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THE FUTURE OF URBAN LIVING

Foresight Research paper produced from a Think-Tank consultation held at
St George's House, Windsor Castle in December 2018.

18 March 2019



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This foresight research paper was produced from a Think-Tank consultation that explored the 'Future of Urban Living' in 2040. The consultation was organised by Future iQ, in conjunction with St George's House at Windsor Castle, United Kingdom. It was held on 13-14 December 2018. People from various backgrounds and professions participated and developed the topics and scenarios presented in this report.

The consultation focussed its discussions on the future of urban living, primarily in the context of cities in the more developed counties of the world. It is recognised that significant portions of the global urban population will reside in cities in developing counties, and that in some cases, those cities will have different challenges and outcomes.

18 March 2019

Report Prepared by:

future→iQ®

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1.0 FOREWORD



It is my pleasure, as Programme Director, to introduce this Future iQ report on The Future of Urban Living. It summarises the detailed discussions that took place here in Windsor just before Christmas 2018 and I hope it will act as a stimulus, not just for those of you who were with us for those discussions but also to interested parties elsewhere who might benefit from the findings contained in these pages.

St George's House, situated in the grounds of Windsor Castle, provides a safe physical and intellectual space where people of influence from all parts of society and, indeed, from across the globe, can gather to grapple with topics of national and international importance. The approach taken by Future iQ is very much in keeping with our ethos.

Founded in 1966 by HRH The Duke of Edinburgh and the then Dean of Windsor, Robin Woods, the House endeavours to nurture wisdom through dialogue. We offer a safe haven, as it were, away from the world of soundbites and headlines. So much of what passes for debate these days happens in the media, social and otherwise. This of course has its place but there appears to be less and less opportunity for considered debate and discussion. St George's House attempts to fill this gap by creating time and space for a more reflective approach to topics that matter to society. Through open, frank and confidential discussions we hope our guests will reach a fuller understanding of the issues pertinent to the topic at hand, together with a richer appreciation of the diversity of opinion around that topic.

Participants at a St George's House consultation usually spend twenty-four hours with us. There is of course a formal programme of work, carefully calibrated to make full and fertile use of our time together but a great deal gets done too in the margins. People break bread together, attend Evensong, if they wish, in the iconic St George's Chapel and, spend informal time probing and developing the conversations begun in the fifteenth century Vicars' Hall. Ideally, they will leave St George's House, better informed, better acquainted and intellectually enriched.

Future iQ, as the name suggests, looks ahead. What are the implications for our planet of increasing urbanisation? What are the implications for us as human beings? From climate change to social cohesion, from architecture to transportation, there is scarcely a single aspect of life that will not feel the impact of increasing urbanisation. The December consultation sought to address a range of these issues. The approach taken by Future iQ is exemplary. It is grounded in practicality. Rigorous exploration of future trends and emergent issues identified key drivers which were in turn used to help develop plausible scenarios for urban living in the year 2040 and beyond. Experts from numerous fields brought their wisdom to bear on the topic. This foresight paper will give you a reprise of the discussion. I hope it will also give you a great deal of food for thought.

Gary McKeone, Programme Director

St George's House





2.0 INTRODUCTION

We are now firmly in a new human era, commonly termed the 'century of the city'. Humanity is in the midst of an epic pivot from our predominantly agrarian roots to becoming primarily urban dwellers. This transformation is having massive impacts on cities, as they expand into metropolises, and as people live in greater concentrations than ever before in history.

This trend is being enabled by technology; and empowered by changing social values. Advances in autonomous vehicles, smart technologies and the digital revolution are creating new possibilities for cities. Much has been explored and written about the advent of 'Smart Cities' and how our urban landscapes are imagining their futuristic cityscapes.

At Future iQ, we are also very interested in what this means for people. What will be the impact on humans, our experiences, and our patterns of life? The Future of Urban Living is a foresight publication that begins to frame out different scenarios or possibilities for the future, which will shape our lives in urban environments. In order to develop this foresight perspective, we collaborated with St George's House, Windsor Castle to conduct an expert driven consultation process. This involved a two-day deep dive to explore trends and implications, and then created four plausible scenarios for how urban living might evolve looking out to 2040. This long range view is essential to allow speculation about intended and unintended consequences of various future pathways.

The participants for the consultation were invited from across a range of geographies and areas of expertise. This diversity of experience and perspectives helped create original insight. This approach mirrors the values of St George's House, which is to ferment high quality discussion on important social issues. This publication reflects the input and critical analysis of the consultation participants and the Future iQ team. It explores some of the key 'future-splitting questions', that we think are at the heart of shaping future possibilities for humans in an urban living context.

Future iQ works in the 'laboratory of real life', and as such we know the importance of having the right information for leaders as they make long term decisions. We hope this foresight publication will provide a source of useful 'future intelligence', which can help cities and communities prepare for the future of urban living.

David Beurle, CEO

Future iQ



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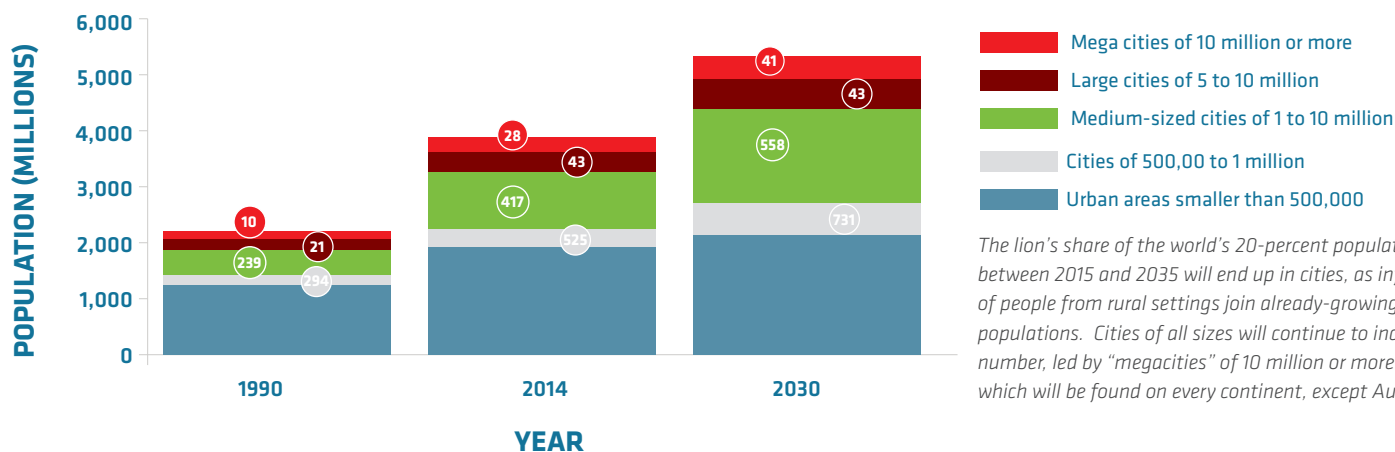
3.0 MACRO DRIVERS SHAPING THE FUTURE OF URBAN LIVING

Future IQ partnered with St George's House at Windsor Castle in December 2018, to host a two-day consultation of invited global experts to explore the future of urban living. The following report section details the consultation participants' perspectives and predictions on eleven macro drivers shaping the future of urban living.

In 2018, 55% of the world's population lived in urban areas. The United Nations estimates that 68% of the world population will live in urban areas by 2050. ⁽¹⁾ With the world population estimated to reach 9.8 billion by 2050 and 11.2 billion in 2100 ⁽²⁾, how the future of urban living takes shape has become a critical issue for global development.

One of the great challenges of the 21st century will be how do we design and evolve mega-cities that are extraordinarily liveable for people.

Global Urban Population Growth is Propelled by the Growth of Cities of All Sizes



The lion's share of the world's 20-percent population increase between 2015 and 2035 will end up in cities, as inflows of people from rural settings join already-growing city populations. Cities of all sizes will continue to increase in number, led by "megacities" of 10 million or more residents, which will be found on every continent, except Australia.

Source: National Intelligence Council, *Global Trends: Paradox of Progress*, 2017. (pg. 10)

"We need – more urgently than architectural utopias, ingenious traffic disposal systems, or ecological programmes – to comprehend the nature of citizenship, to make serious imaginative assessment of that special relationship between the self and the city; its unique plasticity, its privacy and freedom."

– Jonathan Raban, Author



“By 2040, I hope that cities would have managed transformation so living in cities will mean having the possibility of living a decent life, finding work and spending one’s life in a good, green and healthy urban environment. In growing cities, public spaces and environmental issues are going to be crucial.”

– Maria Vassilakou, Deputy
Mayor of Vienna

FAST FACT:

By 2020 the average person will have more conversations with bots than with their spouse. ⁽⁷⁾

3.1 SOCIETAL EVOLUTION OF URBAN LIVING

3.1.1 FUTURE CITY LIFESTYLES – IMPACT OF AUTOMATION

Future city lifestyles will look very different in 2040. The key emergent high level trend most influential in this transformation is undoubtedly automation in its many forms. The merging of (IT) and physical (OT) technologies has resulted in smarter products and processes emerging from new combinations of advanced hardware and software, sensors, and massive amounts of data and analytics. ⁽³⁾ These advances are automating, integrating and optimising the way we use materials, connect with each other, and create products and services. ⁽⁴⁾ Five key areas of automation will be critical to how people go about their work and everyday lives:

- Mass transit (autonomous vehicles)
- Automation of services
- Redeployment of released resources
- Non-physical work changes increasingly rapidly
- Automation of ‘decision making’

Unlike past eras of industrial automation, this one is different due to the rapidly expanding reach of automation. There is almost no occupation that will go unaffected by the adoption of currently available technologies. ⁽⁵⁾ The sociological implications of substituting machines for humans are significant, with the potential to divide and separate people more, particularly with respect to those with differing levels of access to technology. However, there is great potential to increase human connection within the ‘bubbles’ of like minded or like purposed groups such as the workplace. The great challenge will be which tasks and activities can be automated, what technologies to use, and what combinations of people and smart machines can effectively serve for the greater good. ⁽⁶⁾



“Leading companies increasingly recognise that these technologies are most effective when they complement humans, not replace them.”

– AI, robotics, and automation: Put humans in the loop, 2018 Deloitte Global Human Capital Trends.



FAST FACT:

Across all industries, by 2022, growth in emerging professions is set to increase their share of employment from 16% to 27% ⁽⁸⁾

AUTOMATION AND FUTURE CITY LIFESTYLES - A GLIMPSE INTO THE FUTURE

With automation as the overarching trend influencing the future of city lifestyles, the key question about automation is whether technology will cause humans to be more or less connected or attracted to each other in the future.

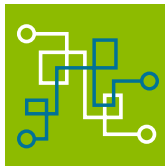


Impacts of automation:

- ➔ Requirement to trust 'machines'
- ➔ Ability for smaller units to be increasingly productive
- ➔ Potential public spaces created through release of resources

Consultation Summary Discussions:

- ✓ Consultation participants explored the important requirement for people to trust machines, in many cases instead of humans, in order to achieve the most effective results from automation.
- ✓ Automation was seen as a positive in developed nations, an impact that frees humans to live and work more efficiently and productively. In the areas of work and education, automation was not considered a threat to those professions requiring 'soft skills'; the skills representing "what we are that computers aren't." ⁽⁹⁾
- ✓ The impacts of automation will free up significant resources in urban centres and provide the opportunity not only to distribute those resources more equitably, but also to create new public spaces for urban dwellers.



FUTURE PREDICTIONS

- City lifestyles will be radically impacted by climate change.
- Released urban and human resources will be redistributed incredibly differently.
- New models will emerge for capitalism, autocracy, and beneficial democracy.

FutureInsight • Education will shift to use of knowledge; not just creating it.



"I am intrinsically an optimist. People will have to figure out how to evolve. We forget that the world has gone through incredible trauma over the past hundred years with two world wars and massive disruptions, but people have recovered and rebuilt society."

– David Beurle, CEO,
Future iQ

3.1.2 SOCIAL FABRIC AND STRUCTURE

The social fabric and structure of urban living is constantly evolving as cities grow and contract. One of the most striking and key emergent trends in urban development is the demographic diversification of their residents and workers. Population growth in cities can be attributed to three factors: homegrown population growth (including birthrates and death rates), net domestic migration and net international immigration. ⁽¹⁰⁾ Combined with the millennial population bubble, this diversification of demographic groups will require a new mindset of inclusion and sense of community not experienced in many traditional more homogenous communities. This shift in perspective will prompt the emergence of new values, connections and human interactions in urban areas.

Five key trends in the evolution of urban social fabric and structure are:

- Increased diversity and the emergence of new values
- Recognition of importance of social interactions, physical and emotional closeness
- Changing physical contact with nature
- Growing importance of the need for purpose and self-realisation and growth
- Need for community resilience in the face of threats posed by climate change

The key question in this evolution will be whether society will be motivated to be inherently selfish or if it will work for the common good. Millennials may be the determining factor in this transformation. By 2025, millennials will comprise nearly 75% of the workforce, and are known to be more tolerant and encouraging of alternative perspectives than older generations. ⁽¹¹⁾



FAST FACT:

Nearly two-thirds of millennials take interest in an organisation's corporate social responsibility. ⁽¹²⁾

"Diversity fosters innovation and creativity through a greater variety of problem-solving approaches, perspectives, and ideas. Academic research has shown that diverse groups often outperform experts."

– Vivian Hunt, Dennis Layton, and Sara Prince. *Diversity Matters*, McKinsey & Company, February 2015.



FAST FACT:

Female representation on Fortune 500 boards has been inching up in the US with women now holding 20% of Fortune 500 board seats. ⁽¹³⁾

EVOLVING SOCIETAL FABRIC AND VALUES - A GLIMPSE INTO THE FUTURE

The transformation of social fabric and structure caused by anticipated changes in the composition of urban dwellers will have significant impacts on the future of urban living.

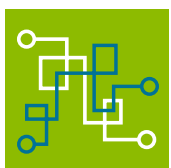


Impacts diversity and inclusion:

- ➔ Greater social interaction
- ➔ New wave of social interaction + business opportunities + new purpose on life
- ➔ Localisation / Sense of community

Consultation Summary Discussions:

- ✓ Consultation participants explored the impacts of greater diversity and inclusion on the social fabric and structure of future urban living. It was determined that this trend would cause greater social interaction amongst people and that this would bring a greater sense of community to local areas within urban centres.
- ✓ A new common sense of purpose will be created, and this would shift away from more isolationist attitudes. A new wave of social interaction will bring new business opportunities and create new business models as different groups combine ideas and processes.
- ✓ Ultimately, the trend to greater diversity and inclusion will build community resiliency and give society greater flexibility to innovate and grow. This growth and new connectedness would provide income from new transactions to be used for the common good.



FUTURE PREDICTIONS

- Cities will be the 'melting pots' that forge new social constructs.
- The advent of base incomes will provide people more flexibility and freedom, being able to spend more time making meaningful social contributions.
- The common good will prevail.

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“People talk about algorithms and Artificial Intelligence as if it is something that a machine decides to do. There is bias in the system because there is always someone who is programming the algorithms. The big question will be who is going to own the data and algorithms and how are we going to make it transparent and in line with democracy.”

– Minister Pascal Smet,
Minister of the Government
of the Brussels – Capital
Region, Responsibility for
Mobility and Public Works

FAST FACT:

Roughly 32% of city dwellers in 2050 will live in slums, a doubling of today's numbers. ⁽¹⁷⁾

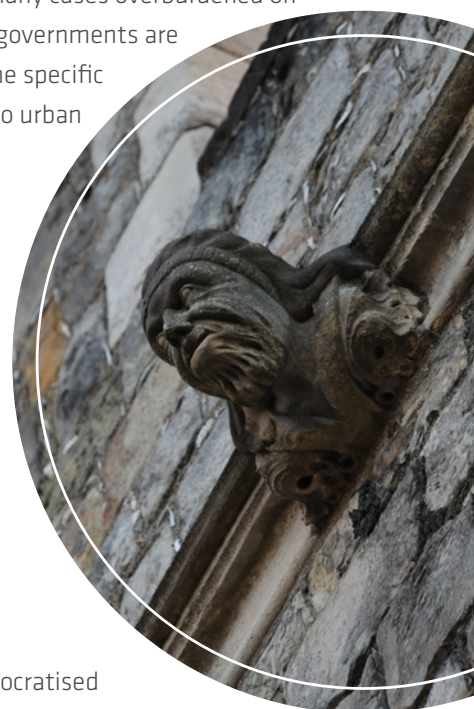
3.1.3 DISTRIBUTION OF POWER AND INFLUENCE

The distribution of power and influence in urban areas is quickly changing with the exponential acceleration of information connectivity. ‘This interconnectedness has accelerated the already rapid pace of globalisation, further spurring structural adjustments that demand a government response, as well as a growing backlash caused by resentment to growing inequality worldwide.’ ⁽¹⁴⁾ State governments are in many cases overburdened on many fronts and this is opening a new role for cities. Local city governments are growing in power as they are better positioned to understand the specific needs of citizens and tend to be pragmatic in their approaches to urban challenges. ⁽¹⁵⁾

Six key emergent trends are balancing the distribution of power and influence in urban areas:

- Impacts of information
- Creation of new jobs
- Concentration of power among a few leading to inequalities
- Populism/Revolution
- The impacts of social media, fake news, affinity, silos and bubbles
- Creativity ad hoc and temporary communities

Where social media and interconnecting technologies have democratised access to information worldwide, those who control the message can disrupt democratically established institutions themselves. The most powerful entities and communities will work hard to create mobilising narratives and ideologies, cultivate trust and credibility, and webs of cooperation across issues. ⁽¹⁶⁾ As urban living is transforming and becoming more dense, diverse and inclusive, there exists a critical opportunity to address societal inequities and to steer the balance of power for the greater good.



“The most powerful actors of the future will be states, groups, and individuals who can leverage material capabilities, relationships, and information in a more rapid, integrated, and adaptive mode than in generations past.”

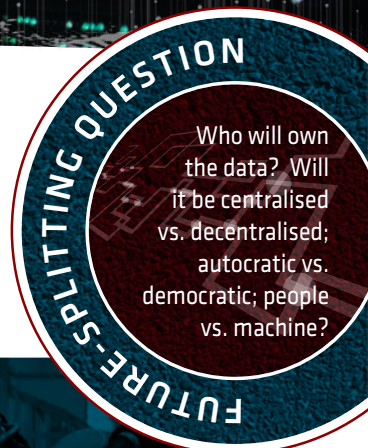
– National Intelligence Council, *Global Trends: Paradox of Progress*, 2017.

FAST FACT:

At present, only 43% of citizens trust their government, and this rate is dropping. (OECD, 2016a: 198)

THE BALANCE OF POWER AND INFLUENCE - A GLIMPSE INTO THE FUTURE

The balance of power and influence in society is a foundational building block of democracy. Increasingly, power is derived from the ability to control data and information about and for the people.

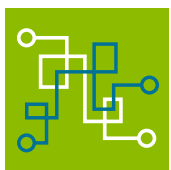


Impacts of power:

- ➔ Divide between metropolitan and non-metropolitan
- ➔ Gated communities within Europe
- ➔ Potential City devolution

Consultation Summary Discussions:

- ✓ Consultation participants explored how power and influence is distributed in urban environments. Concern was expressed about the potential for the concentration of power in the hands of the few that can lead to inequality and societal devolution.
- ✓ It was noted that a marked increase in recent international immigration has led to a fear of unrest and a rise of gated communities in Europe, as well as a growing divide between metropolitan and non-metropolitan areas.
- ✓ The human aversion to change, and the reactionary impulse to control was addressed, particularly with respect to information/data control and the potential disparities and inequities that could occur between those who have access and those who don't.
- ✓ Privacy issues were highlighted as a topic that should be watched, especially with growing automation and the use of predictive analytics.



FUTURE PREDICTIONS

- The increase of unequal spatiality within the same city.
- AI - machines will control humans, especially in the Healthcare industry.
- Data privacy will shift power.

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"You cannot give career guidance to your children anymore as you just don't understand the jobs of today. That is a big issue for the older generation."

– James Barnard, Head of Corporate Sales, DMCC

3.1.4 DEMOGRAPHIC DISTRIBUTION

Current demographic shifts occurring in the world will dramatically shape the future of urban living in 2040. As overall population growth slows and becomes proportionately older, cities will be required to accommodate a society with vastly different needs. Cities and the global economy can thrive in the face of demographic change as long as they sustain growth in per capita GDP and maintain a high quality of life for their citizens. ⁽¹⁸⁾ This will involve attracting, retaining and providing lifelong learning opportunities for workers of all ages. Strong leadership with an eye to addressing demographic needs equitably, creatively and specific to each urban area will be necessary.

Four key trends representing an everchanging demographic distribution in urban areas:

- Growing ageing population
- Risk of solitude
- Change in job opportunities and people having both a city and rural home
- Change in use of land and property

As urban areas grow more slowly and populations age, two key questions emerge with respect to the trajectory of urban living. The first concerns the gradual 'urbanisation' of the suburbs and surrounding areas. How will urban and rural areas be defined and where will they start or end? The second asks how the very different needs of the millennial bubble will coexist with the growing needs of the ageing. How will they coexist and how will governments serve their needs equitably and sustainably? One trajectory involves potential chaos and urban sprawl bringing isolation and resentment, the other provides for an organised approach to urban planning that foresees anticipated demographic needs, prepares for them and provides quality of life for all citizens. The social contract for the future of urban living must be rooted in an age-friendly philosophy. ⁽¹⁹⁾

FAST FACT:

By 2050, all regions of the world except for Africa will have nearly a quarter or more of their populations at ages 60 and above. ⁽²⁰⁾

"Cities are essential partners for effective policy action in ageing societies and offer inspiring examples. Ultimately, policies to meet the challenge of demographic change will be central to the construction of economically and socially resilient cities."

– Ageing in Cities: Policy Highlights, OECD, 2015.





FAST FACT:

By 2020, individuals aged over 60 will be greater than children younger than five. By 2050, the world's older adult population will have doubled to 2 billion. ⁽²¹⁾

CHANGING POPULATIONS DISTRIBUTIONS - A GLIMPSE INTO THE FUTURE

As more people concentrate in cities, the familiar dynamics of live, work and commutes will change. Trends may include more people working from home, and more people ageing in place. This could increase social disconnect and the prevalence of isolation.

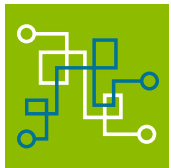


Impacts of ageing and urbanism:

- ➔ Not enough housing/offices for working population
- ➔ Home working – change of offices into houses
- ➔ Need for better mobility.

Consultation Summary Discussions:

- ✓ Consultation participants explored the impacts of ageing and urbanism on the future of urban living. Of immediate concern was the growing divide between extreme wealth and poverty within urban areas.
- ✓ Also, of concern was the lack of housing for the ageing and younger populations, as well as a lack of office space for workers. Solutions involved repurposing buildings, more affordable housing, as well as a perspective change in the need for ownership; a transition to a more shared economy where housing services, transport, and work spaces are shared.
- ✓ Addressing the needs of migrant workers was seen as critical. Policy solutions included a focus on nation-building assistance to prevent the dire need for immigration and to make migrant numbers more manageable in recipient countries.



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FUTURE PREDICTIONS

- Generations of people will have grown up only ever having known a city life, and rural areas will be unfamiliar and alien places.
- Rural areas will be much less populated, and primarily used for resource production, agriculture, nature conservation and recreation.
- Urban communities will increasingly be a rich mix of generations, cultures and services.



“There are a lot of things that could be easily improved in cities to make them more human. On one hand you have technology that is really changing and developing, on the other hand you have human nature which hasn’t really changed for centuries and enjoys socialisation and nature which should be incorporated into cities.”

– Josephine Yilan Liu,
Founding Partner, Urban
Future Global Conference

FAST FACT:

In the United States, nearly 78% of people over the age of 45 want to stay in their home for as long as possible, and 80% believe their current community is where they will always live. ⁽²⁴⁾

3.2 CHANGING CITYSCAPE OF URBAN LIVING

3.2.1 BUILT ENVIRONMENT

The built environment will be a key element of the future of urban living. Given changing demographics and the access to new technologies and materials, planners are able to focus on constructing new and redeveloping old built environments in ways that are making cities more liveable and sustainable. Growing cities and communities are engaging in urban and suburban “Placemaking” that focuses on three areas in particular: streets and circulation, open spaces, and buildings and land use. Key placemaking characteristics include walkability, connectivity, a multi-layered public realm, diverse mix of choices, and authenticity. ⁽²²⁾

Four key emergent high level trends shaping the liveability of urban areas include:

- Technology is changing the shape of the city
- Housing prices make it difficult to live in the city
- A transition from traditional business storefronts to online retail
- Working from home will reduce the need for infrastructure and create more green spaces

New technologies bring the potential for positive transformation, especially in the ability to improve overall health and wellbeing of urban dwellers by creating more supportive environments or by reducing carbon emissions and the threat of climate change effects. “Citizen evaluations of their city’s built environment or aspects of ‘Place’ facilitate the ability to enjoy life and attain one’s daily needs; these place measures may be a key to understanding not only happiness but health and other factors related to quality of life.” ⁽²³⁾

“A Liveable Community is safe and secure, has affordable and appropriate housing and transportation options, and offers supportive community features and services. Once in place, these resources enhance personal independence, allow residents to age in place, and foster engagement in the community’s civic, economic and social life.”

– AARP Policy Book 2017-2018, <http://www.aarp.org/policybook>

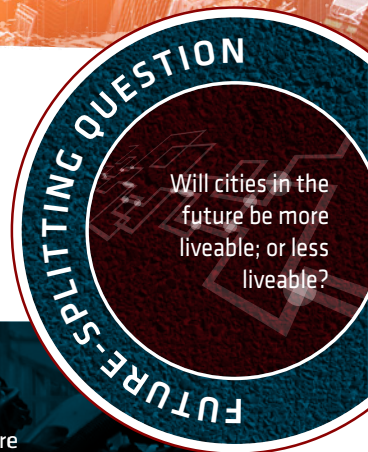


FAST FACT:

In 2016, Dell announced its plans to further expand its telecommuting and remote work initiatives citing a \$12 million annual savings from reduced office space costs. ⁽²⁵⁾

TRANSFORMING THE BUILT ENVIRONMENT - A GLIMPSE INTO THE FUTURE

The built environment is key to how the shape of cities and quality of life will evolve in the future of urban living.

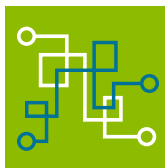


Impacts of liveability:

- ➔ Growth of homelessness
- ➔ Urbanisation to reduce carbon emissions
- ➔ Economic Disruption such as the destruction of businesses

Consultation Summary Discussions:

- ✓ Consultation participants explored how physical changes with more technology could alter the cityscape in the future of urban living. Topics included the price and nature of housing (without affordable housing, greater homelessness could occur), the impact of online retail (causing business to disappear) and working from home reducing the need for infrastructure.
- ✓ Many of the exact changes to physical infrastructure were deemed yet to be uncovered. The potential of city wide digital infrastructure would create much cheaper connectivity and allow for more social interaction.
- ✓ Two crucial questions arose: the first concerning who would pay for all the changes to the built environment; the second concerning what the shape of cities would look like in terms of issues like storage. Funding options included the opportunity for more public-private partnerships.



FUTURE PREDICTIONS

- There will be growth in a shared economy.
- The built environment will create new ways, methods, and spaces for social interactions.
- Construction of the built environment will require new ways for financing infrastructure.

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“We need to redefine the role of cars, public transport and bicycles. How do we better integrate these transportation modes, in order to provide a seamless way from A to B.”

– Stephan Herbst, Technical
General Manager, Toyota
Motor Europe

FAST FACT:

Cities will be home to almost 5.4 billion residents by 2050, equivalent to 2/3 of the projected global population. The number of vehicles on the road will double to reach 2 billion by 2050. ⁽²⁸⁾

3.2.2 MOVEMENT AND MOBILITY

New systems of movement and mobility have the potential to completely transform urban living by the year 2040. The application of integrated technologies and innovative services combined with disruptive demographic and socio-economic trends are fundamentally reshaping mobility.⁽²⁶⁾ Governments and private enterprise are at a tipping-point that could dramatically alter the trajectory of environmental sustainability and quality of life for urban dwellers. Adoption of seamless mobility could be cleaner, more convenient, and more efficient than current options, accommodating up to 30% more traffic while cutting travel times by 10%.⁽²⁷⁾ Seamless mobility would also democratise movement by providing multimodal transportation options that would allow for greater connectivity and access to more demographic cohorts.

Key emergent high level trends :

- Mobility will be more efficient (faster and cheaper)
- People will have mobility access from their yards
- CASE – connect, advanced, share and electric
- Awareness will increase about the link between mobility and Air Quality
- The logistics of distribution/distribution centres will be affected

The impacts of transitioning to a seamless integrated mobility system (SIMSystem) will cause a dramatic improvement in the future quality of life and connectivity for urban dwellers. Examples include innovations such as autonomous vehicles combined with a sharing economy resulting in diminished vehicle ownership and former car parks repurposed to public spaces. The logistics of movement and mobility are not efficient today and have the potential to become chaotic in larger urban areas. By contrast, SIMSystems would centralise operations providing seamless environments of connectivity.

“Whether it is a transcontinental trip, a commute to the office, a stroll to visit a neighbour, or sending a package, it is mobility that connects us to our world and each other. It is through mobility that we are able to earn a living, access goods and services, and enjoy our friends and family. At its best, mobility enables prosperity and equality.”

– John Maoavenzadeh and Scott Corwin. *Designing a Seamless Mobility System (SIMSystem): A Manifesto for Transforming Passenger and Goods Mobility*, World Economic Forum in Collaboration with Deloitte, White Paper, 2018.

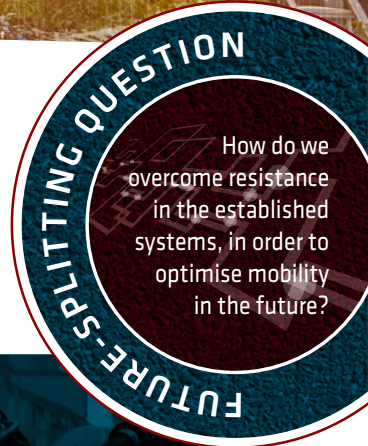


FAST FACT:

By 2030, 40% of today's transportation revenue pool – the money that residents in dense, developed cities like New York, Paris and Tokyo spend on transit – could be served by modes of transport that don't even exist now. ⁽²⁹⁾

MOBILITY IN CITYSCAPES - A GLIMPSE INTO THE FUTURE

In larger cities, the ease of movement and mobility will critically shape the human experience.

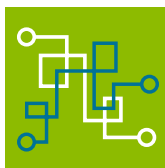


Impacts of automation:

- ➔ Less vehicles and privately owned
- ➔ Increase in the amount of public and open space
- ➔ Increase of quality of life as ease of mobility increases

Consultation Summary Discussions:

- ✓ Consultation participants explored not only the impacts of movement and mobility on urban living, but the significant resistance to making the necessary transitions.
- ✓ Most significant were the immediate investment costs of technology and physical infrastructure changes, as well as the challenge of changing consumer behaviour.
- ✓ Many kinds of mobility were discussed, from rocket travel to shared scooter/bike systems to public transport. Participants considered significant technology trends including automation, shared technology, and electrification.
- ✓ It was acknowledged that an increasing awareness about health and equality including the positive impacts of clean, safe emissions, efficiency and affordability of new mobility options were seen as key to overcoming resistance to change.
- ✓ Participants highlighted the need to connect new mobility technologies to other sectors (such as energy) to increase interoperability.



FUTURE PREDICTIONS

- Improved mobility options will deliver a system that will be clean, safe, and efficient.
- Unrestricted mobility will mean happiness and pleasure for individuals.

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"I advise officials to step back and think more broadly about what makes a city smart. According to the UK Department of Business, Innovation and Skills, there's no absolute definition or fixed end result. Instead, there's a process by which cities become more liveable, resilient and better able to respond to challenges. The factors that enable this process are citizen engagement, hard infrastructure, social capital and digital technologies."

– George Atalla, Partner,
Global Sector Leader –
Government & Public Sector,
Ernst and Young

FAST FACT:

In a mid-sized City, emissions from search traffic can be reduced by at least 25% with smart parking data and efficient wayfinding systems. ⁽³³⁾

3.2.3 APPLICATION OF TECHNOLOGY

Rapidly evolving technologies of the Next Industrial Revolution have already begun to influence the future of urban living. The key trend is widespread implementation and coordination of cyber-physical systems, 'smart systems', that have been developed and are in the innovation and early adoption phases. Automobiles, aircraft, medical devices, building controls and the smart grid are all examples of cyber physical systems that we use every day and connect us to each other and our broader world. ⁽³⁰⁾ Cities use these technologies to build service and information ecosystems that can dramatically alter the way humans interact with people and things. "'Smartness' is not just about installing digital interfaces in traditional infrastructure or streamlining operations. It is about using technology and data purposefully to make better decisions and deliver a better quality of life." ⁽³¹⁾

Key emergent high level trends in the application of technology include:

- Cities becoming the interface between humans and algorithms
- Cities becoming the ecosystem of all communities online/off line etc to create 'unplanned' serendipities
- Cities coordinate and provide all services/platforms to citizens' needs and well-being
- Cities become the brand of lifestyles and personal identity
- Hub of information resources and growth, laboratory of urban/social innovations

As cities become the interface or hubs of smart ecosystems, the critical question will be how to balance power between multinational companies, local authorities and the needs of individual citizens. Who will control data and resources and how will they be used, stored and protected? How will information be shared and what sort of governance should oversee rapidly connecting global systems? Security issues such as cyberattacks have become a global risk, affecting all industries and all aspects of daily lives. ⁽³²⁾ The balance of these risks, benefits and power will be played out in the laboratories of urban living.

"Cities will play increasingly central roles as entrepreneurial talent hubs. Entrepreneurial talent being strongly related to innovation, eco-systems around 'smart cities' will act as talent magnets."

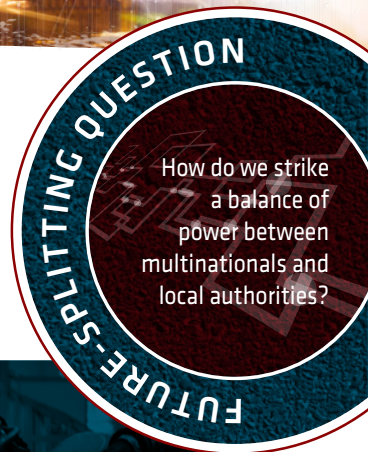
– INSEAD (2019): The Global Talent Competitiveness Index 2019, Fontainebleau, France.

FAST FACT:

In June 2018, London launched a roadmap to make it 'the world's smartest city' and address its most pressing challenges: poor air quality, urban design and digital connectivity. ⁽³⁴⁾

TECHNOLOGY RESHAPING CITIES - A GLIMPSE INTO THE FUTURE

To manage the impacts of technology on urban living, the transition to digitisation will require the collaborative efforts of government, private industry and individual citizens.

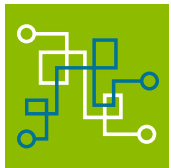


Impacts of becoming a data hub:

- ➔ Business Opportunities
- ➔ Digital rights issues/ethics
- ➔ Challenge of the power of city states vs explorations
- ➔ Role of the City
- ➔ City Reform
- ➔ Personal Health Management

Consultation Summary Discussions:

- ✓ Consultation participants explored the risks and opportunities of applying innovative technology to urban living. Overwhelmingly, technology was considered critical in the transformation of urban areas to become more efficient and sustainable, especially in the face of climate change.
- ✓ As potential hubs for community ecosystems, the role of cities was seen as providing instrumental systems and platforms that provide greater connectivity of all sorts, resource, and health management.
- ✓ With respect to the adoption of 'smart' technologies, participants expressed that while a positive, issues of digital rights, ethics and cybersecurity would need to be part of a long term dialogue between cities, corporations and individual citizens. This would require careful balance of global standards, regulations, transparency and access.



FUTURE PREDICTIONS

- Suburbs will become part of the inner city.
- Ethics will play a significant role in how, when and where technology is applied.
- Technology will create new power relationships amongst stakeholders.

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“The application of technology in food is enhancing availability, enhancing trends and is enhancing the way that people eat. I am interested in figuring out what those implications on food in the future could be and how we can as individuals and as a society impact that.”

– TC Chatterjee, CEO, Griffith Foods Inc.

FAST FACT:

Currently in the United States, an estimated \$2.6 billion is lost every year as water mains leak treated drinking water. ⁽³⁷⁾

3.2.4 RESOURCE CYCLE

The future of urban living is intricately tied to resource production, use and disposal. With material consumption by the world’s cities growing from 40 billion tons in 2010 to 90 billion tons in 2050, resources should now become a central policy concern. ⁽³⁵⁾ The application of smart systems and consumer education programmes have the capacity to transform infrastructure by creating significant efficiencies and conservation of resources. A recent study by McKinsey’s found that by deploying a range of digital tools, a city could, on average, cut greenhouse gas emissions by 10-15%, lower water consumption by 20-30%, and reduce the amount of unrecycled solid waste per capita by 15-20%. ⁽³⁶⁾

Key emergent high level resource cycle trends include:

- Megacities and centralisation of demand – super demand “cities are the new countries”
- Microgrids, local food, food composting, ugly food
- Climate change increases acute shocks
- Battery storage, IOT (transparency), Big data
- Consumer demand for self-sufficiency

As cities and urban areas become hubs of human activity, connectivity and systems ‘smart’, the overarching impact will be the centralisation of systems and services for greater efficiencies. But will the centralisation of resource cycles lessen resiliency in the case of an attack or natural disaster? Will the benefits of scale outweigh the risks of single points of failure? The key future-splitting question for the future of urban living and city planning decision makers will be whether the resource infrastructure of cities becomes more centrally managed or decentralised.

“Around the world, I see more and more towns and cities determined to provide (such) improvements for their residents....a different urbanisation, one that is sustainable and inclusive, is certainly possible.”

– Erik Solheim, Under-Secretary General of the UN and Executive Director, UN Environment

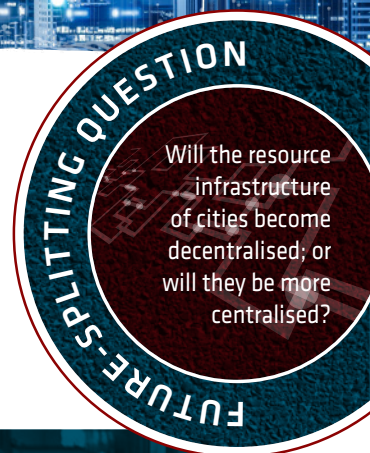


FAST FACT:

Cities that become more resource efficient in transport, commercial buildings, and building heating/cooling could achieve reductions of between 36 to 54% in energy use, GHG emissions, metals, land and water use. ⁽³⁸⁾

PROVIDING RESOURCES FOR OUR CITIES - A GLIMPSE INTO THE FUTURE

An expanding urban population will drive an increase in the total resource needs and consumption within the emerging metropolises and metroplexes. Already this is placing stresses on water resources in many parts of the world. Resource management will become increasingly important.

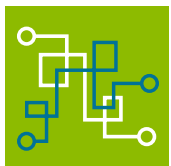


Impacts of infrastructure transformation:

- ➔ Centralisation results in some efficiency but less resilience
- ➔ Decentralised resource cycles will improve resilience – lower efficiency
- ➔ More public and private partnerships – “using our influence as consumers to leverage P&P partnerships”
- ➔ More circular communities based on cradle to cradle principles will increase connectivity

Consultation Summary Discussions:

- ✓ Consultation participants explored the impacts of transforming resource cycles for the future of urban living. Rising demand for resources and the need for resiliency in resource cycles would create a demand for more communities based on cradle to cradle principles in circular economies.
- ✓ With effective city planning, this would centralise resources causing the point of production to get closer to the points of consumption.
- ✓ As more urban space becomes available caused by the inevitable new efficiencies of movement and mobility, spaces could be reused for urban farming and alternative power generation. Participants saw these impacts as opportunities for greater public-private partnerships, and entrepreneurship.



FUTURE PREDICTIONS

- Freed up parking lots will be converted into resource producing spaces. This will require financial subsidies.
- The point of resource production will be much closer to the point of consumption.
- Urban resource production will become as critical as affordable housing is today.
- Public and private partnerships are key to this future.

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“The most difficult and important trend is Climate Change. We have to monitor trends to provide the basis of reducing emissions. In the next ten years we have to achieve a radical restructuring of cities and how they function if we are going to avoid the dangers of climate change.”

– Professor David
Satterthwaite, International
Institute for Environment
and Development (IIE) and
University College London

FAST FACT:

Together, India, China and Nigeria will account for 35% of the projected growth of the world's urban population between 2018 and 2050.⁽³⁹⁾

3.3 OVERARCHING GLOBAL TRENDS SHAPING THE FUTURE

Globalisation, climate change and the next industrial revolution are some of the macro forces that are reshaping the world and cities, no matter where we live. These trends drive more integration and global networks of trade and supply chains. Ownership structures are becoming more global, shifting key points of influence. These trends are also driving greater mobility of people, including migration, tourism and business transfers. Cities have been, and will continue to be buffeted by external trends. How society and cities evolve in response to these trends will involve future-shaping decisions.

Some of these key emergent high level global trends:

- Technology will radically reshape the work humans do, and what we consider as jobs.
- Globalisation is driving greater interconnection and interdependence.
- Cities are becoming larger and more influential than some states and counties.
- Climate change impacts are accelerating, and there is little evidence that a co-ordinated response will quickly emerge to avert alarming consequences.

Shifting citizen expectations is an emerging area. There are new norms emerging in terms of what is considered a fundamental right or service – fresh water, clean air, peaceful living. The push back on tourism in some parts of the world, points to local citizens' expectations that their lifestyles and neighbourhoods are part of their unique domain of influence and control. The debates about immigration and free movement of people also points to the tipping-point moments when 'too much change is too much'. Civil society will have to evolve as we absorb more impacts of macro trends, and cities will continue to be one of the most important building blocks of society.

“To build a Future City, we will require technology and a digital platform. This is the easy part. For us to live, learn, and work in cities that we haven't fully imagined yet requires incremental innovation, and a culture of inclusion and creativity. Just based on our experiences from the past 20 years we do know that the next 20 years will show even more change and disruption. Municipal leaders have the daunting task to lead the process of re-imagining our communities. Future cities are for people and by people.”

– Dr. Rick Huijbregts, Vice President of Digital Transformation and Innovation, Cisco Canada, 16 December 2016

FAST FACT:

Large cities generate about 75% of global GDP today and will generate 86% of worldwide GDP growth between 2015 and 2030. ⁽⁴⁰⁾

MACRO TRENDS RESHAPING THE WORLD – A GLIMPSE INTO THE FUTURE

The emerging macro global drivers are bigger than any city or country. They will radically reshape cities and societies at many levels. Within these trends there are significant areas of unknown, especially at the level of how technology will reshape human roles and endeavour.

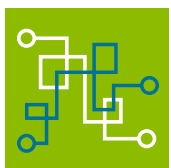


Impacts of liveability:

- ➔ Technology will radically redefine jobs and human work.
- ➔ Greater interconnection between cities will create co-dependence, where groups of cities may collaborate on key issues, exerting greater political influence.
- ➔ Climate change will deliver more catastrophic weather events, increasing stresses on city resources, response capacity and management

Consultation Summary Discussions:

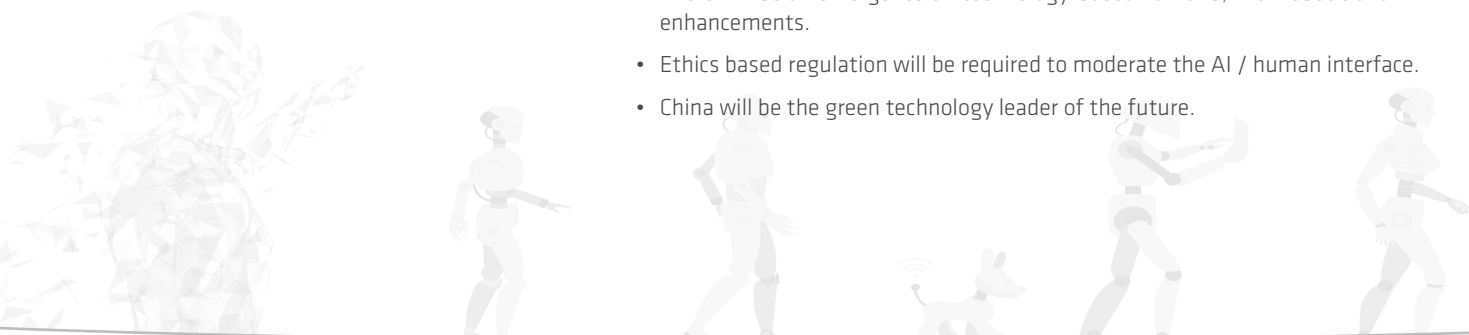
- ✓ Traditional metrics used to measure growth and success, such as monetary performance and GDP, may begin to transform to include aspects such as happiness, purpose and common good.
- ✓ The concept of democracy and municipal institutions and structures may need to evolve to account for cities now developing their own significant power-base and influence.
- ✓ The emergence of giant technology companies, coupled with the importance of technology platforms in the public realm, will drive the need for innovative public-private partnerships and control-sharing arrangements.
- ✓ Climate change will have devastating impacts and will drive mass migration of populations, in many cases, into cities.



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FUTURE PREDICTIONS

- Likely, we will not act fast enough to prevent massive system collapse resulting from climate change.
- Humans have traditionally been defined by our jobs, but that could change to be our purpose.
- There will be an emergence of 'technology-based humans', with robotic and AI enhancements.
- Ethics based regulation will be required to moderate the AI / human interface.
- China will be the green technology leader of the future.

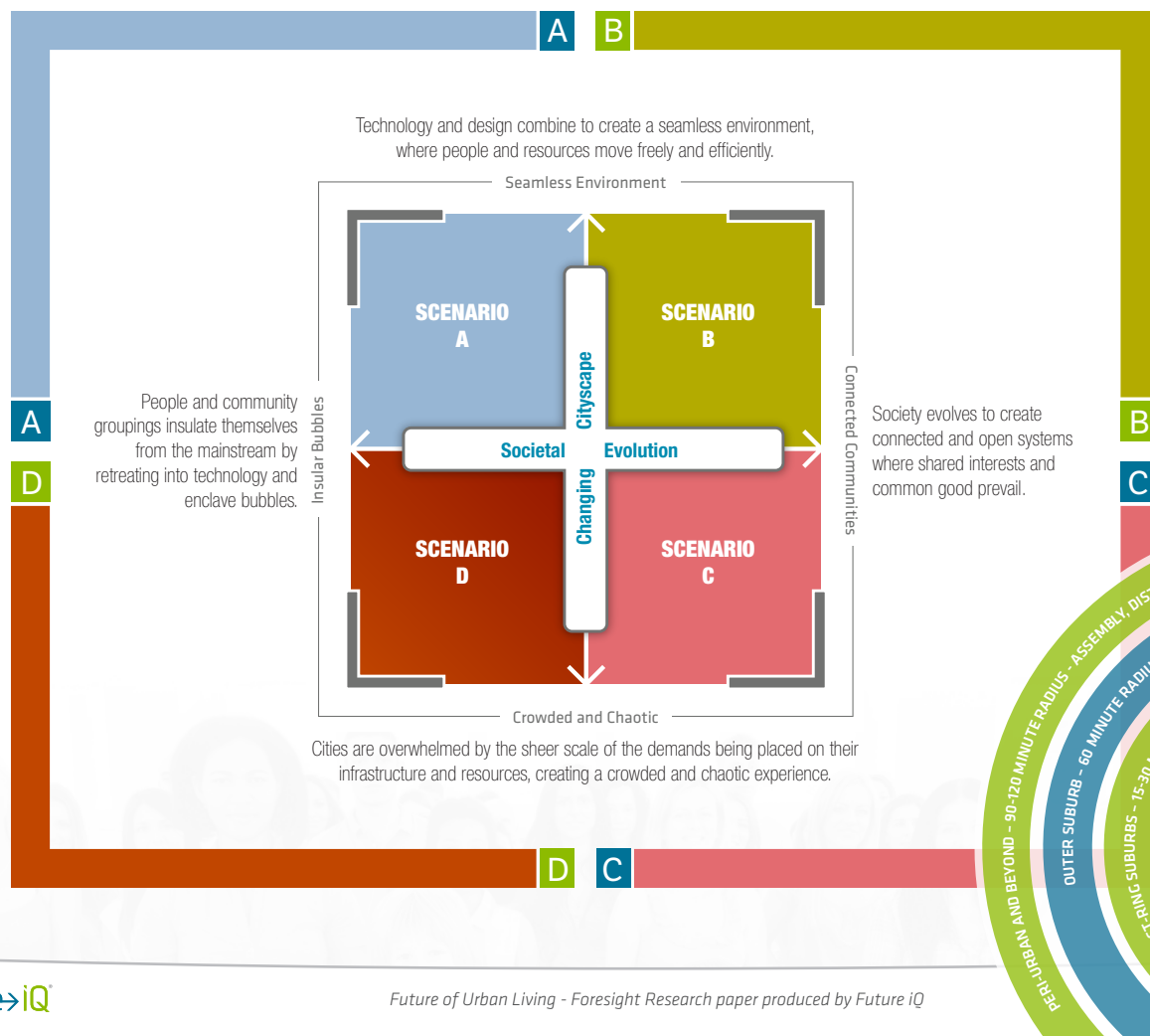




4.0 THE FUTURE OF URBAN LIVING – PLAUSIBLE SCENARIO DEVELOPMENT

Based on prior research into the topic of the future of urban living, key macro themes were identified to become the basis for the two axes on the scenario matrix. The two axes identified were Societal Evolution and Changing Cityscape. Consultation participants worked with the scenario matrix, defined by the two major axes of 'Societal Evolution' and 'Changing Cityscape'. Brief descriptions were also attached to the end points of each driver axis. Participants were divided into four groups to develop a narrative for each scenario. Each group was asked to describe the characteristics of the Future of Urban Living in 2040 under the conditions of the scenario quadrant that they had been given, and particularly as they related to the zones of inner city, first-ring suburbs, outer suburbs, the peri-urban and beyond. Narratives and descriptions of each scenario as developed by the workshop participants are included in the following sections.

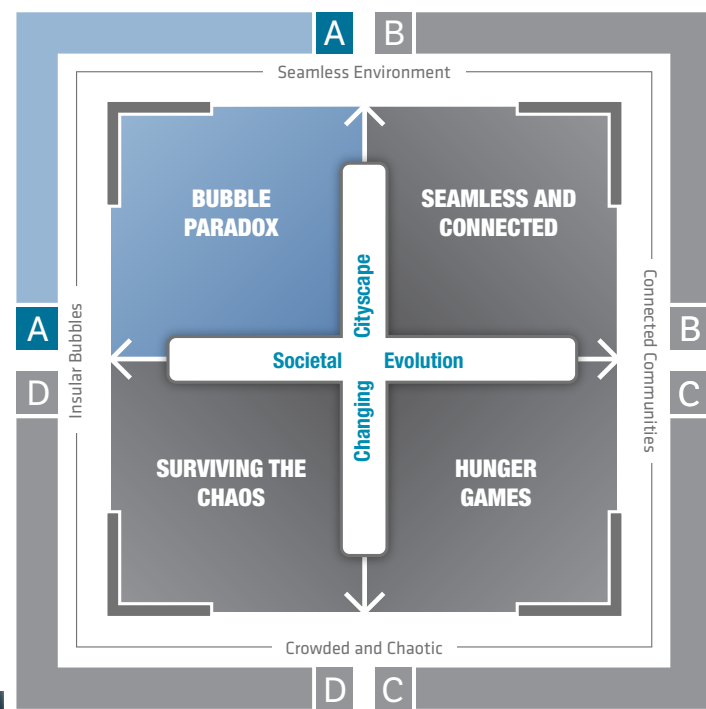
Scenario planning was used to explore the topic of 'Future of Urban Living'. The process teases out plausible future scenarios and examines them from a speculative standpoint. They represent different possibilities for the future.





4.1 SCENARIO A: BUBBLE PARADOX

This scenario forecasts a future where people insulate themselves by retreating into ‘bubbles’ that match their sensibilities and circumstance – work, physical, ideological, educational, religious, etc. A ‘not in my backyard’ societal mentality prevails. The bubbles often overlap making experimentation possible but breaking into new bubbles is difficult. Technological advancements prevent total isolation by facilitating a seamless environment of transportation and communications within and across the overarching rings around the inner cities. Communities build out their lifestyles according to the human needs within each bubble. Drivers of bubble creation are selfishness and a desire for security. As 2040 approaches, bubbles collide, collapse and burst, but new bubbles are created as access to technology creates greater disparities and people lose the ability to relate to those outside of their bubbles.



The Bubble Paradox scenario offers an insular future for people, as they cluster and live in more closed worlds. While this will initially provide the comfort of familiar views and seamless living, it may ultimately stoke divisions and misunderstanding.





This future sees well resourced and organised city based communities. Technology creates a lot of 'workability' and well functioning systems. However, at some point, innovation may decline as there is less exposure to new and diverse views.

SCENARIO A CHARACTERISTICS: BUBBLE PARADOX - 2040

The characteristics describe a future scenario defined by people seeking security and comfort in familiar surroundings. The physical and social spaces become increasingly protected with barriers to outside influence. This creates an optimal future for those with the resources but may leave some groups behind.

City Zone	Economy and Industry	Community and Society	Cityscape and Environment
Inner city	Small scale decentralised manufacturing and maker-spaces flourish. Clusters form based on profession and skills.	City is defined by silos based on wealth and interests. There is competition for prime locations, creating tensions.	City centres are attractive to tourists, and high demand for real estate leads to a decline in public spaces.
First-ring suburb	New transport and location based industries and taxation system introduced by communities.	Communities access is restricted and protected by measures like biometrics access tools. They are extremely well connected internally.	Inner ring communities become enclaves for the wealthy, with gated communities and manicured landscapes.
Outer suburb	Urban farms and small factories emerge, as suburbs strive for independence and self sufficiency.	Many of the ageing populations will live here, as they seek peaceful tranquil lives within interest and cultural groups.	Testing ground for new models for urban living and experiments, such as live and work models.
Peri-urban and beyond	More autonomy and specialised innovation clusters of industry form, particularly where resources can be accessed and controlled.	People who are nature-lovers and 'anti-tech populations' are attracted to this zone. Ideology focused villages emerge.	New hubs and villages emerge in peri-urban space, creating unique oasis areas and nature preservation experiences.

2020 HEADLINE NEWS:
"Fragmentation in cities on the rise - New urban models proposed"

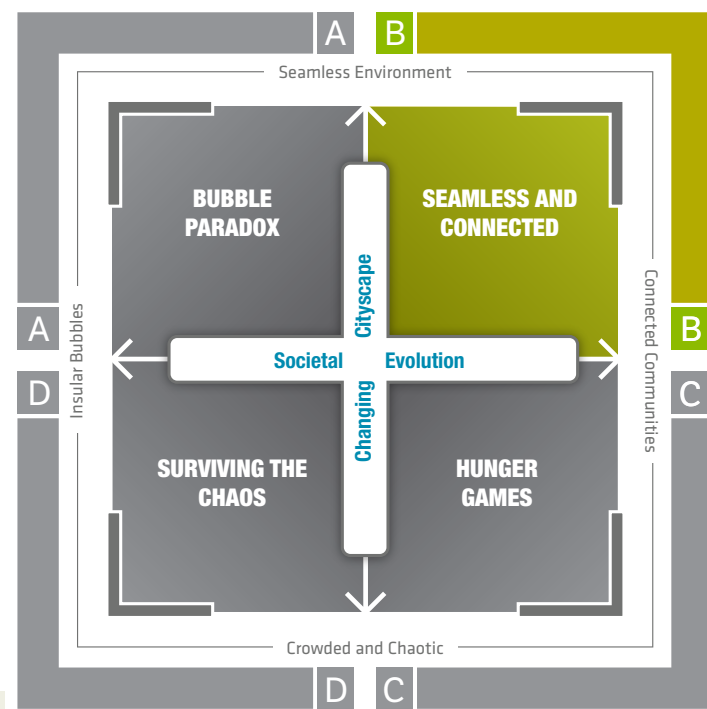
2030 HEADLINE NEWS:
"First blockchain powered bubble community develops"

2040 HEADLINE NEWS:
"First new 'zero tech and zero community rules' bubble city formed"



4.2 SCENARIO B: SEAMLESS AND CONNECTED

This scenario forecasts a future where people have connected communities and a sense of togetherness. No gated communities exist and a common sense of good prevails. Society is multigenerational, diverse and engaged within a seamless environment of effortless mobility and automation. Shared mobility grows and lines between the rings of cityscape blur and change as transportation and communication systems connect and move people in new ways. People are able to live, work and produce within the same environment and this encourages experiential living and sharing of ideas. Water and resources are abundant and resilient as full life-cycle materials management produces green cities and public spaces. Strong democratic institutions govern society and operate transparently. Control of data lies with governments requiring strong leadership and ethical decision making.



The Seamless and Connected scenario offers an optimal human experience future. Humanity lives together on a mass scale, without the experience of friction or isolation



This future sees highly connected city based communities. Significant percentages of the required resources and services will be created and delivered within this seamless urban system.

SCENARIO B CHARACTERISTICS: SEAMLESS AND CONNECTED - 2040

These characteristics lay out some high-level outcomes that might occur in this scenario. A unifying theme is the way cities will evolve with high levels of mobility and connectivity, offering greater choice and efficiency. This allows services and goods to be deployed across the urban area in a quick and efficient manner.

City Zone	Economy and Industry	Community and Society	Cityscape and Environment
Inner city	Vibrant economy driven by the knowledge and technology service sector. It attracts innovators and collaborators.	Urban core population is connected and engaged with a sense of shared purpose. The inner city is a melting pot of new ideas.	Public spaces are transformed, and people travel exclusively on shared mobility systems.
First-ring suburb	There is a surge in cultural activity and community based enterprises.	Communities are defined by diverse, multigenerational and engaged citizens. There is vibrant discourse and interaction.	The suburbs are interconnected and organised, with high levels of collaboration. Natural resources are highly valued.
Outer suburb	Infrastructural projects increase exponentially to build connectivity and mobility.	Highly connected communities, where there is a strong group and family orientation.	Mobility systems allow for on-demand access to inner city and peri-urban zones.
Peri-urban and beyond	Dominated by the heavier industries and a prevalence of automatised resource and food production.	Declining population levels, as the production facilities are serviced remotely from urban zones.	Natural landscapes dominate the environment beyond the city fringe, acting as environmental buffer.

2020 HEADLINE NEWS:
 “Local city food production plan adapted”

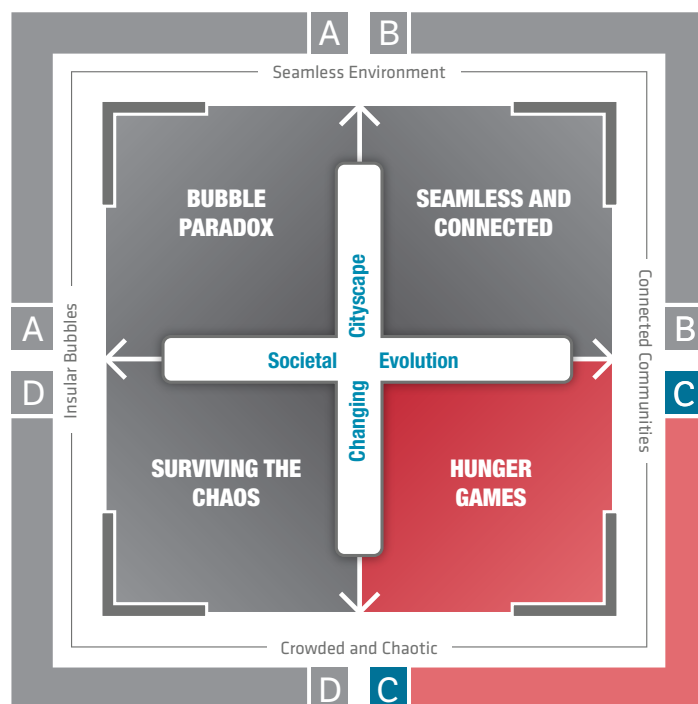
2030 HEADLINE NEWS:
 “Over half of cities no longer allow personal vehicles”

2040 HEADLINE NEWS:
 “Communities take the lead - New clean air record reached!”



4.3 SCENARIO C: HUNGER GAMES

This scenario forecasts a future where there exists a terrible dichotomy between the inner-city and the outer ring suburbs resulting in a severely divided social fabric. The inner city is one of the most wonderful places to live; empowered by government to live as people wish, connected, with an armed police force and automated services removing the need to commute. The attitude of the inner-city person is that the outer suburbs threaten the inner city and those who come in are tormented. People from all over the world have migrated to the region because they have heard how good life is in the city, but economic disparities prevent less wealthy from accessing inner city life. Poverty and chaos reign in the outer suburbs causing an 'us vs. them' perspective. Political unrest and distrust towards government grows in the outer suburbs and infrastructure and services are strained by the masses of people who live there. The peri-urban area is where all production, farming and warehousing occurs, but people pass through this ring to get away from the harsh effects of global warming.



The Hunger Games scenario paints a future where competition for resources dominates population behaviour. There is a divergence between the 'haves' and 'have-nots', and this is further exacerbated by the impacts of climate change.





This future sees the outer reaches of the city struggling with management of resources and servicing growing populations. Poverty is exported to the suburbs, and there is a massive divergence in the quality of life and experiences for people.

SCENARIO C CHARACTERISTICS: HUNGER GAMES - 2040

These characteristics reflect a challenging view of the future. There is an inherent tension between the attempts to create community connectivity, while at the same time dealing with a crowded and chaotic cityscape. This creates a “hit and miss” world, where there are pockets of utopian experience within a larger city of intense resource competition.

City Zone	Economy and Industry	Community and Society	Cityscape and Environment
Inner city	Inner city economy is thriving, as it holds headquarters of corporate operations, and has a strong local internal economy.	Highly protected inner-city core, that is technologically orientated. People are connected by shared purpose. This is the home of the wealthy and technically literate people.	Access to inner city is restricted and there is no easy commuting pattern in or out. Environment is highly controlled, creating mini-biosphere.
First-ring suburb	Attractive to business as offers a lower cost of living than inner city. Focus on self-sustaining economy with abundant professional and technical services.	Community focusses on neighbourhood, where there are strong connected communities, and family focused community amenities. Safety and security are a primary concern.	Technology has led to fewer cars in this zone, freeing up resources for more public and community spaces. Urban self-sufficiency is achieved through local gardens and resource capture.
Outer suburb	This city zone becomes very crowded but offers low economic opportunities; poverty is exported to the suburbs.	Society becomes chaotic – with services unable to cope with demands. There are frequent water and resource shortages.	Population increases, driving greater density. Infill occurs in old suburbs, and more families occupy smaller housing units.
Peri-urban and beyond	Dominated by logistics and storage facilities. Resource production areas are heavily guarded and remotely controlled.	Scarce populations located in small enclaves, connected to large industrial facilities. Human presence is focused on protection functions.	Environmental quality declines as waste and materials from the outer suburban ring overwhelms processing facilities.

2020 HEADLINE NEWS:

“Large numbers of new citizens arrive following catastrophic climate events”



2030 HEADLINE NEWS:

“Inner City and First-ring suburbs become car free”



2040 HEADLINE NEWS:

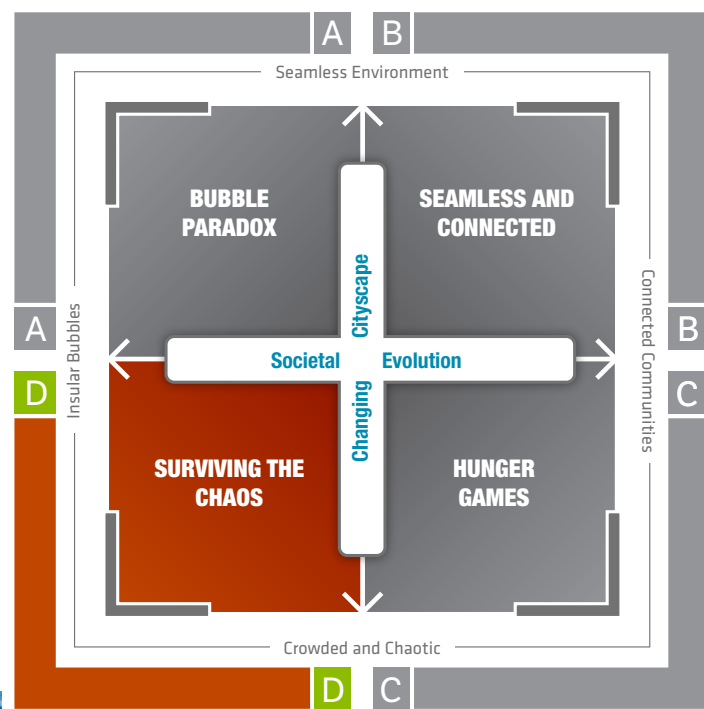
“Resource crisis – Water in outer suburbs declared unfit to drink”





4.6 SCENARIO D: SURVIVING THE CHAOS

This scenario forecasts a future characterised by the failure of benevolent governance. The inner cityscape is characterised by densification, vertical building and people retreating to gated communities boasting hierarchical advantage. The social fabric of the region has deteriorated to self-interested bubbles that exist in a chaotic environment. Urbanisation of the suburbs occurs at a rapid rate and populations flock there to enjoy common services and amenities. Suburban governments are overwhelmed by the demands on services and infrastructure and tension between communities grows. Those in the peri-urban and beyond are ageing and exist in different states of stability, spending great efforts to defend their way of life separate from the city and suburbs. Dwindling opportunity in the rural areas forces youth to move towards the inner city leaving an inadequate workforce to keep rural communities alive.



The human experience is sub-optimal in the scenario 'Surviving the Chaos'. The breakdown of overall citywide systems drives people into competing bubbles, based around needs of protection and resources. Movement becomes more restricted.



This future sees significant negative challenge to human experience. The societal systems are overwhelmed and break down, resulting in self-managed groups that compete for resources. Life becomes more of a daily struggle for survival.

SCENARIO D CHARACTERISTICS: SURVIVING THE CHAOS - 2040

The characteristics of this future scenario paint a picture of a city struggling to cope with the rate of change. Society retreats into insular bubbles, largely based on resources security and protection. Movement across the city is difficult due to the strains on overwhelmed transportation systems.

City Zone	Economy and Industry	Community and Society	Cityscape and Environment
Inner city	The inner city is a mixture of wealthy enclaves and underclass. Wealth is protected, and overall economic prosperity of the whole city declines. Homelessness increases.	There is less overall community interaction. Shared public space is only functional (mobility, delivery), and there are more 'members only' access facilities.	There is a focus on more self-sufficient systems and buildings, that are self-contained in terms of resource production. Gated buildings dominate the cityscape.
First-ring suburb	There is an urbanisation of suburbs, as smaller scale inner city hubs form, serving the local suburban bubble. Self-sufficiency and specialisation of services becomes a key focus.	There are growing tensions between the local bubbles, as they create protective restrictions to movement. People want to move here from inner city and outer suburbs.	This city zone focusses on creating bubbles of protection from the surrounding chaos. Local energy and transportation systems create some independence.
Outer suburb	Mainly a residential economy. Some 'bubbles' of industry develop, especially transportation and logistics due to close proximity to first-ring population.	Mobility is difficult as public transportation systems have largely broken down. This creates tensions on the borders with the peri-urban and first ring suburbs.	There is a lack of environmental investment, and public green space is lost. People move here as they are displaced from other city zones.
Peri-urban and beyond	Employment is based on resource recycling and materials salvaging. This zone remains a significant resource producing area, with food and materials dominating.	There is strong defense of their safe-haven bubbles, outside the urban chaos. People work from home or in resource industries.	Overall there is strain on resources and old infrastructure. Food, water, and energy are in demand from city zones.

2020 HEADLINE NEWS:

"Yellow Jacket interventions increase"



2030 HEADLINE NEWS:

"Justin Bieber plays concert for 'Farewell to Hyde Park'"



2040 HEADLINE NEWS:

"Crowd funding the rural defence ring"

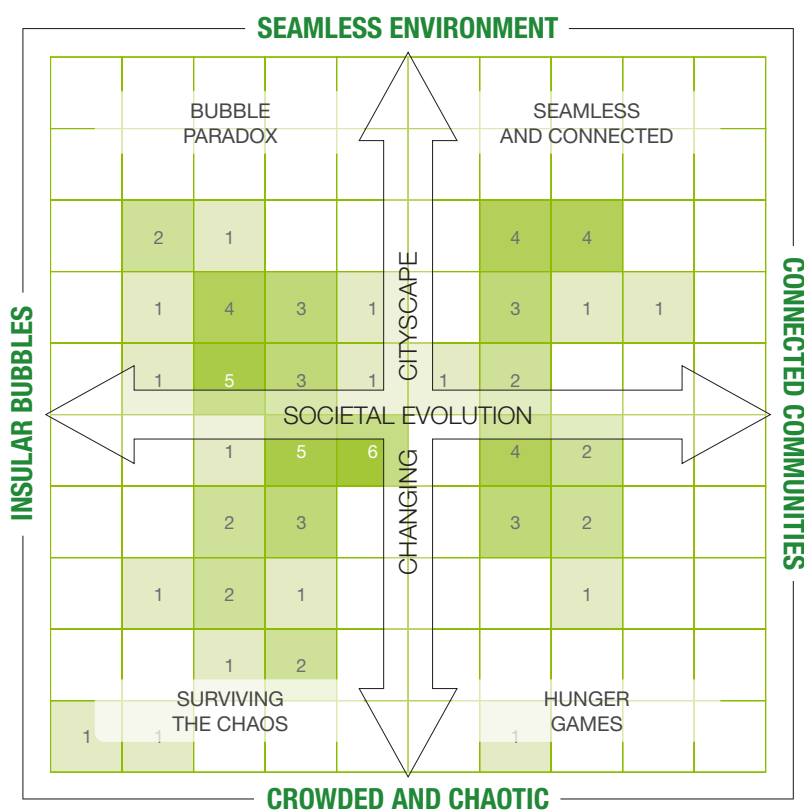




Consultation participants showed a spread of views about the expected future of urban living in 2040. There is a slight emphasis on the likelihood of emergence of insular bubbles.

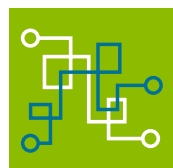
5.0 EXPECTED AND PREFERRED FUTURES

5.1 EXPECTED FUTURE



The Future of Urban Living Consultation, December 13-14, 2018

The expected future is the one deemed most likely to happen if there is no change in the current trajectory of urban living. Consultation participants did not have any one scenario they believed most represented the current direction of urban living. This marked split on how the future is expected to unfold was discussed amongst participants and it was agreed that the expected future was dependent on a myriad of constantly changing factors. Most specifically, participants cited the importance of technological accelerations and governments' ability to maintain control of growing bodies of data as critical to the debate.



FutureInsight

FUTURE INSIGHTS:

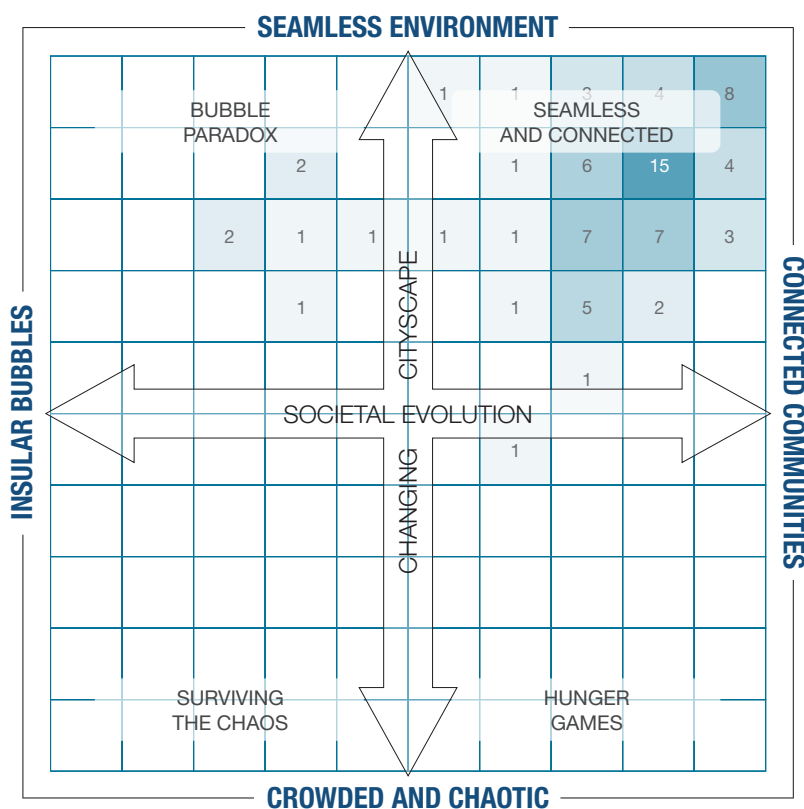
- Consultation participants agreed that all expected future scenarios involved the increase of humans living in 'bubbles' of commonality.
- Consultation participants agreed that all expected futures will be required to deal with the effects of climate change, and that the decisions made within each scenario's trajectory would determine the planet's ability to support life as we know it.





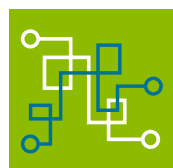
Strong coordinated and ethical democratic governmental decision making will be critical in the success of the preferred future for urban living

5.2 PREFERRED FUTURE



The Future of Urban Living Consultation, December 13-14, 2018

The Preferred Future is the one people believed would deliver the most optimal outcome across the city environments. While all the scenarios were viewed as plausible, consultation participants expressed a strong preference for Scenario B, "Seamless and Connected". The views were strongly concentrated in the upper right corner, suggesting a high level of appetite and preference for a future that drive along the directions towards 'Seamless Environment' and 'Connected Communities'.



FutureInsight

FUTURE INSIGHTS:

- The tight concentration of colour in Scenario B, 'Seamless and Connected' indicates a close alignment of thinking by consultation participants around the preferred future.
- Consultation participants proposed that the preferred future may require a new form of centralised democratic government that involves the introduction of machine controls and stops.

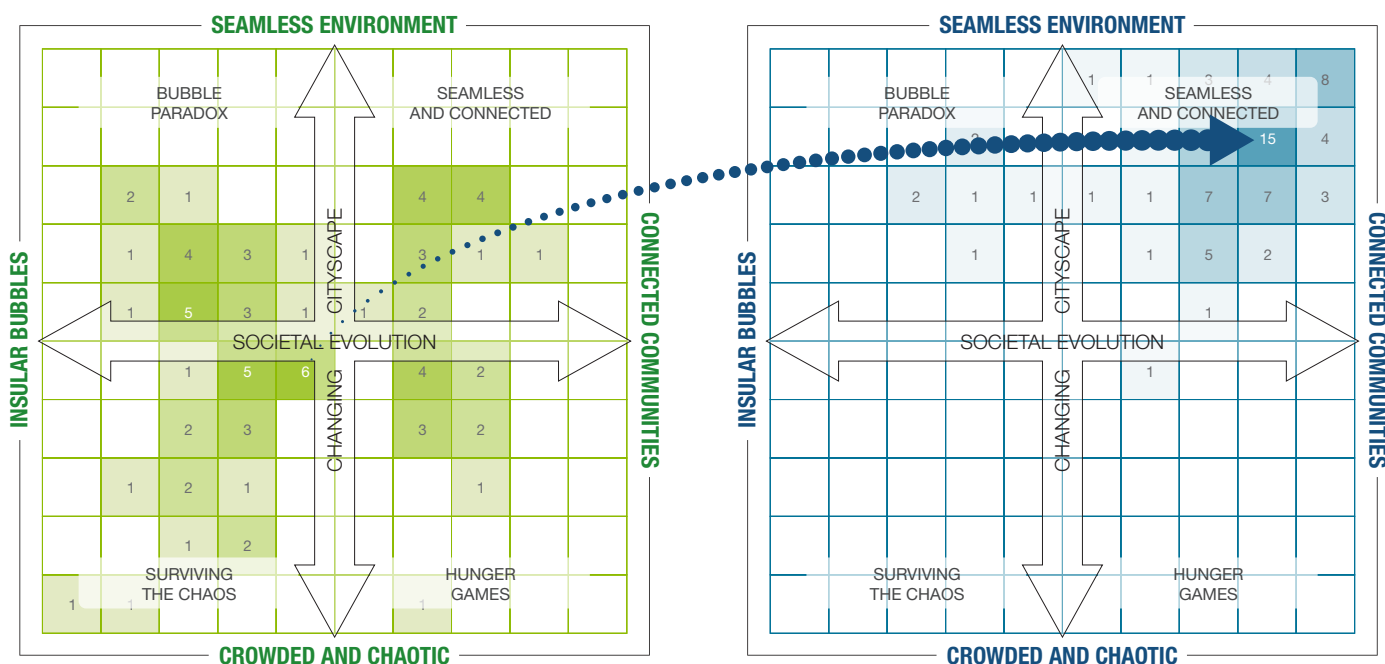




How cities can navigate a path from the 'expected' to the 'preferred' future is a complex topic. It will require innovation and original approaches at both the societal and cityscape levels. A key lesson from the consultation is that change and adaptation needs to happen quickly.

5.3 CLOSING THE GAP – GETTING TO THE PREFERRED FUTURE

Consultation participants discussed the ramifications and implications of failing to achieve the preferred future. There was strong alignment among participants that Scenario B, 'Seamless and Connected' represented the preferred future scenario for the future of urban living.



The Future of Urban Living Consultation, December 13-14, 2018

It was recognised that in order to move towards the preferred future, certain actions must be taken quickly to change direction on critical global issues such as climate change and the effects of globalisation. The importance of technology and its potential to transform both society and the cityscape was considered the critical driver of change. Participants discussed the importance of strategy and coordination by strong governments in democratic society as key to the success of this scenario. The potential for abuse of power, particularly in the area of data control was also discussed and determined that abuse could be avoided by requiring a high level of transparency and ethical decision-making.



DataInsight

FUTURE INSIGHTS:

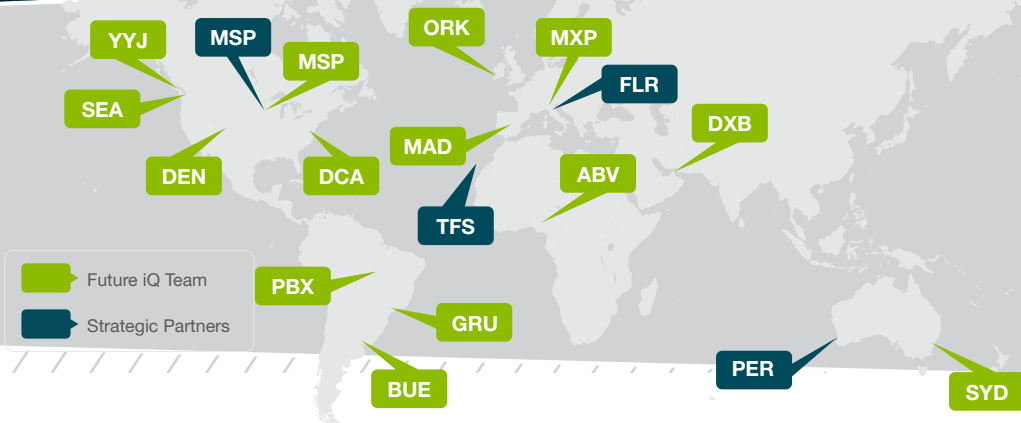
- Migration and immigration were cited by consultation participants as critical human and economic issues to be resolved in the process of moving from the expected to preferred future of urban living.
- Coordinated governmental strategies on a regional basis will enable cities and their surrounding areas to move from the expected to preferred future for urban living.



6.0 CONSULTATION PARTICIPANTS

The consultation participants were invited to attend due to their expertise across a range of topic areas. Taken together, the group represents a unique gathering of perspectives and experience from across different geographies, sectors and subject areas. The participants all contributed generously to the discussions during the consultation. This report represents their collective insights.

George Atalla	Partner, Global Sector Leader – Government and Public Sector, Ernst and Young
James Bernard	Head of Corporate Sales, DMCC, Dubai
Celine Beurle	COO, Future iQ
David Beurle	CEO, Future iQ
Heather Branigin	Vice President, Foresight Research, Future iQ
Dan Burden	Director of Innovation and Inspiration, Blue Zones LLC
Dr. Igor Calzada	Lecturer, Research Fellow and Policy Advisor, University of Oxford
Jordi William Carnes	Former Deputy Mayor, Barcelona
TC Chatterjee	CEO, Griffith Foods Inc.
Russell Dalglish	Managing Partner, Exolta Capital Partners and Scottish Business Network
Carole Feld	Future iQ Representative, Washington DC
Henry Gordon-Smith	Founder and Managing Director, Agritecture Consulting
Stephan Herbst	Technical General Manager Hydrogen, Toyota Motor Europe
Paul Lindop	Founder SmartRural Coop
Josephine Yilan Liu	Founding Partner, Urban Future Global Conference
Valerie Mertens	Attache Press and Communication for Pascal Smet, Minister of the Government of the Brussels-Capital Region
Juliana Panetta	Real Estate Attorney, Briggs and Morgan, P.A
Marc Rassel	Creative Director, Future iQ
Jack Robbins	Principal, Director of Urban Design, FXCollaborative Architects
Prof. David Satterthwaite	Professor, International Institute for Environment and Development (IIED) and University College London
Pascal Smet	Minister for the Government of the Brussels – Capital Region, Responsible for Mobility and Public Works
Maria Vassilakou	Deputy Mayor of Vienna



7.0 ABOUT FUTURE IQ

Future iQ specialises in applying innovative tools and approaches to assist cities, organisations, regions and industries shape their economic and community futures. With nearly two decades of experience, the company has a global clientele spanning three continents. To learn more about Future iQ, and our recent projects [visit www.future-iq.com](http://www.future-iq.com) or by email at info@future-iq.com

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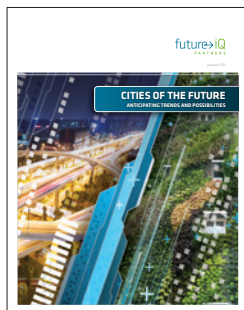


Marc Rassel

Creative Director

To learn about other Future iQ projects and foresight research visit:

<https://future-iq.com/featured-projects/>



Cities of the Future
2015



The Future of Food
2016



The Future of Manufacturing
2016



The Next Industrial Revolution
2018



Future of Tourism
2018

8.0 REFERENCES / RESOURCES

Section 3.1 Macro Drivers Shaping the Future of Urban Living

1. United Nations, 2018 Revision of World Urbanization Prospects.
2. United Nations, World Population Prospects: The 2017 Revision.

Section 3.1.1 Future City Lifestyles

3. Advanced Technologies Initiative: Manufacturing and Innovation, Deloitte and Council on Competitiveness, 2015.
4. The Next Industrial Revolution: A New Era-Robotics, Automation and Life Sciences, Future iQ, November 2017.
5. World Economic Forum, The Future of Jobs Report 2018, Switzerland, 2018.
6. The rise of the social enterprise, 2018 Deloitte Global Human Capital Trends, 2018.
7. Mark Muro, Robert Maxim, and Jacob Whiton, Automation and Artificial Intelligence: How machines are affecting people and places, Metropolitan Policy Program at Brookings, January 2019.
8. Gartner, Top Strategic Predictions for 2017 and Beyond: Surviving the Storm Winds of Digital Disruption, October 2016.
9. Erik Brynjolfsson and Andrew McAfee, The second machine age: Work, progress, and prosperity in a time of brilliant technologies, W.W. Norton & Company, 2014.

Section 3.1.2 Social Fabric and Structure

10. McKinsey Global Institute, Urban World: Meeting the Demographic Challenge, October 2016.
11. Deloitte University Leadership Center for Inclusion, The Radical Transformation of Diversity and Inclusion: The Millennial Influence, 2015.
12. Nish Parikh, Diversity and Inclusion Matters to The Workforce of the Future, Forbes, May 2018.
13. Deloitte and The Alliance for Board Diversity, Missing Pieces Report: The 2016 Board Diversity Census of Women and Minorities on Fortune 500 Boards, 2017.

Section 3.1.3 Distribution of Power and Influence

14. Embracing Innovation in Government: Global Trends 2018, World Government Summit and OECD, 2018.
15. The upside of disruption: Megatrends shaping 2016 and beyond, EYGM Limited, 2017.
16. Global Trends: Paradox of Progress, National Intelligence Council, January 2017.
17. Richard Florida, "The Amazing Endurance of Slums." The Atlantic CityLab, 23 January 2014.

Section 3.1.4 Demographic Distribution

18. Urban World: Meeting the Demographic Challenge, McKinsey Global Institute, October 2016.
19. Aging and Urbanization: Principles for Creating Sustainable, Growth-Oriented and Age-Friendly Cities, McGraw Hill Financial Global Institute, January 2016.
20. United Nations World Population Prospects: The 2017 Revision, Department of Economic and Social Affairs Population Division, 2017.
21. Ageing and Health Fact Sheet, World Health Organization, 2015.

Section 3.2.1 Built Environment

22. Jason Beske, AICP, Saving our Suburbs: How to Create Successful Suburbs, Webinar, 2018, <https://islandpress.org/videos/webinar-saving-our-suburbs-part-1>.
23. Abraham Goldberg, Kevin Leyden, and Thomas Scotto. Untangling What Makes Cities Livable: Happiness in Five Cities, September 2012.
24. The Livability Economy: People, Places, and Prosperity, AARP, July 2015.
25. 21 Statistics About Remote Work Trends in 2018, Skip the Drive, September 2018, <https://www.skipthedrive.com/21-statistics-about-remote-work-trends-in-2018/>

Section 3.2.2 Movement and Mobility

26. John Maoavenzadeh and Scott Corwin. Designing a Seamless Mobility System (SIMSystem): A Manifesto for Transforming Passenger and Goods Mobility, World Economic Forum in Collaboration with Deloitte, White Paper, 2018.
27. An Integrated Perspective on the Future of Mobility Part 3: Setting the Direction Toward Seamless Mobility, McKinsey Center for Future Mobility, McKinsey & Co., January 2019.
28. Transport, The World Bank, <http://www.worldbank.org/en/topic/transport/overview>, September 2018.
29. An Integrated Perspective on the Future of Mobility Part 3: Setting the Direction Toward Seamless Mobility, McKinsey Center for Future Mobility, McKinsey & Co., January 2019.

Section 3.2.3 Application of Technology

30. Cyber Physical Systems Security, U.S. Department of Homeland Security, <https://www.dhs.gov/science-and-technology/csd-cpssec>
31. Smart Cities: Digital Solutions for a More Livable Future, McKinsey Global Institute, June 2018.
32. Thomas Poppensieker, Wolf Richter, Rolf Riemenschnitter, and Gunbert Scherf. Digital and Risk: A new posture for cyberrisk in a networked world, McKinsey and Company, March 2018.
33. Thomas Fehling and Tomas Hohenacker. Smart City parking Solutions: From Germany to the Middle East, Meeting of the Minds, Clevercity Systems, Presentation, 24 October 2018.
34. Howard Elias, The time for cities to get smart is now, World Economic Forum, January 2019.

Section 3.2.4 Resource Cycle

35. The Weight of Cities: Resource Requirements of Future Urbanization, UN Environment, 2018.
36. Smart Cities: Digital Solutions for a More Livable Future, McKinsey Global Institute, June 2018.
37. Anna Read, Gulafshan Ghori, and Will Fricke. Smart Communities: Rethinking Infrastructure, ICMA, October 2017.
38. The Weight of Cities: Resource Requirements of Future Urbanization, UN Environment, 2018.

Section 3.3 Overarching Global Trends Shaping the Future

39. United Nations, 2018 Revision of World Urbanization Prospects.
40. McKinsey Global Institute, Urban World: Meeting the Demographic Challenge, October 2016.



