] Microsoft The Hybrid Organisation in Practice, Making it work: 36–40 May 2011
[3] http://www.theanywhereorganisation.com
[4] Royal Docks: A vision for the Royal Docks prepared by the Mayor of London and the Mayor of Newham (http://www.lda.gov.uk/Documents/Royal_Docks_Vision_9077.pdf)

Third space

Technology will be a catalyst for the societal change needed to enable the Anywhere Working City. With 'the cloud' replacing companies own internal IT infrastructure housed in city buildings and mobile devices becoming increasingly sophisticated, we are becoming free to work anywhere and anytime. While the polar model of office or home has been the staple of flexible working so far, there is a growing need for alternative workspace between these two extremes, where people can work for an hour or so between meetings or just co-locate for interaction and contact. But a third space can offer so much more than just a place to work 'on the pause'. According to Cornelius Medvei at the law firm Eversheds, "when we decided to change the way we worked we found that the use of 'third space' allowed greater collaboration and thinking space."[5]

This 'third' space concept already exists to some extent with WiFi availability in cafes, bars and libraries but it is a growing sector. In London, The Institute of Directors and The British Library have already embraced this concept, with The British Library providing free WiFi and power points for laptops in its public spaces[6]. As Sir Terry Farrell points out, "you have as many people in the corridors and staircases as in the Reading Rooms because they can talk on their phones and interact". Transport hubs like stations and airports will also play a major part in the provision of workspace. Sir Terry points out that "30% of people in St. Pancras station are not there to catch a train". Companies such as Regus, who provide flexible workspaces, are reacting to the need to work in ad hoc ways and are opening hotel-style offices where you can rent space for short periods or use drop in business lounges. In a recent study, 63.5% of people preferred to have a commute of less than 20 minutes a day with only 12.3% of people preferring to work form home[7]. The suburbs, which now empty out during the day, could be given a fresh lease of life with people looking for interesting and inspiring places to work, closer to home and in their communities.

Models for innovative third space include 'The Guild', where people of a similar profession can work side-by-side or 'The Clubhouse', where a mix of professionals of a similar standing can network as well as work[8]. As office buildings are refurbished, space is often reassigned with more collaborative areas and less personal desk space. Workers are asked to give up their desks for a certain number of days a week and encouraged to find alternative workspaces. The idea of a 'touch down office' or even extending the popular BYO device concept more broadly to a BYO office, where employees are given a budget to fund their own working space, are ideas that will grow, empowering people to choose their place of work and saving companies money[9].

Fiona Fletcher-Smith at the GLA has already given up her desk for 2 days a week and is in search of the perfect third space. She imagines a time when you can "touch in and out of office space with something equivalent to an Oyster Card". Who knows, if Boris Johnson champions this model in the same way he did with London's rentable bikes, we could all be spending time in a Boris Office or 'Boffice' before we know it.

The natural by-product to this concept, where employees are empowered to create their own working conditions, is for corporate headquarters to be reduced in size or even to become virtual. Some smaller companies are already questioning the presence of a permanent head office and this freeing up of office space in expensive city centres not only has the potential to save companies money, with huge savings on furniture, heating and lighting, for example, but it will enable a 'virtuous circle' where office blocks are redesigned to allow mixed functionality with increased residential use. "We can learn from places like New York," says Fiona Fletcher Smith, "mixed use developments, where it's not just office blocks but there is residential use as well, means that people can live closer to work, reducing

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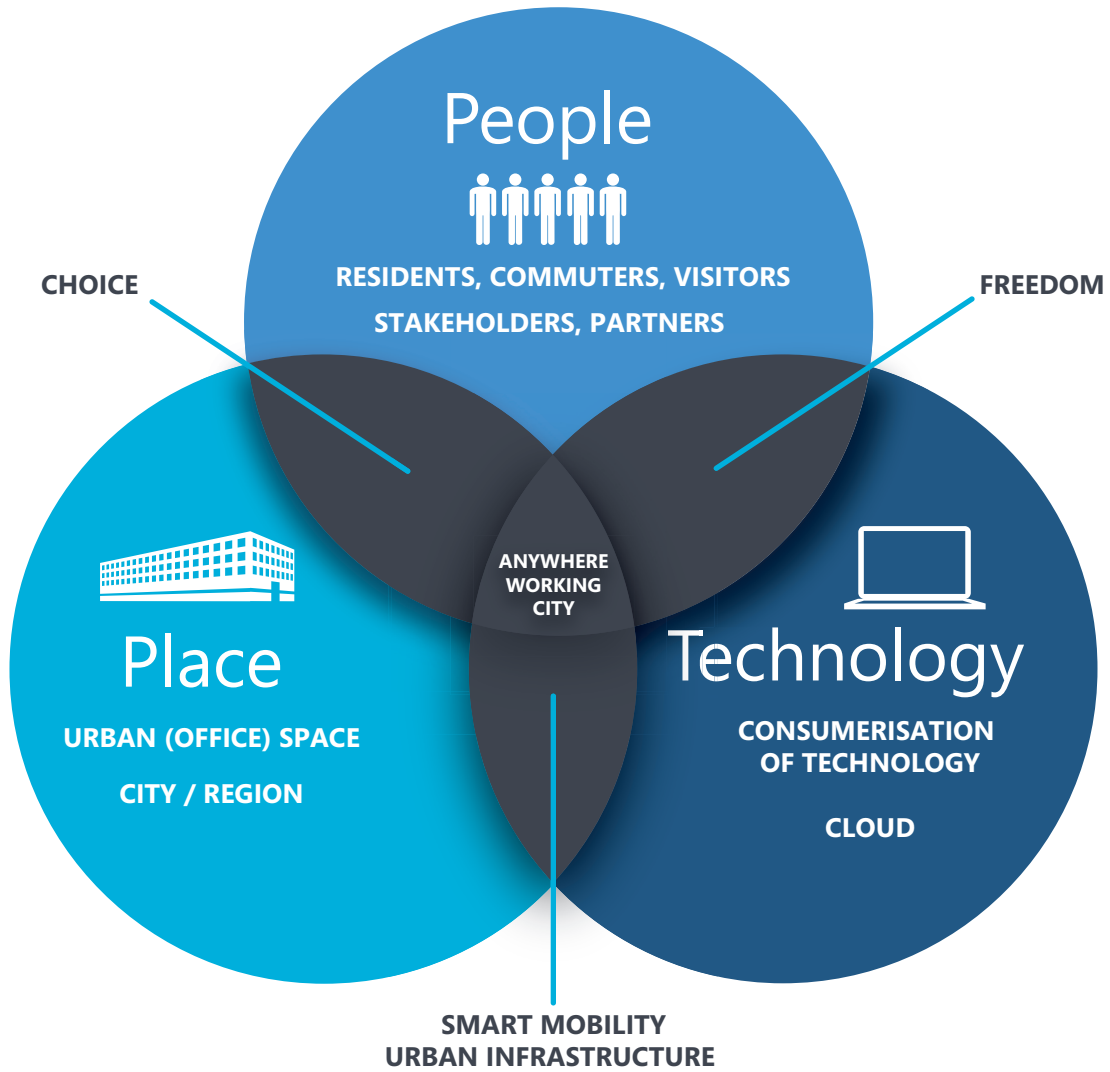
Sir Terry Farrell, Architect

[5] Speaking at the Worktech Conference, London, Nov 2011
[6] Alison Maitland and Peter Thomson, Future Work, 2011
[7] Regus VWork: Measuring the benefits of agility at work Mark Dixon and Philip Ross May 2011: 7
[8] Philip Ross Unwired Research, Agility @ Work: 7-8
[9] Regus VWork: Measuring the benefits of agility at work Mark Dixon and Philip Ross May 2011: 16

People

RESIDENTS, COMMUTERS, VISITORS
STAKEHOLDERS, PARTNERS

CHOICE

FREEDOM

ANYWHERE
WORKING
CITY

Place

URBAN (OFFICE) SPACE

CITY / REGION

Technology

CONSUMERISATION
OF TECHNOLOGY

CLOUD

SMART MOBILITY
URBAN INFRASTRUCTURE

the need for transport." This also ties in with the view of Sir Terry Farrell who believes in creating residential properties where people want to live rather than in out-of-town developments. He is planning to create large numbers of homes in Old Oak Common[10], a neglected area of London near Paddington.

However we must remember not to try and force everyone into the same model. The concept of home-working can be horrifying for some and Richard Watson warns us that future working could be isolating[11]. Iain Macbeth, Business Engagement Programme Manager at TfL, where there are 1.7 people to a desk, says that there still needs to be more research into the impact of hot-desking on team dynamics. He says, "it's often the younger

staff members who like to come into work for their social life and who make social arrangements that improve team spirit".

Ultimately, these different ways of working, the 'Third Space', the BYO Office, home and traditional or alternative office settings, represent an individual's emerging ability to choose how, where and when they work. At the Anywhere Organisation level, the overlap between people, place and technology roughly equates to employees and their choice of office or home and the systems and devices that enable this. At the Anywhere Working City level this view broadens out to define people's choices more holistically across their work and non-work boundaries. The enabling technologies, such as the growth of the 'cloud', ubiquitous wireless,

the consumerisation of technology and BYOD (bring your own device) extends the 'place' where you can work to numerous 'out of office' settings.

However, the perceived 'Freedom' that this allows is only part of the equation. Underlying all of these concepts is the need for competent technology that will enable 'Anywhere Working' and the empowerment of the worker. The urban infrastructure (broadband, 4G, WiFi) plus touch down space and Smarter Travel must be in order so that we can truly decide, in the broadest sense, what the 'Place' will be. Until those choices are available we are failing to exploit the freedom that we have. The Anywhere Working City can only come to being with an optimum combination of people, place and technology.

[10] Sir Terry Farrell's HS2 Old Oak Common plans revealed, Greg Burns, Fulham & Hammersmith Chronicle, Aug 12 2011
[11] Speaking at the Worktech Conference, London, Nov 2011

100 Mile City

The original concept of the 100 mile city, first put forward by Deyan Sudjic in 1993[12], looks at the influence of the city over a much wider geographical area. Sudjic looked at the attitudes of major players towards a number of large cities around the world, including New York, Tokyo, Paris and London. Moving this concept forward, the 100 mile Anywhere Working City is a large, livable, polycentric metropolis that draws in a flexible workforce from the large towns and suburbs that surround and are connected to it. This workforce is enabled by innovative technology, high speed broadband and, when necessary, an intelligent travel system. For somewhere like London that already has the seeds of a polycentric city, investment in technology infrastructure would enable the multitude of 'centres', which are often semi-deserted during the day, to be workspaces or workclusters in their own right, linked by networks or corridors of connectivity. Fiona Fletcher Smith at the GLA believes that broadband is so important that even in a stretched economy, 'public sector money should be made available for this'. Spreading the extended city concept further into the economic region of the 'Greater South East' with towns like Guildford, Tunbridge Wells and Brighton, high speed broadband could stretch the ability of an individual to work within a cityspace by a huge distance.

Steven Norris argues that the development of high speed rail links should be coupled with high speed connectivity. Plans for the HS2 rail link between London and Birmingham could incorporate the necessary cabling, allowing faster travel between the cities but also faster broadband. In its Autumn 2011 statement, the Government released plans for an investment of £100m in broadband networks in 10 major cities including Edinburgh, Belfast and Cardiff. This follows on from an agreed £530m in broadband for rural areas outlined in the 2012 budget, which not only enables each of those cities to work more effectively and to expand their functioning working area well into the countryside, but also helps to create a connected country, so not just the 100-mile city but …a UK plc.

In addition to the £530m Government has invested in rural programmes to stimulate private investment, Government is also providing £150m to improve capacity and performance of urban broadband, and £150m to improve mobile coverage across the UK. All of this goes some way to supporting the 'Anywhere Working' ideal and boosting the economy. However, for a truly capable 100 mile Anywhere Working City, transport policy must also be a priority and will certainly still be an issue for some time to come. Sir Terry Farrell refers to the 'spine of the UK' with a transport system enabling people from the east and west of the country to access the central cities. The second stage of the HS2 link to Manchester and Leeds could be vital for this vision.

At the moment, transport growth within megacities such as London is unsustainable both environmentally and logistically with overcrowding and high carbon emissions forcing government to increase the pace of change. "People rush lemming-like to the centre of the city and for all sorts of reasons neither transport nor business appreciate the potential of smarter travel," says Steven Norris, "smarter travel is vital if economic growth is to be uncoupled from transport growth." Iain Macbeth at TfL, confirms the obvious; that transport in London is groaning at the seams, "London's transport is at capacity, only Thameslink and Crossrail can provide some additional capacity and this will also extend the city." Smarter Travel combined with alternative working practices could make a huge difference to overcrowding, but transport policy must engage with business to encourage new ways of working.

The development of high speed rail links should be coupled with high speed connectivity.

[12] The 100 Mile City, Deyan Sudjic, Harcourt Publishers Ltd 1993

Third spaces around railway stations could be used to stagger commuting times, which could help companies who encourage the '14 hour day' model, where employees come into the office for a set period anytime within the extended time window. Travel providers would then respond with Smarter Ticketing. Norman Baker[13], Parliamentary Under-Secretary of State for Transport, highlights the train company Southern, who are currently piloting point-to-point season tickets on their Brighton to Seaford route.

Innovative travel pricing could become one of the catalysts for the Anywhere Working City. Using Oyster or other 'touch and pay' technologies, commuters can be provided with flexible pricing and season tickets that do not follow the five day working week. Providing greater incentives not to travel, or to travel off peak, will become part of a new approach to smart travel.

A change in societal psychology around work is seen as one of the biggest challenges for the Anywhere Working City. Iain Macbeth is trying to encourage attitudinal change at business level, specifically dealing with the travel demand around the Olympics. "Smarter working, even one day a week, is a 20% reduction in travel," he explains. This need for a change in thinking is echoed by many, including Norman Baker MP who believes that the economic situation will force change, with companies adopting flexible working in order to save money. As a supporter of the 'Anywhere Working Consortium' he discusses the need for hard evidence to persuade business. He uses the example of Microsoft, who reduced their travel by 27%, and Eversheds, who adopted new working practices, which allowed them to hugely reduce their business travel and saved a seven figure sum annually.

However it could still transpire that economic and environmental factors are the biggest enablers of the move to an extended city model, whilst pressure on companies to reduce the estimated 70% of emissions from business travel will soon push companies to reevaluate their travel and working policies. Ultimately the successful realisation of the 100 mile Anywhere Working City will be down to the people that have to live and work in it. If technology and transport make it possible i.e. easy, cheap, practicable and more time efficient, people will ultimately engage with it; 'if you build it, they will come'.

City design: evolution vs revolution

There is currently an interesting inverse relationship between established cities like London, New York and Sydney and new cities like Qatar, Shenzhen and Shanghai. Whilst the 'old school' cities, which have spent hundreds of years evolving into the metropolises they are today, are struggling to retro-fit new technology into historic, overcrowded and often unappreciative areas, the new cities are growing exponentially with technology at the core of their planning. Shenzhen's population has exploded from 350,000 in 1982 to 10 million in 2010. "They are building infrastructure in a revolutionary way. It's an experiment in socialism and capitalism," explains Sir Terry Farrell. He makes the comparison between new and old cities, "new cities will evolve into cities like London but at the moment they are looking to learn from our experiences as well as trying new things and making their own mistakes". He explains that London was not made on any grand plan and that we "need to look at where we've been to see where to go." He believes in evolution rather than revolution; "making what we have work with small incremental changes."

City populations: past, present and future

London	Shenzen	Qatar
1981 6.8 million	1982 350,000	2004 774,000
2012 7.8 million	2012 10.35 million	2010 1.69 million
The largest metropolis in Europe		
2030 9.2 million	2025 12 million	2026 3.3 million

[13] Speaking at the Worktech Conference, London, Nov 2011

Looking at the rest of the country there are some good examples of cities that are slowly transforming themselves into somewhere fit for the next 100 years. Newcastle and Liverpool, amongst others, have transformed their city centres from industrial docks to cultural and digital centres that will provide a focus for the next generation. These can be compared to the revolutionary developments of Manchester's Media City and the Royal Docks in London, which have technology at their core but which still need to evolve into somewhere people want to live as well as work. The 'new city' comparison could stretch to the revolutionary Masdar City in Abu Dhabi, which is carving a niche for itself with a sustainability goal to be carbon-free and eco-friendly or Singapore One where Fusionopolis and Technopolis clusters have been created in a dynamic new development that has technology infrastructure at its core. These projects will be watched with intense interest and could set the trend for all future cities.

When we narrowly think about technology infrastructure in a city and do not consider the bigger picture (or the upper levels of Maslow's Hierarchy of Living triangle) we are failing to realise the full potential of the city. In developed, historic cities, changes in infrastructure need to be evolutionary, however that does not mean that the net effect on city life cannot be an architectural revolution or a revolution in city living.

The parallels between new and historic cities and their ability to develop in line with the challenges of the 21st Century has never been so relevant. An interesting comparison between an old and a new city is between London, which has the technological, logistical and architectural challenge of the forthcoming Olympics, and Qatar which will be hosting the World Cup in 2022. Just as London looked to previous hosts to learn from their mistakes, so Qatar will be closely watching London. While London is slowly adapting to the needs of a techno-savvy, agile workforce, the Olympics gives the opportunity for a focused revolution in the way the city works. Many agencies will be using the time to pilot new ways of working. TfL's Iain Macbeth is working closely with business to encourage more working away from the office and flexible starting times during the Olympics to reduce the typical peak business usage around 9am and 5pm. But he warns that "we need to record the information from these pilots so that the process can be carried forward". Fiona Fletcher Smith at the GLA says, "the Olympics will be a test for a number of issues, it will be fascinating to see how companies cope with the changes and demands during the period." The hope for many is that the Olympics will act as a catalyst to new ways of working and a change in working culture. Fiona even suggests that post-Olympics incentive schemes based on desk/person ratio or car parking spaces might be possible to encourage business to continue their good practice.

The changes in the city's behaviour in response to the challenges of Olympic travel demand for London 2012 could become a milestone on the journey to transport futures in a London 'mega-city'. We must try and think that 'the dog is for life not just for Christmas' and take the lessons learned from this intense period of the Olympics on into our everyday lives. The revolution of the Olympics gives London an incredible opportunity to become the first 'Anywhere Working City' - a concept that could then be exported on a global level.

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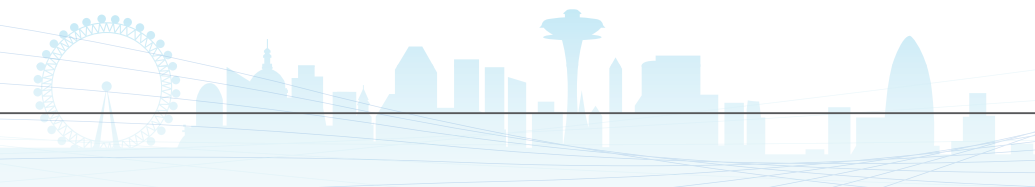
Conclusion

Technology has advanced so much that smart, mobile devices are the norm and you can connect almost anywhere in the city. Combinations of people-focused technology enables a richer user experience so that 'face time' is no longer essential to create a full working relationship and Smarter travel is being developed and integrated into our infrastructure. The concept of people, technology, place that has been put forward to enable a functioning Anywhere Organisation could also be applied at a macro-level to London and other mega cities to redefine the future of work within a metropolis.

But the Anywhere Working City is still a futuristic concept for many. However, the idea is being debated and celebrated globally and in all its forms. The web site, 'TED - Ideas Worth Spreading' has awarded its prize this year to the concept of City 2.0, which "reduces the carbon footprint of its occupants, facilitates smaller families, and eases the environmental pressure on the world's rural areas... is a place of beauty, wonder, excitement, inclusion, diversity, life." The future of the city is on the global agenda and this time technology is leading the debate. This debate is already being played out in London with the Mayor of London's Transport Strategy, which at the aspirational level talks about how strategic transport investment can transform people's experience of living and working in the city and the positive effect these will have on economic development as well as our lives.

Society will want this change but it will happen slowly and organically. By the time Generation Z comes into the workplace there will be little choice for many businesses as the expectation of a new workforce takes over. Technology is vital in driving this societal change on the future of work and in many cases the technological infrastructure for the Anywhere Working City is already in place. What is needed now is a change in attitude and psychology, where we look holistically and 'architecturally' at the workplace in its many forms within the city. This shift, combined with a motivating business force, whether that's pure economics, environmental pressure or a one-off like the Olympics can ensure that a city like London will stay at the leading edge, improving its economic health and wellbeing and remaining, as Sir Terry Farrell puts it, 'the world's great livable metropolis'.

UKMSFTCommercialPR@bitecommunications.com
+44 (0) 2088 343 472

www.theanywhereorganisation.com