Aspirational City Futures:

Three Models for City Living

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CONTENTS

1.0 INTRODUCTION

Having commissioned working papers and other material to provide an evidence base, the Foresight Future of Cities project looks at the opportunities and challenges UK cities could face over the next 50 years. The breadth of approach and its outputs distinguish the project from other initiatives exploring the challenges facing UK cities and include: the articulation of desired outcomes (visions from individuals, sectors, and cities); identification of pathways enabling desired outcomes; exploration of implications and potential impact; and identification of risks and opportunities. Where done collaboratively, futures-based work also builds relationships and facilitates learning that supports capabilities for long-term planning.

At the University of Birmingham (UB), we have started work on a three-phase project to help understand the future and consider how to enable different visions. The first phase is divided into three sections and forms the foundation for this work and explores how scenarios might be created and used by cities to help create policies and strategies to meet their own future city visions. This phase is divided into three sections and this report focuses on Phase 1b.

Phase 1a (May to June 2015) has been completed and builds on an extensive monograph produced by the *Urban Futures* project team (appended in Lombardi et al., 2012). This contains a critical review of 'aspirational' scenario approaches, methodologies and toolkits reported within the literature with the aim of identifying consistency in the various approaches along with a commentary on their usefulness and the skill levels needed to apply them, considering three broad categories of user:

(a) citizens

(b) practitioners

(c) practitioners and/or academics well-versed in the topic area

Phase 1b (July to August 2015) relates to **testing the hypothesis of clustering aspirations**. This work draws on the UB *Policy Commission on Future Urban Living* datasets utilising evidence taken from a wide range of leading thinkers on cities from the UK and elsewhere.

The report suggests that three models can be created based upon the evidence found. These are
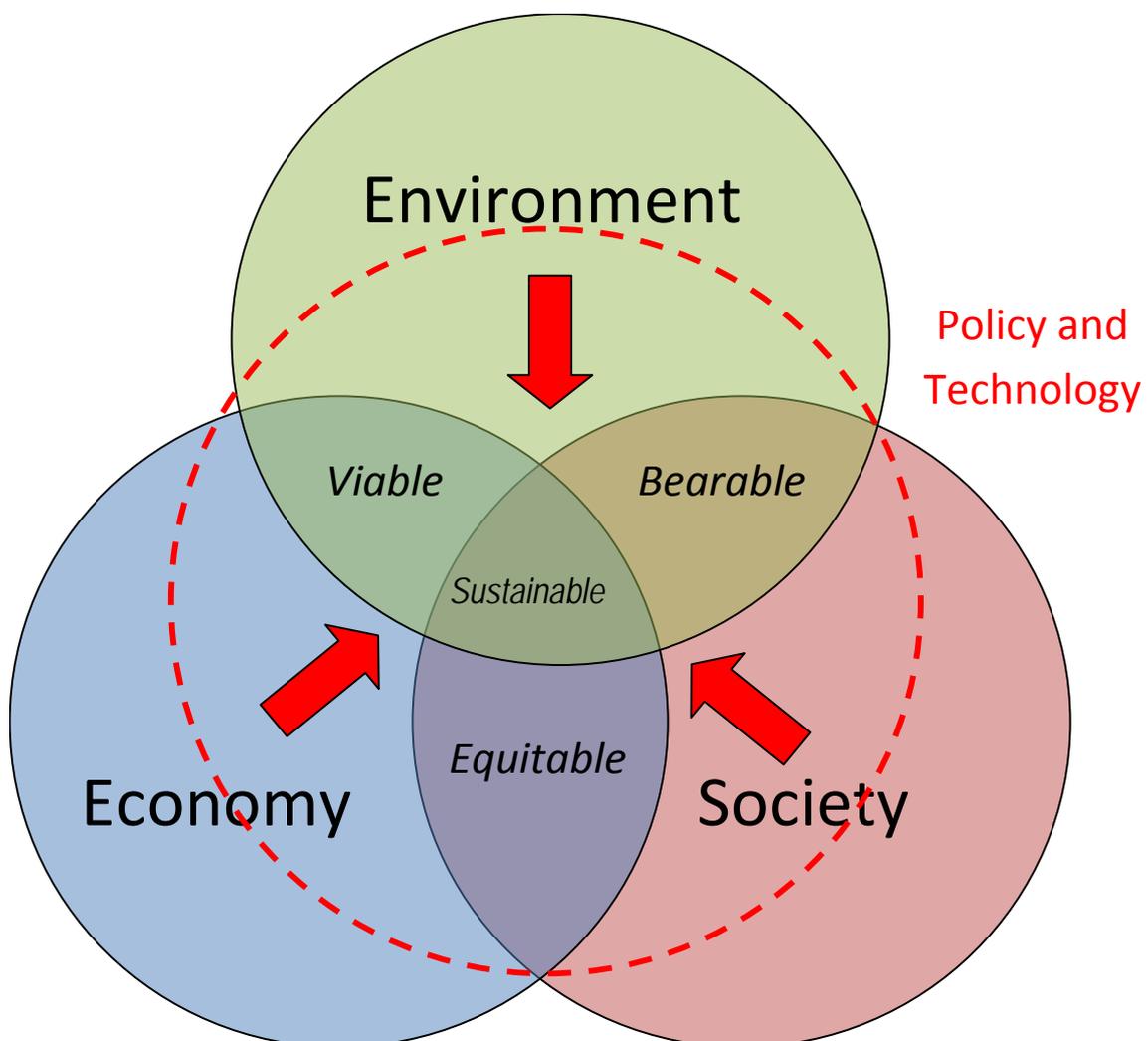
- Model 1: Work and Economy (Section 2.1)
- Model 2: Environment and Resources (Section 2.2)
- Model 3: People and Community (Section 2.3)

For each model a narrative is presented, based on clustered evidence according to seven key themes used within UB *Policy Commission on Future Urban Living* (2014). These are: (1) Natural Environment; (2) Natural Resources; (3) Accessibility and Movement; (4) Resilience Adaptation and Smart Technologies; (5) Financing and Alternative Business Models; (6) Governance; and (7) Cities and City Regions, and the Role of Planning.

2.0 THREE MODELS FOR CITY LIVING

Figure 1 represents what might be considered the traditionalist *'aspirational'* approach to sustainability whereby each pillar on the 'sustainability stool' is treated with equal weighting. The overarching driver is sustainability and therefore each pillar in theory is being pulled with equal force toward the centre of the overlapping circles – an ethos of moving cities toward a more sustainable future. They appear as an interwoven structure that must balance aspects of city living requirements (and any change proposed therein) in order that they be sustainable – in other words viable, bearable and equitable in equal measures. Policy and Technology (two other key drivers of change within a city) are influential to this process. This model, whether tacitly or explicitly, sits behind many city visions, regardless of the views of individuals as to where the balance should lie.

This research now looks at what might happen to the city vision if a single pillar were prioritised to explore, explicitly, how the balance would be distorted. These are referred to as Model 1 – Work and Economy, Model 2 – Environment and Resources, and Model 3 – People and Communities.

Figure 1: Cities in the context of 'Sustainability' being prioritised

2.1. MODEL 1: Work and Economy

Figure 2 represents what might happen to the sustainability model when work and economy is prioritised as the driving force for change. It is not inappropriate to assume that the previous model becomes distorted and that a natural hierarchy emerges. In essence a priority weighting is given to Work and the Economy and a lesser weighting is given to People and Communities and Environment and Resources (assumed here to have equal weighting to each other). As the figure shows there may, as a result of this change, be a direct tension between equity and viability and much less consideration for whether city living is bearable. In addition it might be suggested that Policy and Technology are also geared toward the overarching driver. To better understand a city where the economy is prioritised it is useful to gain a more tangible understanding of what characteristics underpin this city vision and the related metrics that are considered important therein (Box 1). The following narrative, based on clustered evidence according to the seven key themes used within the UB *Policy Commission on Future Urban Living* Report, shows what this vision might look like.

Natural Environment: There is little recognition of the ways in which privately-owned green spaces could provide ecosystem services and hence the natural environment is only really valued when it can be accounted for in hard monetary terms. Where accounting exists it does not take into account hidden costs (or externalities), therefore polluting or otherwise compromising the environmental commons is poorly policed and all too readily overlooked. Where green spaces exist in the city they privilege the outside. Those who can afford it do not see the city as fit for all life-stages and escape to the countryside in preference to a costly alternative of 'naturalising the city'. Green belt is readily used to meet the housing requirement (the economic case outweighs the social and environmental cases) and development and planning structures operate at a national level to avoid stagnation. Confusion ensues as to why (or how) natural resources flows should be considered, taking a more localised approach to favour security of supply.

Natural resources: The drivers for beneficial changes (i.e. decarbonisation and diversification of supplies) stems only from the need to ensure continuity of supply of energy as cheaply as possible. Necessities for life (i.e. water and food) are taken for granted and considered to be provided for from elsewhere unless local market opportunities exist, in which cases they are encouraged. The long-term ability to source raw materials is quite simply off the radar and accompanied by prolific false accounting of natural resource use (i.e. externalities are typically ignored). This is accompanied by a city population that conspicuously consumes far more than the planet can provide, yet this is much less of a concern than heretofore. Whilst water metering exists (adopted to maximise economic gains), in some cases this has negatively impacted on fuel poverty. Technologies, rather than a step change in use-behaviour, are seen as solutions to carbon reduction and enterprises in this sphere are encouraged. City strategies more readily consider adaptation to (rather than mitigation for) climate change and embrace changes in the urban fabric to achieve this. Whilst 'sustainable lifestyles' do exist, they are only attainable to those who can afford them – as such there is little concern or regard for social polarisation or social exclusion due to prohibitive costs.

ENVIRONMENT AND RESOURCES

PEOPLE AND COMMUNITIES

WORK AND ECONOMY

A super-connected world in which the economy, trade and the world of work is prioritised

Figure 2: Cities in the context of 'Work and Economy' is prioritised

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BOX 1: WORK AND ECONOMY

EXAMPLE CHARACTERISTICS:

A super-connected world in which the economy, trade and the world of work is prioritised.

TYPICAL INDICATORS:

- **GDP (in combination with happiness)**
- **Unemployment / employment levels**
- **real estate prices / rent**
- **the number of city-projects / pilot projects that receive funding**
- **national average economic output (across all UK cities)**
- **financial self-sufficiency (of the city)**
- **job growth and opportunities**

Accessibility and Movement: A city that prioritises economy and work will undoubtedly prioritise accessibility and movement and would strive to create a more effective transport system. Considering the fact that economic growth has seen a legacy of problems spawned from increased ownership of motor vehicles, its role cannot be ignored within this vision. Thus a consensus for managing current car use, yet solely to maximise flow efficiency while prioritising business use and parking, is embraced and a range of optimally-configured alternatives is provided – the key driver being increased urbanisation for those working within the city.

It is recognised that growth in the workforce and economy will demand greater future mobility in this vision, and this need will influence both housing plans and siting of places of work. Low-density housing in suburb commuter belts might not correspond with this planning priority, for example. Large transport providers do not see walkers and cyclists as key stakeholders within the city. Any radical changes to infrastructure are only generally justified in economic terms, and changes to this paradigm are only noticed where citizens and society bring pressure for bottom-up change.

Resilience, Adaptation and Smart Technologies: In this city vision it is acknowledged that successful cities in terms of their economy and resilience must operate at a scale large enough to allow for not only jobs, but also a sequence of jobs that satisfy citizens through their lives. These cities have high concentrations of skilled workers and a good concentration of transport links to allow for connectivity (a positive enabler of business activity) to other pools of workers and other areas of economic activity. In this context the economic risks of increased transport congestion are not ignored. Virtual connectivity, e.g. via high-speed broadband, is also prioritised.

Whilst some schools of thought within this vision can see an economic and employment advantage in a city moving towards (and being driven by) a low carbon economy, others hold a strong belief that when economy and employment are put first (i.e. Figure 2 pulled in reverse) this better helps tackle the problems of climate change, urban growth, demographic shifts and resource use. What resonates most strongly in this vision is that building stock improvements are required in addition to technological fixes, although the case for buildings to be 'smart' is unclear. The economic imperative here might be for less reliance on bankrolling of technological development and rather a requirement for innovative ways to finance and/or produce alternative business models (see below).

 Financing and Alternative Business Models:

In this vision, there is less regulation of economic activity by central government. The removal of complex financing and approval processes provide more room for cities to experiment. Changes to public funding mean local authorities have less longer-term certainty over their income sources, but can retain more benefits of economic growth and prosperity, and create policies that accord with this aspiration.

Governance: Within this vision cities are acknowledged as being a key economic driver. Attention is given to avoiding a narrowing remit for planners and allowing for innovative changes to be made to local government to increase its financial stability. This might be achieved, in part, through bringing about less constraint in its ability to raise capital combined with an ability to exert increased control over its income (see above). Enabling a greater focus on long-term planning in this way allows investment within an ageing (therefore economically intensive) infrastructure system which is so intimately linked to economic stability. In this context, cities are incentivised to work with big

corporations who invest economically in cities, the economic benefits arising from which accrue over time, not least in terms of taxes paid (and in part retained by the city). This requires the ability to work strategically within and beyond local government boundaries with a range of stakeholders.

Cities and City Regions, and the Role of Planning: In this city vision planners are proactive, rather than defensive and reactive, influencing the location of new development to promote economic opportunities. Cities seek not to be constrained by their own administrative boundaries and thus better integration of planning, economic development and transportation occurs. Community consultation is perceived as costly and potentially counter-productive to the culture of enterprise, irrespective of the longer-term savings which may result.

2.2. MODEL 2: Environment and Resources

Figure 3 represents what might happen to the sustainability model when Environment and Resources are prioritised as the driving force for change. As before, the original model becomes distorted and a different hierarchy emerges in which priority weighting is given to Environment and Resources, while (far) less weighting is given to People and Communities and Work and Economy (assumed here to have equal weighting to each other). As the figure shows, this might lead to a direct tension between whether city options are bearable and viable, while much less consideration is given to whether city living is equitable. As above, Policy and Technology will be geared towards the overarching driver. To better understand a city in which the Environment and Resources are prioritised, an idea of the characteristics that underpin this city vision and the related metrics that are considered important are presented in Box 2. The following narrative, based on clustered evidence according to the seven key themes used within UB *Policy Commission on Future Urban Living* Report, shows what this vision might look like.

Natural Environment: There is a common thread to this city vision whereby there is an integral process of 'learning from nature' through concepts such as biomimicry, the biophilic city, the ecopolis and the circular economy / urban metabolism. The city is combined with nature and very much aware of the human interconnectedness that exists. Cradle-to-grave solutions are sought and recognise interdependencies at all scales. Management of local externalities (e.g. smoke from chimneys) is negotiated and regulated locally. Formal green space (in addition to wasteland) is recognised as 'a good' in terms of the provision of ecosystem services to the city and its citizens, both in practical terms (city centre cooling, pollution mitigation) and in less tangible, but no less important, terms such as individual and collective wellbeing and a welcoming sense of place.

Natural Resources: Consuming more resources than the planet can provide is an area of concern for this city vision. An ethos of mitigating for (rather than adapting to) climate change is adopted, hence local action is advocated and encouraged – e.g. minimising energy demand, and maximising renewable energy supplies are seen as important areas for city decarbonisation. There is a general desire to move towards a far greater degree of self-sufficiency for energy, water, food and other consumables, as such there is more attention paid to what can be supplied locally and what has to be sourced from outside the city boundary. In particular far greater attention is paid to food production, processing and distribution streams in order to reduce the historically high ecological footprint. Going underground is considered to be a realistic option for achieving higher densities (and more green space) despite the perception of higher economic costs – when a balanced and comprehensive 'three pillar' costing is done, the benefits are shown to justify the decisions. In short, a 'one planet ethos' that engenders the following prevails:

- energy – reduce demand, diversify supply, local sourcing, district heating;
- waste – reduction, reuse, recycling and diversion from landfill;
- water – control demand, local sourcing and storage, recycling, resilience to flooding; and
- food – reduce ecological footprint.

Much improved water leakage and waste to energy schemes feature strongly within this vision and different authorities work together to achieve solutions – or face the financial penalties that ensue.

An environmentally-aware world, in which the natural environment is valued for what it provides to cities, therein citizens and resources are marshalled to deliver greater resilience by fostering resource security and the avoidance of resource scarcity

Figure 2: Cities in the context of 'Environment and Resources' is prioritised

BOX 2: ENVIRONMENT AND RESOURCES

EXAMPLE CHARACTERISTICS:

An environmentally-aware world, in which the natural environment is valued for what it provides to cities, and citizens and resources are marshalled to deliver greater resilience by fostering resource security and the avoidance of resource scarcity.

TYPICAL INDICATORS:

- **Quality of the physical environment**
- **Resource use**
- **Walkability**

Accessibility and Movement: Reduced vehicle emissions, improved air quality and reduced local congestion are key threads to this vision, in which urban greening, parks, trees and waterways are prominent features linked to ubiquitous networks of walking and cycling that provide connectivity throughout the city. The constraint(s) of the legacy of current urban form is recognised and steps are taken to radically change this. Enhanced public transport systems and limits on city centre, and other urban centres', parking will help to bring about changes beneficial to this vision.

Resilience, Adaptation and Smart Technologies: In this vision the challenges of resilience and adaptation are discussed purely in terms of environmental sustainability, since by implication the benefit will derive directly to future citizens and society, and considered to be of the highest priority for a city. This driver recognises the perceived need for cities to respond to a range of key challenges that are intimately linked to environmental concerns:

- Climate change – rise of sea levels, extreme weather events, temperature rise
- Urban growth – heat island effect, air quality
- Resource availability – e.g. water, energy and food

The city visions make explicit reference to low carbon, resource efficient and 'one planet' living. Smart technologies are embraced as a way of achieving a reduction in general energy consumption as well as resource use. One example of city planning changes concerns putting living spaces close to transit stations, which would expect to have a significant impact on reducing carbon emissions.

Financing and Alternative Business Models: Cities do not necessarily respond to market forces within this vision. This is because financial and business models are strongly influenced by local and mandatory targets (e.g. reduction of greenhouses gas emissions, minimisation of landfill waste) and policies (e.g. greenbelt). Whilst it is widely recognised that profits need to be earned, this cannot be at the risk of not reducing environmental impacts and not meeting environmental targets.

Governance: This city vision seeks to retain city-to-city connectedness (in an environmental capacity) through scales of operation. Models of governance propagate upwards rather than downwards, and much improved internalisation of environmental costs exists.

Cities and City Regions, and the Role of Planning: Local communities collaborate creatively and help shape their urban environment and, whilst balancing environmental interests across urban and rural communities is challenging, it is embraced.

2.3. MODEL 3: People and Communities

Figure 3 represents what might happen to the sustainability model when People and Communities are prioritised as the driving force for change. Once again the original model becomes distorted and a different hierarchy emerges in which priority weighting is given to People and Communities, while less (and equal) weighting is given to Environment and Resources and Work and Economy. In this case the figure indicates that a direct tension might arise between whether city options are bearable and equitable, while city living is viability assumes a lesser importance. Policy and Technology are once more geared toward the overarching driver. The characteristics that underpin this city vision and the important related metrics are outlined in Box 3. The following narrative, based on clustered evidence according to seven key themes used within UB *Policy Commission on Future Urban Living* Report, shows what this vision might look like.

Natural Environment: In this city vision there are strong cultural forces at play and an 'ante-urban English Psyche' exists, preventing radical (in particular behavioural) changes. Whilst incremental changes occur, these have to be publically acceptable. Wasteland is considered to be a negative aspect of the urban environment and there is a drive to activate spaces on abandoned sites. 'Nimbyism' is seen to prevail and the will of the public is adhered to.

Natural Resources: There is a drive to reduce costs and mitigate fuel poverty rather than trying to address environmental concerns. Citizens are more concerned about the effect (e.g. increased energy bills through air conditioning) rather than the course of climate change. Technology and city-based community energy projects such as Combined Heat and Power are considered an enabler for carbon reduction in absence of any behavioural change. Therefore any reduction in fuel consumption is only due to increased competition brought about through peer pressure (i.e. can I use less energy than my neighbour?). Localised food supplies and 'grow your own' are adopted willingly due to the 'quality of life' benefits that ensue. A major concern is the availability of land to allow for this to happen. Compact, multi-centred, socially-mixed, well-designed and connected cities are considered to be resource efficient by those who reside therein.

Accessibility and Movement: City workers show a preference for walking and are acknowledged as key stakeholders. Therefore this city vision provides necessary connected networks to allow ease of movement to key amenities (shops, doctors, schools). These facilities are considered to play a key role in forming sustainable urban neighbourhoods, and therefore increasing density around transport hubs, where well-developed public transport systems have been developed, is embraced. People mobility comes first in this vision, where significant amounts of walking and cycling are seen as an indicator of a good city, not least due to the recognised benefits of improved health and wellbeing.

Public space is a place for opportunity in which the public flourish, and since the city embraces people movement it reduces significantly the space allocated for cars. The city has few through streets for cars and the cyclists (of which there are many) give way to the pedestrians. Policies help make cycling and walking safe, comfortable and accepted as normal. Given that walkers and cyclists are seen as key stakeholders by large transport providers, regional trains, the metro, buses, bicycle parking and pedestrian routes are thought of as one interconnected network that serves people and the community, and the city form (e.g. siting of cafes and retail outlets) adjusts accordingly.

A world in which citizens and communities are mutually supportive and all other aspects of cities are shaped to facilitate this ideal

Figure 3: Cities in the context of 'People and Communities' as a driver

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BOX 3: PEOPLE AND COMMUNITIES

 EXAMPLE CHARACTERISTICS:

A world in which citizens and communities are mutually supportive, and all other aspects of cities are shaped to facilitate this ideal.

TYPICAL INDICATORS:

- **Happiness**
- **Levels of Education**
- **Number of students dropping out of school**
- **Levels of unrest**
- **The number of people walking and cycling**

Resilience, Adaptation and Smart Technologies: This city vision does not wish to repeat the mistakes of the past and is well aware of the risk of introducing high rise flats. The vison centres around a freedom to work and travel, and the ability to work at home is embraced. Smart technologies are seen as a way of achieving a reduction in general energy consumption. In addition this approach is used to inform more readily those who consume, allowing for a step change in user-behaviour to occur. Smart ticketing is adopted as a facilitator of congestion charging, but also as a means of reducing traffic in cities in an equitable manner.

Financing and Alternative Business Models: In this vision cities aspire to be able to raise more of their income from local sources, allowing them to operate autonomously and act on behalf of their citizens. Financial and business models support communities being in control, where the public is central to choices and there is a collective responsibility. Projects that provide long-term benefits and promote greater social equity are supported. As such the planning system considers more readily those who are affected by changes in cities. New measures of success are adopted that lie somewhere between GDP and Gross National Happiness. Finance and business models support home working and are geared towards a sharing-type economy where communities are in control and things are done differently. Herein citizens share commodities facilitated by social media and social enterprise. Innovation is high due to the fact that creative people are co-located and property options cater for these needs.

Governance: Citizens in this city vision have more influence over the production of urban space. Community engagement is embraced and the public are vocal in local planning and now take greater responsibility for what takes place in their area. In addition greater importance is given to the social (rather than economic) returns on investment. This allows for innovation and experimentation to be embraced, not least where this involves changes to lifestyle and behaviour.

Cities and City Regions, and the Role of Planning: Citizen-led initiatives are encouraged and increase community interest and involvement in shaping the urban environment. Pop-up activities are encouraged through planning and individuals are given a greater degree of freedom to design their own homes. The concept of a 'self-made-city' ensues.

3.0. CONCLUDING DISCUSSION

The 'vision clustering exercise' reported above has shown that it is possible to draw three distinctly different visions, with associated narratives, for an aspirational city from datasets collected by UB *Policy Commission on Future Urban Living*. These datasets were compiled when taking evidence from a wide range of leading thinkers on cities, drawn from the UK and elsewhere, on thoughts and lessons for city living. They were provided as a series of ideas that were meant to contribute to and combine into a single, coherent vision – a synthesised vision for an 'aspirational city'. However, deconstructing and clustering the ideas, and prioritising one set above the rest, sheds a new light on the issue since it necessarily raises questions around a city's priorities and makes explicit the consequences of prioritising one vision above another.

The three clustered visions either place work and economy first, people and community first, or environment and resources first, and, crucially for the analysis, they thereby reduce the importance placed on the other two aspects. For convenience, the clustering has been done around the three pillars of sustainability, and it is assumed that technology and policy (the remaining drivers in a STEEP, i.e. Social, Technological, Environmental, Economic and Political, analysis) align with and support the chosen priority. While the choice of clusters is not especially important, an ability to make the clusters distinct is helpful since a strong degree of interdependence between the clusters would reduce the potency of the analysis. Moreover, city visions typically exhibit strongly features of all three 'pillars of sustainability' in what often appears as 'an aspirational wish list', and the individual ideas are relatively easy to assign to one of the pillars.

Having been through the exercise, one is in a position to imagine what a generic city might look like, and feel like. However this is not really the point, since every city has a (historical, cultural, environmental, social, economic) context and every city is in a position to create its own visions for the future in response to this context. What is then possible is to go through the clustering exercise using a particular city's visions and apply the prioritised outcomes of each cluster *to that particular city in its context*. This exercise would 'bring to life' the visions, since each cluster when prioritised would fundamentally change the nature of the city (its form, its functions, its character), largely because of the de-prioritisation of the other clusters and the implications (or consequences) that this entails.

In effect, by taking each cluster as the dominant driver, and providing the attendant narrative that disenfranchises the other two clusters, it provides an *extreme scenario* for that city, since in normal practice a balance is drawn between the three pillars of sustainability. Repeating the exercise for each cluster therefore provides three extreme scenarios for the city – three futures in which living, working and playing will be very distinctly different. It thereby challenges a city to reassess what its priorities are by making explicit what the consequences of introducing these priorities might be. It would equally enable a city to select desirable features, around which it might shape its policies and plans, while avoiding other features, for which it can create avoidance strategies.

The final point to be made is that a successful analysis does not require, or depend upon, a large number of inputs. The evidence base created by the Policy Commission was extensive and very many other features that might contribute to city visions could have been chosen. However by choosing certain key features and working them into a narrative, it very soon becomes apparent

what the implications are of prioritising one feature above others. Once common features start to align, the remaining ideas fall into place and attain a consistency in the narrative.

The primary learning outcomes from the exercise are:
- A city needs to create an agreed vision for the future that embraces all aspects that are important to it. Use of a STEEP analysis as prompts to this visioning process will ensure an appropriate breadth of coverage in the vision. The vision will usually have many elements to it. [One recommendation of the Policy Commission is that citizens should be empowered to contribute to the creation of this vision.]
- Clustering the elements of the city's vision using three distinct categories, such as the three 'pillars of sustainability', brings into sharp focus the synergies between the elements of the vision, and therefore how they might combine to change the nature of the city if they were prioritised at the expense of the other elements of the vision.
- Creating the narrative associated with a prioritised cluster necessarily introduces the consequences of down-playing the other elements of this vision, and contributes to the creation of an 'extreme scenario' (extreme in the sense that there is usually a balance across the pillars).
- Repeating the exercise for each cluster in turn results in three 'extreme future scenarios' for the city in its particular context. The desirable and undesirable features and consequences of each of the scenarios are thus made explicit.
- Policies, strategies and plans can then be created with the aim of bringing about the desirable changes while avoiding the undesirable changes, informed by the consequences.
- Engaging with the process is as important as the outcomes, because of the insights and awareness that it brings to those responsible for shaping the city.

ACKNOWLEDGEMENTS

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