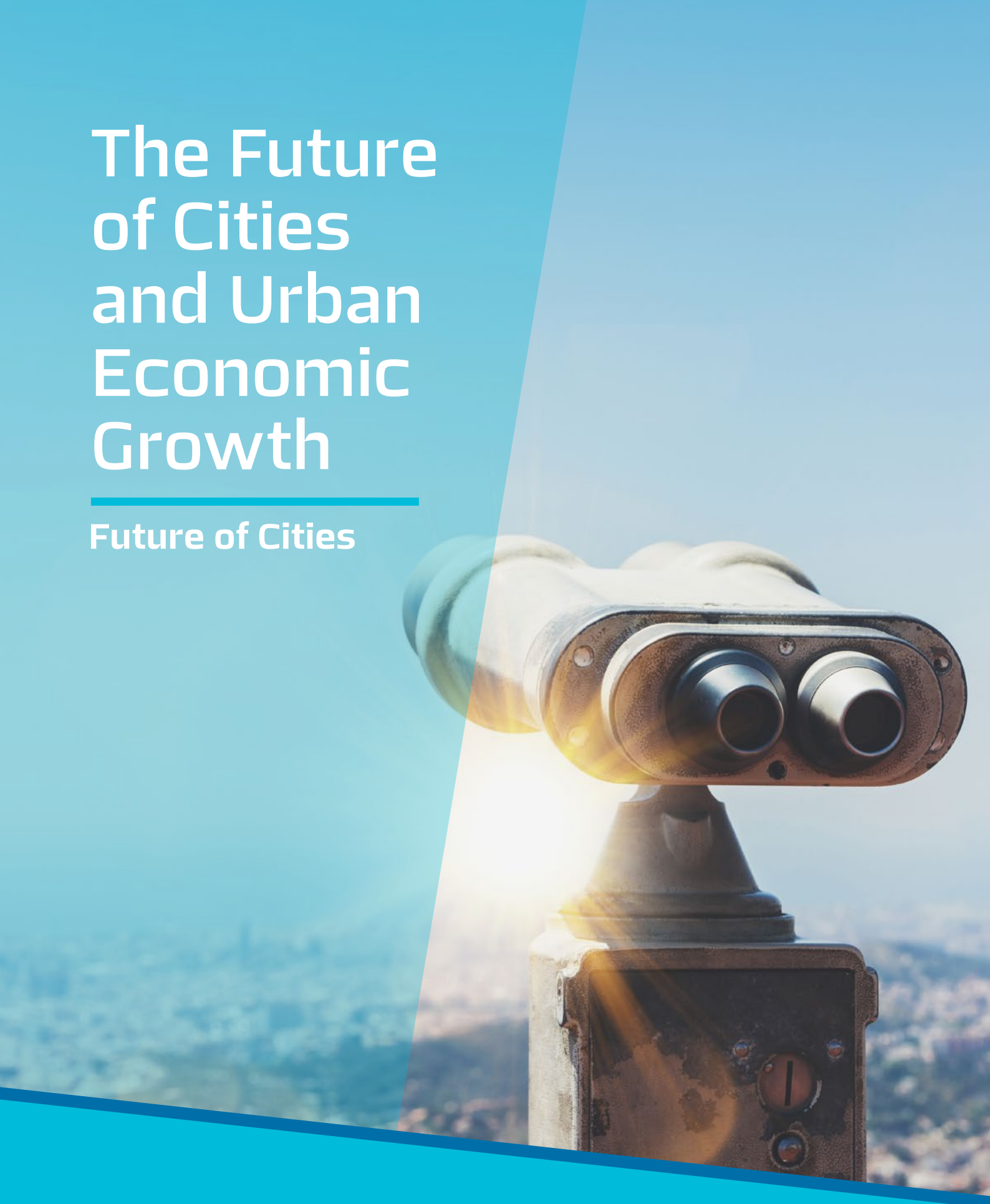
The Future of Cities and Urban Economic Growth

Future of Cities



WORLD GOVERNMENTS SUMMIT 2023

in collaboration with

KPMG

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About World Governments Summit

To Inspire and Enable the Next Generation of Governments

The World Governments Summit is a global platform dedicated to shaping the future of governments worldwide. Each year, the Summit sets the agenda for the next generation of governments with a focus on how they can harness innovation and technology to solve universal challenges facing humanity.

The World Governments Summit is a knowledge exchange center at the intersection of government, futurism, technology, and innovation. It functions as a thought leadership platform and networking hub for policymakers, experts and pioneers in human development.

The Summit is a gateway to the future as it functions as the stage for analysis of future trends, concerns, and opportunities facing humanity. It is also an arena to showcase innovations, best practice, and smart solutions to inspire creativity to tackle these future challenges.


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Foreword

This KPMG paper, the Future of Cities and Urban Economic Growth, is published in collaboration with the World Governments Summit. It aims to provide practical advice for city leaders, administrators, and stakeholders engaged in citizen-centric urban planning geared towards sustainability, resilience, safety, inclusivity, and cultural vibrancy.

It was inspired by questions arising from discussions carried out at the KPMG Centre of Excellence for Infrastructure and Cities (Toronto) and builds on previous reports: KPMG-World Governments Summit papers in the Future of Cities series, Principles for Digital Transformation in Cities (2022) and Perspectives on Government Services, Cities, and Technology (2019).

The findings and recommendations presented are intended to have a long, interactive life; spark debate in panel discussions, workshops, and across media platforms; and take the conversation around these issues to new levels.

Today's context is a daunting one for cities. The hurdles are multiple and often inter-related: relatively high energy costs, inflation and interest rates; a lack of skilled workers; rising inequality in income and social inclusion; and mass migration. Additional, existential threats (climate change, cybersecurity, artificial intelligence (AI), and global or regional conflict) may lead to the perception of 'perma-crisis', a continual state of disruption.

City-specific problems, particularly in the first and third worlds (but less so in emerging countries), include: declining physical infrastructure, homelessness, lack of affordable housing, small business jeopardy, lack of green spaces, and lack of reliable broadband.

The timing is right to face these questions head-on:

- What are the most successful practices for constructing robust urban identities that attract investment and talent?
- How can smart city technologies best be selected, financed, and deployed to serve community interests?
- Which supply chain management approaches ensure optimal security and resiliency to stimulate urban economic growth?
- What working practices are optimal?
- Which forms of finance and incentives are desirable for development?

The report examines ongoing attempts at urban branding and digitalization, using case studies drawn from around the world. It starts by describing city asset-mapping processes that ensure authentic bases for identity building, and ways in which the public can be involved to promote citizen support.

Methods for addressing urban challenges via smart city technologies and innovations are then surveyed and critiqued, followed by consideration of issues around cybersecurity and digital privacy.

Management of customer expectation in supply chain management provides the next focus. The benefits and costs associated with re- and near-shoring (bringing supply chain components closer to markets) are then appraised. We also look at the available means of financing sustainable supply chains and near-shoring.

We demonstrate the importance of balancing employee expectations regarding remote working with the benefits of face-to-face interaction and collaborative working in office and urban settings.

Executive Summary

Learning Through Adversity: Strengthening Cities and Economies

Many governments are rising to substantial global, regional, and local challenges and viewing them as stress tests of current modes of production, transportation, and habitation. Public sector leaders and communities are learning from – and innovating to avoid – current deficiencies in systems for living.

Sustainability, inclusion, resiliency, and a readiness to wrestle with opportunities and threats presented by new technologies are common features of successful city initiatives.

Cultivation of strong municipal identity and pleasant, culturally vibrant environments enhances a city's competitive advantage by attracting business, investment, young talent, and higher-education students. Workers are returning to increasingly livable cities and engaging in face-to-face interaction.

A hyper-localized '15-minute city' concept, containing the necessities for life within easy reach by foot, bike or public transport, has arisen. Chrono-urbanistic theory says the enjoyment of living in a city is inversely proportional to the time spent travelling within it. increasingly livable cities and engaging in face-to-face interaction.

The public versus commercial ownership and deployment of new technologies is best managed with high levels of community access and agency. Digital technologies offer the processing capabilities necessary for analyzing torrents of data generated by 'smart cities'. While enhancing efficiency, their use requires moral and ethical consideration to avoid cyber-security and privacy issues.

'Futures literacy' provides a learning process for adapting to city complexity. A concept developed by UNESCO with students, it directs attitudes towards engagement, empowerment, and resilience. It has prompted productive experimentation around participatory scenario workshops in the context of urban development.

The involvement of younger generations is essential in planning processes and sustainability is becoming hard baked into legislation and business practice. The young are imaginative, digital natives who are the shapers of the future. They have brought sustainability and ethical considerations to the fore, including the desire for a 'circular economy'.

Transparency across supply chains facilitates assessment of supplier ethics. Network synchronization – supplier collaboration and clear communication between supply chain components – fosters resilience against exogenous shocks.

The future is bright. Confidence in the future, inherent in the Arabic expression al-mustaqbal (from to greet, to welcome) is evident in the ready embrace of technology in Gulf cities, particularly those in the United Arab Emirates and Saudi Arabia. These countries are now leading the world in many fields of innovation, which can be adopted by other cities around the world.

"The great draw of cities will continue, because people will still want to be there for all the other human-centered cultural and social benefits that cities provide."[1]

Brooks Rainwater, National League of Cities

Recommendations

1. **Governments must create the right conditions for a unifying city ethos:** a strong city identity (combined with cultural dynamism, creative vibrancy, and communal green spaces) attracts business, tourism, investment, and inventive talent while also encouraging stakeholder/citizen support and affiliation.

2. **Optimize urban assets:** regularly identify, map and mobilize urban assets to optimize resource allocation. More pedestrianized, amenity-rich environments should be provided to draw people back into central areas.

3. **Issues and challenges facing cities should be evaluated, analyzed and appropriate technology selected and applied to resolve them:** for example, sensors mounted on municipal waste disposal vehicles can feed back images of areas of road damage.

4. **Urban visioning/planning processes must be inclusive and participatory:** particularly involving younger generations. 'Futures Literacy' techniques (workshops; impact visualization diagrams; games; prompted essay-writing) can facilitate discussion and analysis.

5. **Public data gathering used to fine-tune smart city functionality should be transparent and accessible:** individuals' rights to privacy should be defended as far as wider cybersecurity considerations allow.

6. **Supply chains should be compact, sustainable, flexible, and resilient.** Cities should reduce reliance on single suppliers by diversifying their supplier base, incentivizing nearshoring, and aiming for self-sufficiency. Governments should help companies evaluate reshoring options and effect supplier base re-establishment.

7. **Organizations should balance the benefits of home working with those of in-person collaboration, to the satisfaction of both employees and employers:** autonomy, flexibility, environmental efficiency, a wider recruitment pool, and saving on office-space, versus heightened cooperation, communal creativity, and positive negotiation outcomes.

Part I: Future of Cities

1. City Identity

What is the identity and outcomes the city wants to achieve?

A city's identity is made up of its unique historical and cultural assets and its distinctive, unifying ethos. Helping establish a robust, attractive identity enables a city to compete effectively within the global economy and motivates its citizens and stakeholders.

Municipalities with appealing identities such as Dubai, Singapore, Paris, New York, Tokyo, London, and Los Angeles enjoy international fame; they attract tourists, students, world-leading innovators, creative workers, corporations, and local and foreign investment.

Cultural Growth

> "Cultural and creative industries have been identified as key drivers of urban prosperity and growth in cities"

Alongside commercial activities, cultural and creative industries (CCIs) have been identified as helpful drivers of urban prosperity and growth. Since 2007, the EU Commission's Cultural and Creative Cities Monitor has identified a strong and positive association between Cultural and Creative (C&C) index scores and annual GDP per capita.

High C&C indexed cities also enjoy more jobs and human capital than other European cities: in 2017, per capita, they had 19% more jobs, 8% more young people (20-34) and 73% more students in higher education[2].

Indeed, governments are deploying culture to boost economic regeneration, including a series of productive municipal projects, as highlighted below[3].

Successful Urban Cultural-Economic Initiatives

Aviva Studios, Manchester, UK a multi-use arts venue on a formerly industrialized stretch of the River Irwell, opened in June 2023. Initiated in 2014 as part of a 'northern powerhouse' policy to shift influence from south-east England, it was funded by the national government and City Council (the $268m investment constituted the largest in a cultural project since London's Tate Modern in 2000). Studio executives estimate it will contribute £1.1bn ($1.34bn) to the city's gross value added (a measure of output) by 2033 and create more than 1,500 jobs. The building is

> "a manifestation of Manchester investing in creative industries as part of its future."
>
> (Artistic Director John McGrath)

Jersey City US, is paying for a Centre Pompidou arts venue, while **Abu Dhabi**, UAE, has earmarked $6bn for creative industry spend to diversify from oil, and **Al Ula**, Saudi Arabia, is slated to become Saudi Arabia's cultural capital.

Australia's 'Revive' strategy for the cultural sector will distribute funding across remote communities to help promote a knowledge- rather than mining-based economy.

Proximity to recreational facilities is important to 25-34-year-olds countering claims of cultural elitism, according to the think-tank Centre for Cities, and influences their decisions about where to live. The Economist's Intelligence Unit calculates a city's 'livability' according to five categories: **culture, education, infrastructure, health care, and stability.** Studies conducted by University College London from 2017-2022 found that enjoying the arts staved off depression, dementia, and chronic pain.

Government commitment to providing adequate supporting infrastructure and thorough regeneration of areas around new facilities genhances the success of cultural projects. Construction of Bilbao's Guggenheim Museum involved the installation of transit links and the clean-up of the Nervión riverside. Achieved at a cost of $100mn, this cultural hub has helped revive the museum: in 2022 it attracted 1.3mn visitors, while tourist spend in the city contributed more than €70mn ($74mn) in taxes.

Analysis:

Leading Practices for How a City can Establish an Identity, List of Desired Outcomes, and Develop a Value Proposition to Achieve Them

In *The global identity of cities: Seven steps to build reputation and visibility for competitiveness and resilience,* Clark, Gootman, Bouchet and Moonen suggested the following for developing city identities[4]:

1. Assessment of Current Status

Treat 'cultural policy' as holistic 'people policy', where success is judged by engagement and opportunities over conventional outcomes such as economic indicators.

2. Determining Objectives

These may include raising levels of commercial activity, increasing appeal and reputation to attract investments, visitors, talented students and workers, and boosting confidence.

3. Motivating City Stakeholders

Identifying and engaging with high profile individuals and organizations devoted to the city, and encouraging them in co-operative alliance.

4. Discerning Distinctive Characteristics and Reviewing Perceptions

Understanding the city's history, unique features and reputation as perceived by insiders and outsiders is useful. This will reveal gaps between how the city should be seen, how it is actually viewed, and how it is promoted. Street-based 'Vox Pops' (short and quick interviews with people) such as those carried out by Dubai's Tasmena Group from 2011 can help highlight divergences[5].

5. Translating Values and Assets into a Narrative

The city's attributes must be expressed as a narrative that resonates with target audiences. This can be condensed into an 'identity statement' that conveys the essence of the city in an easily recognizable shorthand.

6. Planning

Implementation of the process relies on precise scheduling, appropriate governance, and realistic budgeting. Work parties must divide tasks and accommodate legal requirements relating to intellectual property (branding) developed through the process.

7. Promotion

Innovative tactics and motivated stakeholders must be deployed to broadcast the new identity as cost-effectively as possible, with progress monitored throughout: positive data justifies spend. Strategies include organizing city university alumni, recruiting civic champions and initiating identity-related awards.

Case Study AMSTERDAM

- The 'I amsterdam' campaign, launched in 2004, is one of Europe's first city branding projects, designed to create positive attitudes in the minds of visitors and allow citizens and firms to develop 'feelings of affiliation' with the city.
- Sixteen core identifiers were established: 'City of knowledge', 'Business city', and 'Residential city' evidently required strengthening, whilst 'Sex, Drugs and R&R' - the cause of offensive activity - needed de-emphasizing[6].
- The slogan 'I amsterdam' was chosen because it was clear, welcoming, easy to remember, and resonated with the desired targets: students, corporate workers and citizens, who effectively 'became' the city. It is now a permanent component of the capital, and still generates strong word-of-mouth promotion.
- The effects of measures aimed at discouraging licentious behavior in the city are still being assessed. These include online campaigns aimed at partygoers and billboards featuring residents reminding visitors: 'We live here', as well as stringent new operating regulations in the red-light district[7].

Case Study PARIS

- In June 2020 Anne Hidalgo won a second mandate as Mayor having committed to the '15-Minute City' ('La Ville du ¼ d'Heure') through the 'Paris en Commun' program that prioritized resilience and livability over economic growth.
- The approach originated in the work of academic Carlos Moreno who advocates for urban environments where locals can access all their essentials for living within 15 minutes on foot or by bike[8].
- Paris was restructured to comply with components such as proximity, diversity, density and ubiquity. The social fabric has become more closely knit; residents participate in activities that strengthen social bonds, creating trust and healthier urban landscapes.
- There are voices of dissent, however: citizens that prefer to drive use #SaccageParis (ransacked Paris) to label photos of blocked highways. Hidalgo points to Parisians' change-resistant conservatism and argues that a more significant reason for disaffection is lack of social housing, now set to increase from 25% to 40% by 2026. This will cost €200m ($212m) in 2023 alone, including converting old office blocks into housing.
- The world will be able to experience Hidalgo's changes at the 2024 Olympic Games. Visitors will be able to cycle to venues along 60km of new lanes; the Porte de La Chapelle will have a sports arena with a green roof garden[9].

2. Challenges

How can a City Identify Difficulties that can be Addressed Through New Technology Solutions, to Help Achieve their Desired Identity and Outcomes?

Global cities have advanced for centuries by the deployment of innovations in transport, construction, provision of utilities and waste management. The latest wave of technologies has arrived via digitalization: large-scale gathering of data for rapid analysis that promises to improve city functionality for the benefit of public and private enterprise.

Associated advances in robotics, 5G, the Internet of Things (IoT), quantum computing, 'Digital Twins' (interactive 3D models that facilitate urban planning) and AI offer almost limitless scope for optimizing citizens' lives and realizing their creative and productive potential. Many of these technologies have been embraced by those supporting the concept of streamlined, interoperable, data-driven 'Smart Cities'.

Analysis:

Challenges Cities are Addressing. Does Identity Impact Prioritization of Challenges and/or the Nuance Around the Ways Challenges are Addressed?

Many of the hurdles global cities face in 2023 are related to increasing urbanization. Around half of the world's population currently lives in urban areas, and this is projected to increase to 68% by 2050[10].

The population drift from rural districts to cities, particularly in developing countries, is exerting pressure on water and energy supply, sanitation, waste disposal, air quality, social equality (in education, health, and employment), transit, and housing infrastructure. The negative outcomes of overcrowding, traffic congestion, pollution, and crime can be exacerbated by several factors. These may include conflict-driven economic collapse; hyperinflation; and extreme, unseasonal climate change events (wildfires, floods, hurricanes), calamities that befall cities whether or not they can afford to recover from them.

Long-established cities with clearly defined identities and strong community, business, and family networks usually excel at coping with these challenges. Engagement with wide-ranging municipal initiatives involving the overhaul of entire neighborhoods is likely to be enhanced if benefits are clearly communicated; community involvement is sought; and residents are motivated stakeholders in the city's future with faith in its governance.

Case Study
LONDON

- Having experienced unprecedented heatwaves and wildfires in 2022, Londoners are generally supportive of initiatives addressing climate change.
- The current Mayor of London, Sadiq Khan, was voted into office with a manifesto of making the city Net Zero Carbon by 2030. He is now the head of C40, an international group of cities almost 100 strong that is using an inclusive, science-based, and collaborative approach to halve emissions by 2030, help limit global heating to 1.5˚C, and build healthy, equitable and resilient communities[11].
- In its June 2023 report, London's Just Transition, the London Sustainability Development Commission (LSDC) set out a vision of the actions needed for a greener, fairer city that Londoners can get behind. Given that the city only has control of 7% of the taxation generated by residents (compared with 50% in New York and 70% in Tokyo), the report also recommends that the central UK government devolves the necessary powers and funding for London to accelerate local climate action tailored to its various communities[12].

As part of Horizon Europe, the EU has launched an ambitious mission to create '100 Climate-Neutral and Smart Cities by 2030'[13]. These cities will act as experimentation hubs to enable all European cities to follow suit by 2050. The Horizon 2020 and Horizon Europe research programs and the European Green Deal propel member states towards a 55% cut in emissions by 2030 and climate neutrality by 2050[14].

Case Study
HEILBRONN

- One of the first centers of industrialization in south-western Germany's Baden-Württemberg region, Heilbronn is now a forward-looking city of 126,000 people.
- In 2019, spurred by the challenge of hosting the Bundesgartenschau (BUGA), a biennial Federal Horticultural show, it transformed the Neckarbogen district, a 40-hectare former wasteland, into a modern, pedestrian neighborhood with smart-city features.
- It was the first BUGA with residents: 800 people living in sustainably constructed buildings. These include the solar panel-decked Apollo 19, initiated by a co-housing group that was invited to realize their community ideas with two major design studios.
- The resulting development, incorporating individual floor plans, responds to members' specific needs.
- Alongside Neckarbogen's rippling green pedestrianized landscaping, lakes have been installed that facilitate water management and irrigate the park's millions of flowers, shrubs, and trees. Safety is enhanced by energy-efficient smart lighting, including fiber-optic connections to enable free WiFi. Significant numbers of electric vehicle (EV) chargers have also been installed[15].

3. Mapping the Possible

How can Cities Map their Existing Capabilities (i.e. Local Ecosystem Including People, Money and Assets) to Determine the Art of the Possible?

Urban asset mapping can identify the strengths and resources of a city to help address prevailing challenges. Assets can include physical structures (tower blocks, schools, hospitals, churches, libraries, social clubs); businesses that support the local economy and provide jobs; associations such as Neighborhood Watch; the capabilities of community members; and private, public and nonprofit institutions or organizations.

Asset mapping is invaluable at the outset of a local program requiring information about available resources. It can also assist in formulating directions for new initiatives and identifying areas where development may be beneficial. For example, an asset map of nutrition resources and food banks for low-income families in a particular area may reveal venue inaccessibility or absence.

If locals are involved in constructing the asset map, the process itself can be an organizing tool; mapping public services and calculating the municipal spend per community member can mobilize residents to lobby city councilors to improve local public services.

Analysis:

Best Practices for Mapping City Capabilities to their Challenges (Government and Local Ecosystem)

In *Identifying, Mapping and Mobilizing our Assets,* Boyd Rossing (University of Wisconsin-Madison, 2000) described the steps involved in asset map creation[16]:

1. Define community boundaries: to reflect citizens' geographic perceptions.

2. Identify and involve partners: key stakeholders and organizations with wide community networks and local knowledge, that are, ideally, prepared to help finish the map.

3. Choose which assets to include: money, access to economic resources, buildings, skills, knowledge, political connections, legitimacy in the community, and access to media.

4. List the assets of groups: all relevant local associations, organizations and institutions. Describe their location, services offered, public-private membership / governance, available resources (staff, facilities), and their influence and legitimacy.

5. List the assets of individuals: skills and contacts, collected via surveys and interviews.

6. Organize assets on a map: once each resource has been pinned, it becomes a visual representation of findings that can reveal gaps in services, underused/uninvolved assets, and areas for improvement. Key findings can then be summarized and shared, to help redirect program priorities, apply for grants and inform city board members, policy makers, or funders.

Case Study
SINGAPORE

- Singapore's Urban Redevelopment Authority (URA)[17] uses long-term, comprehensive approaches to formulate plans that guide the physical, sustainable development of the city and help generate high quality living environments.
- The Authority has created and constantly updates URA SPACE, a centralized, integrated online map portal to deliver location-based services and information, comprising a variety of mapping services and data from several partners.
- The web-based map service allows straightforward access to detailed information (land use plans, guidelines, car parks and so on) and can also be used to gain greater appreciation of the URA Master Plan. This acts as a semi-blueprint of the country's built environment future and contains details such as permitted land use and building density: useful reference points for would-be developers and investors.

Case Study
HONG KONG

- The 2017 Smart City Blueprint for Hong Kong set out the overall framework for the use of innovation and technology to address urban challenges. It also included the adoption of Building Information Modelling (BIM), and the development of Common Spatial Data Infrastructure (CDSI) and a 3D Digital Map by 2024, with HK$300m of Government funding to facilitate dissemination, use and application of geospatial data[18].
- The Map will show high quality 3D visualizations of topographical and exterior features of terrain, buildings and infrastructures, 3D interior maps for 1250 buildings and 3D pedestrian network data over the territory.
- It will assist in the execution of works projects and engineering studies with landslip prevention/mitigation, town planning, spatial analysis, simulation, applications for smart mobility, and other feasibility studies.

4. Digital Facilitation

What are the Opportunities to Mitigate the Identified Challenges by Enhancing/Digitizing Existing Service Offerings or Building New Ones?

To address ongoing threats, cities with appreciable finances, and/or the opportunity to raise funds from government/corporate collaboration, can apply digitalization technologies and innovations to location-specific challenges.

Decarbonizing and decongesting can be accelerated by introducing low carbon dioxide emission zones. In London, city-center drivers incur a Congestion Charge for bringing their vehicle into downtown, and often an extra charge for the ultra-low emission zone (ULEZ)[19]. This is designed to discourage fossil fuel-powered vehicles. The initiative should ideally be reinforced by government legislation that facilitates electrical vehicle (EV) use by providing charging infrastructure and developing ride-sharing apps in partnership with technology firms[20].

Security can be enhanced by lamp post-mounted cameras. As of 2022, in India's Uttar Pradesh, 5,000 cameras have been installed in 16 cities, at sites where accidents occur frequently and first responders are often needed[21]. The devices also log unlawful activity. Chief Minister Yogi Adityanath said: "Our cities are now getting smart as well as safe. Now... a criminal who commits robbery at one intersection will be caught by police at the next."

Where waste collection and road conditions are inadequate, **sensors attached to garbage trucks** and other municipal vehicles can monitor road conditions and worker overload[22].

Beneficial civic actions such as shopping locally have been incentivized using civic app-based **'local coins'.** For example, the Belfast Coin, developed with technology company Colu, can only be spent in shops within a certain distance, fostering circular economies and 'hyper-localization' along the lines of the 15 Minute City[23].

To optimize urban energy use, the concept of the **'network-centric software base'** is being applied to new dwellings, synchronizing all utility systems - heating/cooling, electrical appliances, alarms - and providing accessible dashboards that avoid the need for multiple apps. EV charging points are installed in building basements, with the potential to use the energy from car batteries as they charge to forestall power cuts. Torrents of usage and running data from all systems are increasingly analyzed by AI to enable peak performance.

Analysis:

Insights About Visioning Processes for the Future of the City, Selecting Specific Digitalization Opportunities; Assessing the Impact of Enhanced New Digital Service Offerings.

New types of thinking will be needed to achieve sustainable civic futures within the planet's limitations. The concept of **'futures literacy'**, developed by the United Nations Educational, Scientific and Cultural Organization (UNESCO), provides a learning process for adapting to global complexity and directing societal attitudes towards engagement, empowerment and resilience[24].

Futures literacy is an essential tool for effective civic participation, empowering every citizen to contribute to a shared vision of the future. Current crises are so complex that they need varied expertise and perspectives. Drawing on wider community voices ensures relevance and enables combined solutions. The next generation - imaginative digital natives, often expert communicators and motivators - must be involved, as caretakers of the future.

> "The future, where we have one, is not in economic security or ESG, it is in building resilient, regenerative communities"

As sustainability expert Pooran Desai commented recently: "We have crossed climate tipping points. We are out of time. Start looking at your community. The future, where we have one, is not in economic security or ESG [Economic, Social, Governance], it is in building resilient, regenerative communities.[25]"

Recently, those engaged in futures studies have acknowledged the need for more collaborative exercises beyond the narrow focus on expert groups. Participatory scenario workshops have been used in the context of urban development. In May 2021 Toivonen et al, in Empowering upcoming city developers with futures literacy reported on potential workshop methodologies and the results of their own test studies, carried out among students[26].

Activities included the Futures Wheel, in which a given phenomenon and its impacts are organized into clear, comprehensible visual wheel forms (future-themed games with cards featuring trends designed to prompt the envisioning of potential futures), lectures, and pair discussions. Study participants found that these activities offered a shared framework and acted as a catalyst for future-oriented joint discussions.

> "The digitalization of public services should also increase sustainability, improve the efficiency of available resources and encourage participation by the population."

The selection of specific urban digitalization opportunities via optimization of infrastructure using information and communication technologies (ICTs) should, ideally, enhance quality of life for all citizens. The digitalization of public services should also increase sustainability, improve the efficiency of available resources, and encourage participation by the population.

This usually involves a multiple-objective decision process performed by experts in relevant domains. In February 2021, Yenchun Jim Wu et al proposed a structural method for policy selection, consisting of three phases[27]:

1. **Modified Delphi method:** an approach that answers research questions via identification of a consensus view across subject experts is used to determine the elements of the decision

2. **Analytic hierarchy process:** used to ascertain the priority of each alternative according to the goal of the decision

3. **Zero-one goal programming models (designed to deal with problems involving conflicting objectives):** developed to select a feasible portfolio based on the political goal and annual budget.

An empirical study was carried out to validate that the proposed model could induce the municipality to consider citizens' requirements, identify the strengths and weaknesses of proposed policies, and select a feasible project portfolio in response to public expectations.

But technological approaches deployed in isolation are not enough as catalysts for attractive, livable spaces. Direct consultation and dialogue with citizens/potential occupants is essential to avoid the soullessness of megacity projects created using opaque technology from profit-driven companies.

The city of Songdo in South Korea, for example, has attracted criticism for its corporate blandness and invasive technology.

Case Study

SONGDO, SOUTH KOREA

- Songdo City began as an exciting concept: a pioneering, packaged 'City in a Box'[28] approach allowing rapid construction. Every public service was digitalized and made available to all. This wholesale installation of technology from the ground up may lead to issues around adaptability: ageing systems require close monitoring.
- The city was targeted at wealthy foreign investors using subsidies and tax exemptions. Against the backdrop of a national housing shortage, such exclusionary practices were questionable: they could lead to fragmented demographics and high crime rates.
- Songdo's cityscape was designed by leading global companies, but despite its green spaces and bike paths, many view it as mundane and generic. The bland walkways highlight the fact that developing authentic urban identities can take decades.
- The city's hyper-aware surveillance model promotes safety and security. But schemes including geo-positional satellite (GPS) locator bracelets for children and resident-specific smart-card house keys that can be used for payment in transit and entertainment venues have raised privacy concerns.

To avoid the negatives of Songdo - inflexibility, elitism, homogeneity, and over-control - planners of new smart cities may benefit from the Gestalt reflection: that the whole is greater than the sum of its parts.

"A truly smart city... leaves room for spontaneity, flexibility and grassroots initiatives. It welcomes diversity and embraces transparency rather than control."

Keeton, R. (2003) 'When Smart Cities are Stupid'[29].

5. Ensuring Digital Success

What are the Critical Success Factors and Key Considerations for Developing and Implementing New Technology-Enabled Service Offerings?

For cities looking to remain ahead of the curve and compete effectively, adopting new, apparently game-changing systems can appear essential. To avoid overspending and redundancy – 'technology for technology's sake' – city leaders should have a thorough understanding of the requirements and issues any new technology addresses.

Systems should offer:

- Observability (easily accessed data on performance status, process flow and interface health)
- Adaptability
- Security
- Ease of operation and maintenance.

When presented by a wide array of choices – even if cost-effective, beneficial and well-designed – the culture and values of the vendors should be examined. Their priorities should be customer service, innovation, and continuous improvement.

The relative novelty of Smart City technology and the complexity of urban scenarios can give rise to unintended consequences. For example, surveillance data from lamp post-mounted, energy-efficient lighting in San Diego caused political uproar when the police department admitted to finding it useful in prosecuting traffic offenders[30]. The gathering of biometric data supporting facial and gait recognition is similarly best managed with extreme sensitivity and transparency.

Public attitudes to data gathering and surveillance vary between countries, due to differing demographics, politics, and stages of technology adoption. Generation Alpha, born since 2010, is growing up immersed in technology and expects to find it in every aspect of their lives. Far Eastern countries are highly receptive to new technology, especially in places where it was previously hard to find such as in China, where mobile phone use has rocketed. Likewise, South Koreans spend 40% of their lives online[31].

The multiple-user interfaces, open architecture networks (OANs), and interoperability of Smart City technologies, reliant on standardization and synchronicity, are **vulnerable to cyberattack** perpetrated by hackers, ransomware gangs, or state-sponsored agents.

The risks posed to semi-autonomous or autonomous robots and vehicles by data breaches have given rise to US legislation aimed at ensuring new car data safety. In June 2023, a letter from the National Highway Traffic Safety Administration warned car manufacturers that they should not comply with a law that enables consumers and automobile shops to repair cars using diagnostic tools allowing access to car data. "A malicious actor... could utilize such open access to remotely command vehicles to operate dangerously.[32]"

Analysis:

Insights Regarding User-Centric Approaches and Promoting Public Trust, Privacy and Security; Best Practices Regarding Partnerships with the Private Sector to Develop, Operate and/or Commercialize Technology.

In *Dream States: Smart Cities, Technology and the Pursuit of Urban Utopias,* John Lorinc quotes Rutgers University smart city expert Ellen Goodman observing that cities are confronted by a crossroads in their "embrace of the Internet of Things and 'smart city' agendas. Will they do it in ways that give control over city functions and citizen information to private companies and impenetrable algorithms, or will there be public control and accountability?"[33]

Securing public support for smart city initiatives by providing **transparency, accessibility and agency to residents** at every planning stage optimizes implementation. Lorinc references Barcelona, often cited as a "model for progressive smart city governance that balances the Catalonian capital's desire to attract technology investment with other goals, like citizen engagement, privacy and sustainable development."

Barcelona, in conjunction with Amsterdam and New York, launched the Cities' Coalition for Digital Rights in 2018[34] with a declaration signed by other metropolitan areas around the world calling for:

- **Universal and equal access to the internet** - globally, 60% of people are not connected - and digital literacy to overcome the digital divide.
- **Privacy, data protection and security:** digital confidentiality, dignity, anonymity, and sovereignty. Everyone should have the right to know what happens to their data, who uses it, and for what purposes.
- **Transparency, accountability, and non-discrimination of data, consent, and algorithms:** access for all to accurate information about the technological, algorithmic and artificial intelligence systems impacting their lives, and the ability to question and change unfair, biased or discriminatory systems.
- **Participatory democracy, diversity, and inclusion:** the opportunity to take part in shaping local digital infrastructures, services, and city policy-making.
- **Open and ethical digital service standards:** everyone should be able to use the technologies of their choice, and expect the same level of interoperability, inclusion, and opportunity in their digital services.

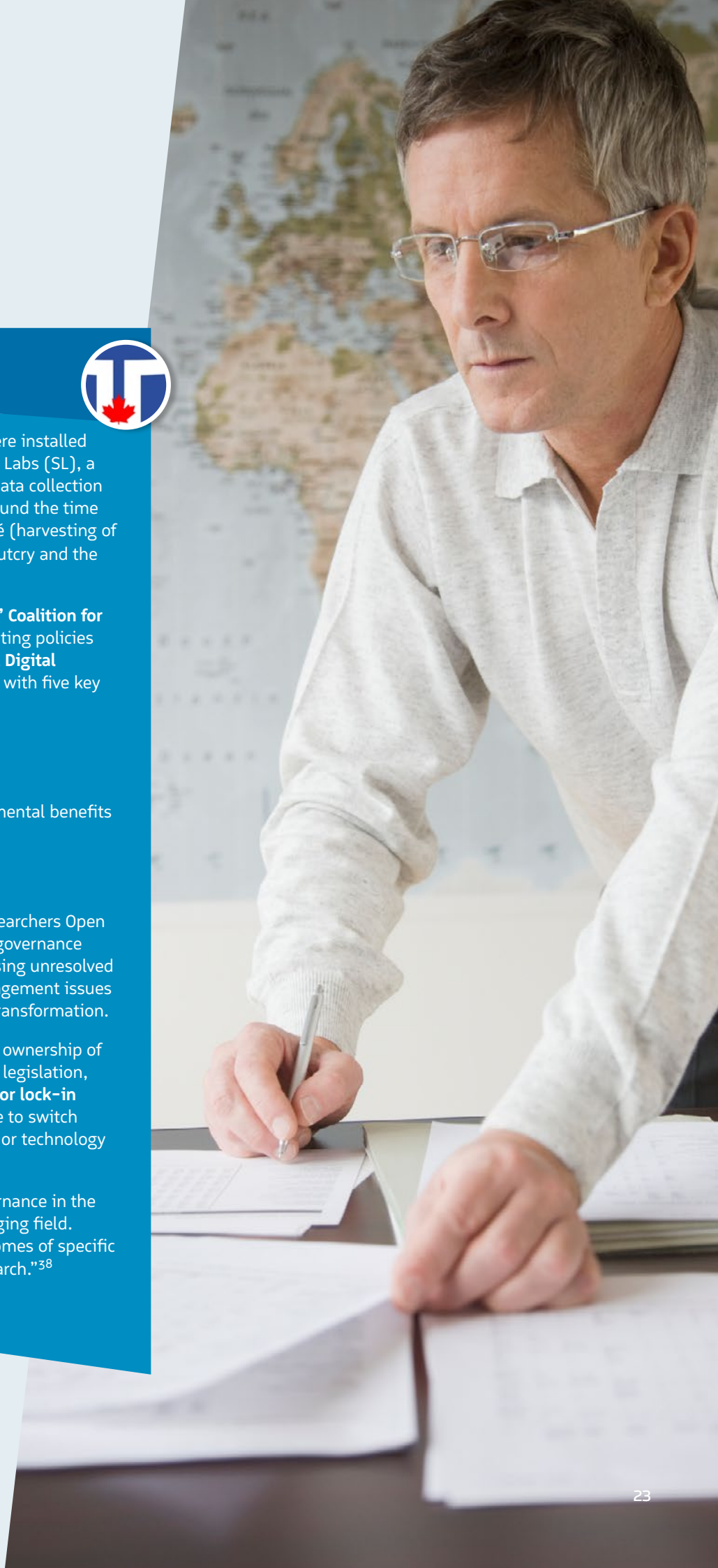
In 2021, the consultative Amsterdam Smart City Initiative[35] identified six core **principles for digital cities**, which we are re-presenting in an acronym, CLIMATE:

	Controlled by residents
	Locally focused
	Inclusive
	Monitored
	Accessible
	Transparent.

- Acknowledging that urban issues are best solved by collaboration, from the outset the scheme has been a public-private partnership (PPP) of 20 permanent partners: companies active in the city, governments, social organizations, and knowledge institutions. They work on complex issues that cannot be solved in isolation. Residents are informed of partners' activities via open meetings in venues such as Datalab.
- **Public-private partnerships (PPPs)** can give rise to privacy concerns, especially around the commercial use of smart city data. Companies paying to provide technology for cities in return for access to data collected from communities should be bound by rules laid out in initial PPP agreements that are followed up to ensure compliance.
- **De-identifying** residents' data minimizes the privacy risks of commercial data sharing; government privacy legislation assists in regulating such activities across the board.
- Cities can avoid sharing residents' personal data with companies if they sell advertising space on digital billboards targeting specific communities. Boston-based start-up Soofa creates digital signs that display information on local news, events, and public transit, financed by adverts from local businesses[36].

Case Study
TORONTO

- In 2017, thousands of sensors were installed in Toronto's Quayside by Sidewalk Labs (SL), a Google subsidiary. The extent of data collection from passers-by was revealed around the time of the Cambridge Analytica exposé (harvesting of Facebook profiles)[37], provoking outcry and the dismantling of SL.
- In 2019, Toronto joined the **Cities' Coalition for Digital Rights,** and began formulating policies shaped by SL-generated issues. A **Digital Infrastructure Plan** was produced with five key principles:
  - Equity and inclusion
  - Effective local government
  - Social, economic and environmental benefits
  - Privacy and security
  - Democracy and transparency.
- A year later, technology policy researchers Open North reported on Toronto's data governance and digital infrastructure, addressing unresolved policy, legal and technology management issues facing the city during its 'smart' transformation.
- These included approaches to the ownership of data, ethical uses, gaps in federal legislation, technical standards and the **'vendor lock-in problem'** (when clients are unable to switch providers without significant fees or technology incompatibility issues).
- The report concluded: "Data governance in the smart city context is still an emerging field. Tracking and measuring the outcomes of specific initiatives will require future research."[38]



Part II: Urban Economic Growth

1. Supply Chain

1.1 Citizens' Expectations

How can Cities Manage and Mitigate Increasing Customer/Citizen Expectations Related to Supply Chains to Further Economic Growth?

The **'need for speed'** exhibited by modern day consumers - immediate click-and-pay transactions; same-day delivery; and cheap, disposable fashion - has been encouraged, facilitated, and accelerated by the rise of online retail mega-corporations, persuasive marketing in social media channels, and home deliveries necessitated by the pandemic.

Consumers now also tend to expect end-to-end traceability of their purchases via texts and apps, real-time responses to problems, and clear **evidence of sustainable practices and ethical sourcing** from suppliers.

Operational and logistical systems are still functioning in **a volatile, post-pandemic space.** Supply chain experts use the term 'perma-crisis' to denote an unstable and insecure environment, constantly disrupted by geopolitical, financial, manpower and climate crises.

Responding to these challenges in terms of supply chain management has resulted in a risk resilience-building paradigm focused on improving visibility of internal and external processes, interactivity, planning and collaboration that avoids the 'siloing' of activity within supply chain components. These include procurement, manufacturing, storage, logistics, warehousing, and customer management.

> "Making customers aware of their role within the supply chain may reduce the social and environmental impact of their demands for immediacy."

Making customers aware of their role within the supply chain may **reduce the social and environmental impact of their demands for immediacy.** This might be achieved through educational campaigns, or messages on consignments that encourage recycling and re-use of packaging, and acceptance of longer delivery times: "Thank you for respecting our employees."[39]

Informing customers how best to use technology that better defines their requirements, such as 3D scanning body measuring techniques, and visual search capabilities that use customer photos of outfits to search for similar clothing, should also help to **minimize returns** that necessitate extra journeys.

In cities seeking to de-congest and de-carbonize, **minimizing delivery journeys is paramount.** Solar- and electric battery-powered devices have been trialed in various cities, including courier robots in inner-city Toronto[40] and drones in Reykjavik that fly 25m above the ground and lower consignments by rope[41]. The use case for drones is strongest in low density outer suburbs (exurbs), and they may displace internal combustion vehicles over long distances.

An Oxford Economics report, *Surviving and Thriving: How Supply Chain Leaders minimize risk and maximise opportunities*[42], based on a survey of 1,000 supply chain executives across 19 countries, examined strategies for building resilient, sustainable supply chains[43]. Two principal issues emerged:

- Meeting customer demands for rapid interactions
- Lack of collaboration and visibility, not just among suppliers but also within organizations.

More than half the executives felt that **diversifying sourcing strategies and creating more local networks of vendors and suppliers** (re-shoring, near-shoring, and 'friendshoring') could help to address the first issue. Changing products and delivery processes while adjusting supply and demand forecasting could also have positive effects on the customer experience.

"Building a resilient and sustainable supply chain can help organizations avoid danger and mitigate risk"

The report makes five recommendations to achieve resilience and avoid risk:

Putting supply chains at the heart of the business strategy

Future-proofing against risk

Unleashing the power of collaboration across networks

Leveraging intelligent technologies to drive business and process innovation

Adopting a 'sustainability first' mindset.

Within a perma-crisis, risks are never going to disappear completely, but building a resilient and sustainable supply chain can help organizations avoid danger and mitigate risk.

1.2 Diversifying the Supplier Base

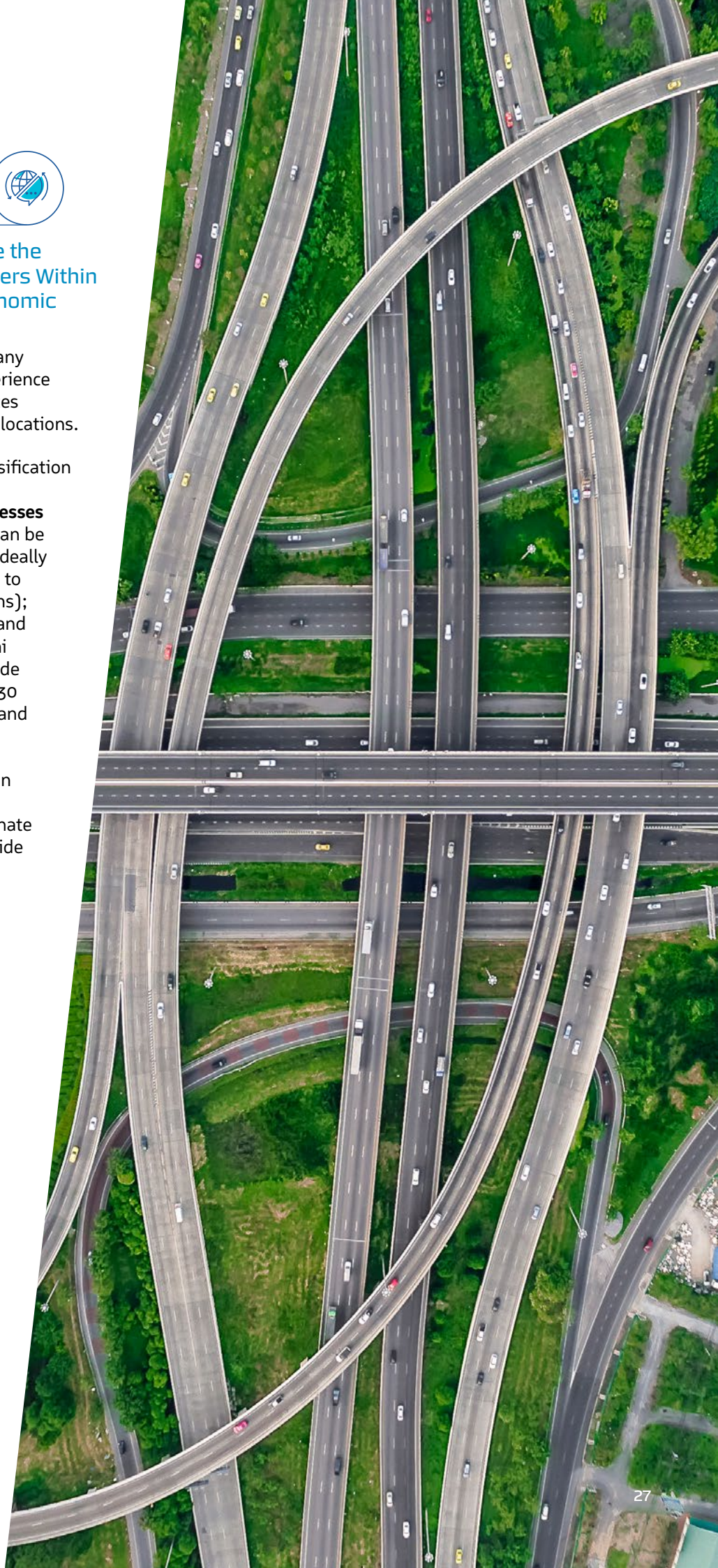
How can Cities Help Decrease the Dependence on Single Suppliers Within Supply Chains to Further Economic Growth?

Cities reliant on single suppliers at any point within supply chains can experience disruption and delays if these sources become defunct or move to distant locations.

Municipal leaders can achieve diversification of supplier bases by **incentivizing applications from competing businesses within prioritized industries.** This can be achieved via economic free zones (ideally situated within or nearby city limits to reduce transport costs and emissions); tax breaks; customs duty benefits; and privileged work visa schemes. Dubai is proficient at establishing free-trade zones (FTZs), where there are over 30 multidisciplinary FTZs operating in and around the city[44].

Working towards self-sufficiency can also reduce reliance on potentially unreliable suppliers - or even eliminate any need for them - as well as provide employment and local business opportunities.

In May 2023, the United Arab Emirates (host of the UN Climate Change Conference, COP28 in November-December of this year), in its National Food Security Strategy, committed to improving its food security via **innovations such as high-rise vertical farms using hydroponic and aquaponic techniques** that can yield 100 times more produce than traditional farms. The UAE aims to increase home-grown food production by 30-40% in ten years and become a world-leading hub of innovation-driven food security by 2051[45].



2. Working Out the Labor Issues

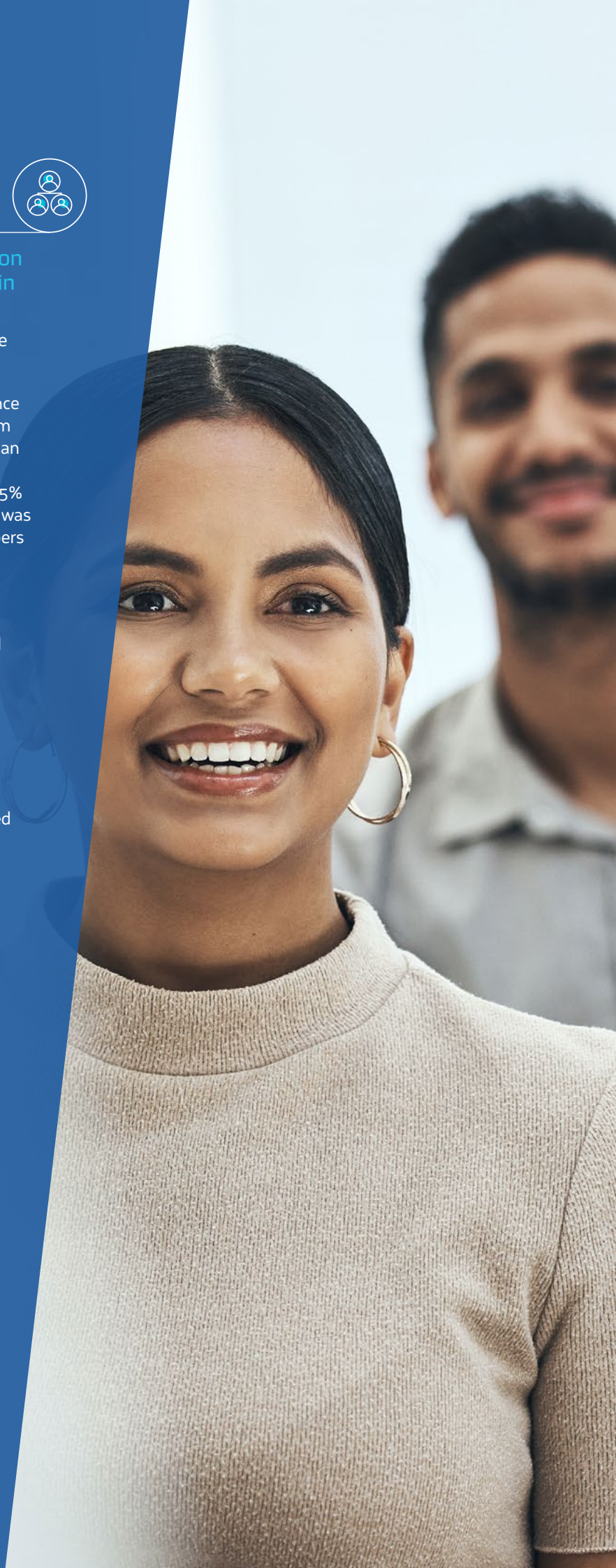
2.1 Satisfying Staff and Employers

How can Companies Encourage In-Person Collaboration, While Remaining Flexible in their Approach to Remote Work?

In-person collaboration at work has proven to be helpful, as recent research shows:

- MIT's Human Dynamics Lab tracked performance drivers across industries by collecting data from electronic badges sensing every aspect of human interaction. The results showed that **the most valuable communication is done in-person:** 35% of the variation in a given team's performance was explained by the number of times team members spoke face-to-face[46].
- **Face-to-face requests are 34 times more effective than those sent by email,** and that physical handshakes promote cooperation and positive negotiation outcomes[47].
- **In-person, face-to-face meetings allow participants to capture the full attention of attendees**, mitigating the tendency to multi-tasking that dissipates focus. Bringing teams together also boosts economies: in 2016 US companies held 1.9mn meetings that sustained 5.9 million jobs and generated over $100bn in local, state, and federal taxes[48].

But having worked from home during the pandemic, many employees now appreciate the benefits of remote working: asynchronous scheduling (working hours that suit the individual); greater flexibility in childcare, exercise, deliveries, and shopping; as well as the absence of expensive, lengthy commutes and exposure to disease.



"In-person collaboration at work has proven to be helpful... but many employees appreciate the benefits of remote working"

Businesses offering employees the chance to split work between several days at the office and the rest at home are realizing the **advantages of flexible working models.** There is often greater employee satisfaction due to the increased autonomy that hybrid working can grant. That said, business leaders must ascertain the most beneficial model for their business.

All-remote (and, increasingly, all-virtual) companies have no offices, and employees are free to live and work wherever they choose, allowing recruitment from large talent pools. With few in-person meetings, **social scheduling** - get togethers at business fairs and team-building events - tends to be prioritized.

In a hybrid setup, a subset of the company commutes to the office each day while the remainder works remotely. Sizeable spaces can be reserved for specific onsite, in-person team meetings such as fiscal year planning and team bonding events. The content of work-related meetings and spontaneous conversations should be captured accessibly so that all team members can comment. **Inclusivity is key:** GitLab CEO Sid Sijbrandij commented in a recent article, "It's not that people like their commute; it's just that people don't want to miss out."[49]

Team members in remote settings may wish to organize office-based social gatherings; companies might choose to repurpose office space to accommodate groups. Work should not occur in social rooms, as this creates communication silos, hindering transparency. Travel budgets for onsite social events should, of course, include remote team members.

2.2 Stimulating Collaboration

What can Cities do to Facilitate and Encourage In-Person Collaboration Within and Across Companies/Subsidiary Locations?

In-person collaboration with employees in subsidiary and affiliated fields is a significant factor motivating businesses to move to new areas. Municipal commitment to creating urban settings conducive to synergistic business growth is increasingly seen as a pre-requisite for relocation.

In Dubai, long-term planning of bespoke, purpose-built business areas such as the Dubai Design District has enhanced connectivity and created opportunities for cross-pollination of ideas. Indeed, the city has **a comprehensive strategy for technology hub development** that has attracted a talented international workforce. Leading technology companies have been drawn by a competitive corporate tax rate incentive capped at zero and ongoing business visa options. A recent work visa scheme enables foreign employees to work remotely from the UAE.

The city has also established incubators such as **Dubai's Area 2071**, "Where great minds meet today to design the future", giving startups, freelancers and innovators access to subsidized services, global markets through the 'Country in Residence' program, community events and networking opportunities. Dedicated workspaces, innovation labs and regular workshops foster real-life interactions[50].

For cross-site interaction, Dubai's mass transit system (the city-wide Metro as well as localized tram and bus networks) offers safe, convenient, efficient, and sustainable methods of crossing the city. For journeys requiring extra security, cars may be preferable; Dubai is encouraging the use of EVs by installing an extensive charging infrastructure.

2.3 Attracting Citizens Back

What Tactics can City Administrators use to Encourage Back-to-Office and Back-to-City Living?

The paper, *State of the Cities Report 2021*, by the National League of Cities (NLC), an organization representing 19,000 metropolises, towns, and villages across the US, examined the effects of the pandemic on critical issues facing municipalities and the consequent challenges[51].

Challenges Facing American Cities

- **Declining infrastructure:**
  39% of officials indicated that roads and bridges had deteriorated over the past year
- **Homelessness:**
  increases were reported by **63%** of respondents
- **Lack of affordable housing:**
  specified by **37%** as the most prominent factor driving negative local outcomes
- **Small business jeopardy:**
  68% reported increases in the need for small business emergency assistance.

Source: State of the Cities Report, 2021

> "Communal and green, open spaces are crucial in enhancing city livability and resilience"

The report asserts that the extent to which communities were resilient in responding to the crisis was largely determined by existing urban infrastructure, as shown below:

Most Significant Positive Conditions Supporting Communities

- Availability of parks, recreation, and community green and open spaces (cited by **43%** of respondents)
- Straightforward access to clean drinking water (**40%**)
- Reliable broadband provision (**20%**).

Source: State of the Cities Report, 2021

Clearly, optimization of urban infrastructure, particularly communal and green, open spaces, is crucial in enhancing city livability and resilience.

Brooks Rainwater, Senior Executive of the NLC, asserted in June 2022 that municipal investments should be directed towards civic spaces like parks, libraries, and community centers, as well as better transport options:

"The idea that downtowns must be work-centric rather than people-centric is an antiquated Industrial Revolution idea. Is there value in in-person collaboration and serendipitous collisions at the water cooler? Yes... people will always work in cities and meet there for key events. But the fact that so many people can be untethered from the drudgery of their desks should be celebrated. Regardless of whether people are physically working there, **the great draw of cities will continue, because people will still want to be there for all the other human-centered cultural and social benefits that cities provide."**[52]

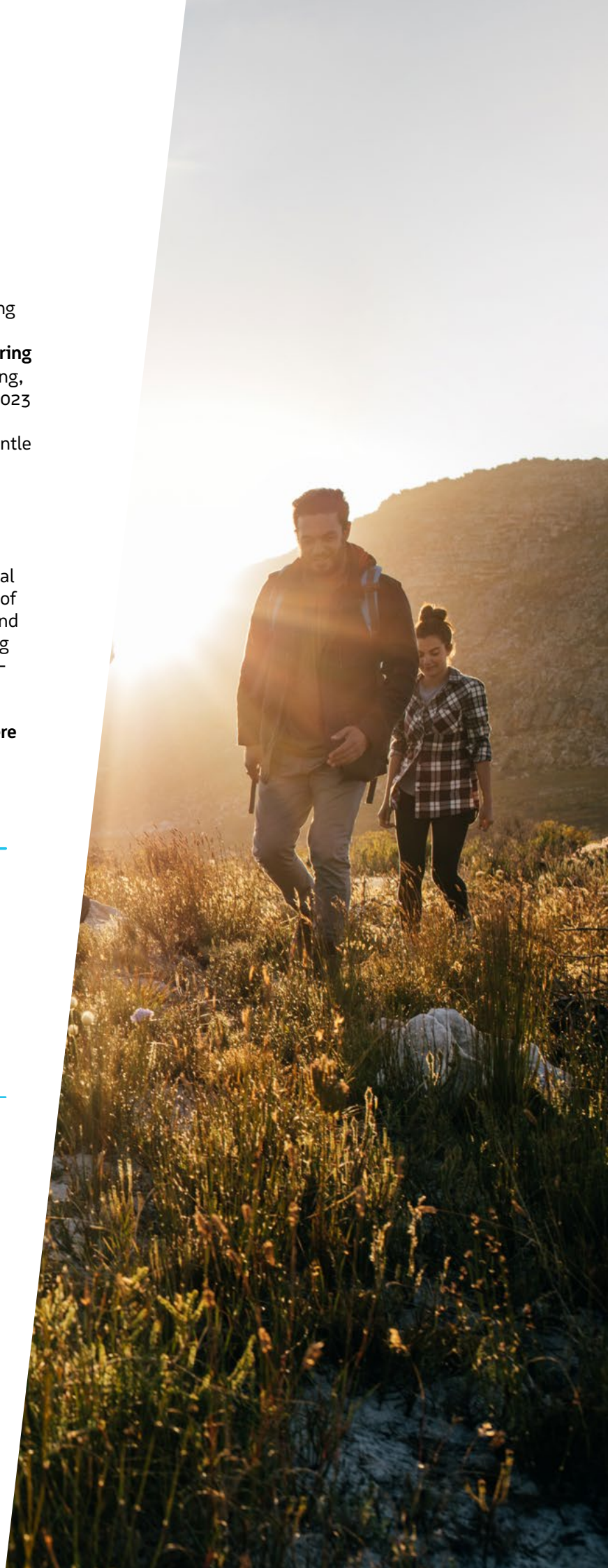
The Kastle Back to Work Barometer, an index measuring occupancy of over 2,600 buildings in 138 US cities, indicates that **workplace attendance is currently hovering around 50%**[53]. Given the new normal of remote working, the fact that office space in US cities as of mid-June 2023 is only half occupied should be expected, although in June 2022 the level was 40%, possibly indicating a gentle drift back to work.

This could be because **urban areas have become more enticing to workers in the interim**, thanks to the espousal of 'chrono-urbanistic' ideology: that the attractiveness of living in cities is inversely proportional to the time taken to travel within them. The adoption of '15 minute city' components – mixed-use buildings and recreational spaces, easily accessed by walking, cycling and other sustainable, affordable means of transport – may already be drawing people back to cities.

This trend may be negated, however, in **locations where housing and childcare costs have risen substantially**, propelling families from urban neighborhoods and threatening social mobility and cultural vibrancy.

"Greater provision of social housing, subsidized childcare programs, recreation facilities and seating areas for resting elders may help to stem the flow of departing families."

In a recent Financial Times article, *A city without children*[54], Emma Jacobs highlighted the 7.6% decrease in school pupil numbers across London between 2022 and 2023, citing similar issues in Seattle, Hong Kong, and Tokyo. Accommodating a range of ages at varying socio-economic levels rather than just wealthy, agile adults "radically expands what designing a good city means and allows a more diverse population to live, work and play there." (Alexandra Lange, The Design of Childhood[55]). Greater provision of social housing, subsidized childcare programs, recreation facilities and seating areas for resting elders may help to stem the flow of departing families.



3. Capital Markets

3.1 Recognizing the Need for Reshoring

To Achieve Sustainable Supply Chains, How can Governments Help Identify where Reshoring is Necessary?

Reshoring involves bringing supply chain components as close as possible to markets and consumers, minimizing freight transport costs and environmental damage. Localized adverse conditions due to geopolitics (military tension, conflict), cyberattacks, and recurring extreme climate events (hurricanes, droughts, floods, wildfires) present risks to supply chains. All this makes the relocation of assets from affected areas advisable.

Shorter supply chains are more sustainable because brief journeys between neighboring countries – as opposed to lengthy voyages via trans-global routes – use less fuel, create fewer emissions, and are less prone to obstructions that cause costly delays. Reshored companies can also boost local economies via multiplier effects from the simultaneous re-establishment of associated suppliers and the spending power – and tax revenues – of their employees.

Governments may choose to promote and incentivize reshoring to strengthen supply chains and defend certain areas of national commerce. They may also wish to leverage the intrinsic value of nationally made products to gain political capital: within certain cost parameters, consumers often prefer locally produced goods that support local employment and prosperity and consume less fuel in distribution journeys.

In the 2012 American election, Barack Obama highlighted the **global dominance of Chinese manufacturing,** the 'Tilt to Asia', at the expense of US jobs and commerce. China's receptiveness to foreign investment after it joined the World Trade Organization in 2001 had made it the most significant hub of globalization. By 2021 it had become the world's largest exporter[56].

As a result, however, of China's reducing cost advantages, accelerated by Zero Covid policies in 2021-22 that saw ports and sectors of society shut down, and loose intellectual property laws, other countries have become more attractive to investors. This has been highlighted in reports issued by manufacturing and supply chain research bodies such as America's Reshoring Institute[57].

This not-for-profit organization, partnering with 14 US universities, undertakes surveys and provides affordable advice to businesses considering re- or near-shoring. By identifying newer, cost-competitive zones, such as those in Costa Rica, central Mexico, India and Vietnam, featured in its 2022 report comparing global labor rates, it also provides input to economic growth legislation.

Deciding how best to leave China and set up in the US or any other country is a complex process. But the Institute has devised a methodology for establishing an organization's potential for reshoring:

- Evaluate the true costs of reshoring using a total cost of ownership model, which can be downloaded from the web and customized for specific businesses
- Take advice from field service representatives: how are the products developing in the market; what are the new features that customers want?
- Survey the market to ascertain costs, with a view to engineering out as many as possible; automate and streamline manufacturing processes make products more price competitive
- Decide whether to keep inventory; examine warehousing options.

If a company finds the costs of moving back to its country of origin too high, it might consider a 'China + 1' or 'China + 2' strategy: selecting additional, nearer countries in which to establish footholds. Industries with high manufacturing content currently tend to favor India, Bangladesh, and Costa Rica; those that can automate have more location options.

Some returning companies find that previous local suppliers had moved to China themselves or were no longer in business. **There are organizations that offer comprehensive, accessible lists of alternative suppliers.** The Reshoring Institute can help to re-establish or initiate entirely new supply options, although restructuring a supply base can take up to two years.

Seeking to shorten long, risk-prone supply chains, governments are increasingly issuing legislation that promotes trade between contiguous countries. For example, the US - Mexico - Canada Agreement (USMCA) entered into force in mid-2020, replacing the North American Free Trade Agreement (NAFTA).

The USMCA was conceived to reduce the costs and administrative burden of cross-border transactions, support mutually beneficial trade between the signatory parties, and promote freer markets and fairer trade. It has encouraged growth in Mexico because goods produced there can enter the US duty free and are driven across the border rather than being shipped and laboriously unloaded[58].

3.2 Capital Decisions

How can Governments Identify the Sources of Capital to Achieve Reshoring Through Either Government or Private Capital?

Having identified where re- or near-shoring may be advisable, preferable, or politically expedient, governments can assess the various sources of capital available to finance their goals. Taxation revenue aside, these include:

1. **Government bonds:** providing investors with relatively safe havens for their funds in periods of stock market upheaval

2. **Public-Private Partnership (PPP),** e.g. funding of London's Elizabeth Line, linking central London stations with airports, cultural hotspots and commercial hubs. A package was brokered between the government, Transport for London, and the city's business community, the latter paying 40% of the £19bn bill in pursuit of economic benefits from better connectivity, more predictable journeys and increased public transport[59].

3. **Sponsorship:** e.g. Emirates Airline's £36mn funding, via a ten-year branding contract, of over half the cost of the East London cable car, a direct link between the O2 Arena in Greenwich and the ExCel Exhibition Centre[60].

4. **Foreign direct investment (FDI):** incentivized by measures such as tax breaks and subsidized rents. Key elements of a beneficial FDI strategy include:

    - **Diversifying partners** by defining a regional integration agenda with neighboring/near/allied countries and paying attention to emerging partners
    - **Exploring options in new economic activities** such as cultural industries/technology start ups
    - **Integrating FDI into the national development strategy,** as well as defining tools to tap into the potential of diaspora and incentivizing new forms of investment beyond manufacturing built around low labor costs.
    - For example, as part of **Malaysia's development strategy**[61] the Investment Development Authority offers two main incentives packages: Pioneer status, providing income tax exemption of 70% of statutory income for five years, and the Investment Tax Allowance equating to 60% on capital expenditure incurred within five years from the first qualifying spend. Both can be extended by up to 100% and 10 years if the company undertakes strategic activities such as automation, value creation from palm oil biomass and green technology.

5. **Initial Public Offering (IPO):** in 2006, more than 10 million Saudis applied for shares in Emaar Economic City (EEC), master developer for King Abdullah Economic City, a $27 billion privately financed, integrated commercial, residential and tourism special economic zone. More than SR7 billion was subscribed for the SR2.55 billion issue for 30% of the company offered to the public[62].

Determining which of the above would be most suitable depends on time-specific factors including prevailing macro- and micro-economic conditions and political/geopolitical expediency.

About KPMG Lower Gulf

For about 50 years, KPMG Lower Gulf Limited has been providing audit, tax and advisory services to a broad range of domestic and international, public and private sector clients across all major aspects of business and the economy in the United Arab Emirates and in the Sultanate of Oman. We work alongside our clients by building trust, mitigating risks and identifying business opportunities.

KPMG Lower Gulf is part of KPMG International Cooperative's global network of professional member firms. The KPMG network includes approximately 265,000 professionals in over 143 countries. KPMG in the UAE and Oman is well connected with its global member network and combines its local knowledge with international expertise, providing the sector and specialist skills required by our clients.

KPMG is widely represented in the Middle East: along with offices in the UAE and Oman, the firm operates in Saudi Arabia, Bahrain, Kuwait, Qatar, Egypt, Jordan, Lebanon, Palestine and Iraq. Established in 1973, the Lower Gulf firm now employs approximately 1,730 people, including 166 partners and directors across the UAE and Oman.

As we continue to grow, we aim to evolve and progress, striving for the highest levels of public trust in our work. Our values are: **Integrity:** We do what is right; **Excellence:** We never stop learning and improving; **Courage:** We think and act boldly; **Together:** We respect each other and draw strength from our differences; **For Better:** We do what matters.

To meet the changing needs of our clients, we have adopted an approach aligned with our global purpose: Inspiring Confidence, Empowering Change.

Our KPMG IMPACT initiative aims to help clients future-proof their businesses amid times of increasing focus towards issues such as climate change and social inequality. The goal is to help them achieve success across 17 major Sustainable Development Goals (SDGs) and become more resilient and socially conscious.

Our three pillars – **exceptional quality of service, an unwavering commitment to the public interest, and building empowered teams** – are the foundation of our firm. Over the coming decades, we commit to lending our support to the UAE's journey as it goes from strength to strength: together, for better.

Acknowledgements

This report was written and compiled by the KPMG Centre of Excellence for Infrastructure and Cities (Toronto) and KPMG Lower Gulf, including Fiona Paterson and Jonathan Duff, who also project managed and edited it.

The authors gratefully acknowledge the individuals who contributed their time, expertise, and insight to the report.

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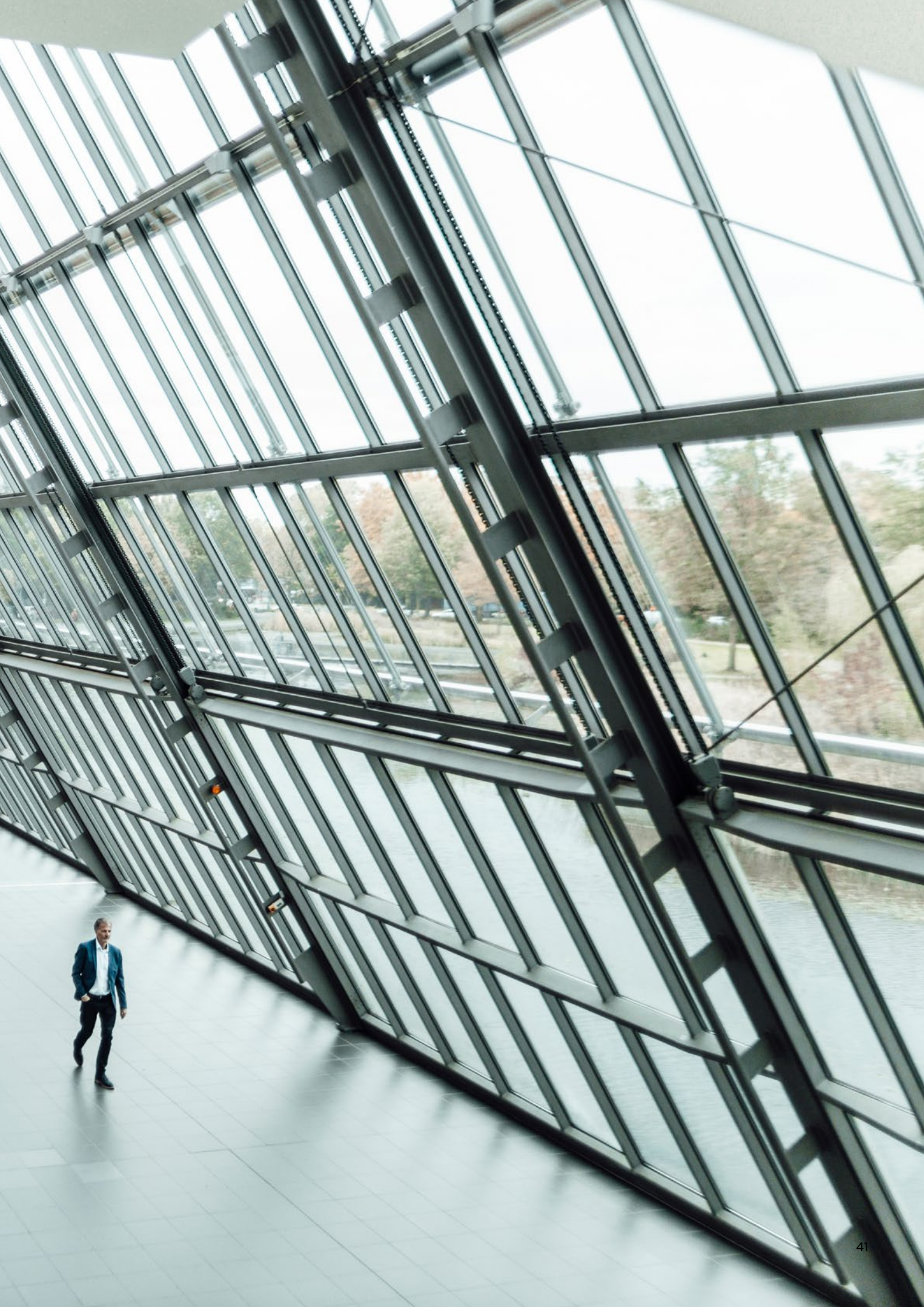

Sources

1. https://www.fastcompany.com/90761942/forget-returning-to-the-office-the-future-of-cities-lies-in-vibrant-civic-spaces
2. https://www.politico.eu/wp-content/uploads/2017/07/CulturalCreativeCitiesIndex.pdf
3. https://www.economist.com/culture/2023/07/06/governments-are-using-culture-to-spur-economic-regeneration
4. https://www.brookings.edu/articles/seven-steps-build-reputation-visibility-for-competitiveness/
5. https://www.khtt.net/en/page/17651/tasmena
6. https://www.bbc.com/news/world-europe-65107405.amp
7. https://theconversation.com/amp/rescaling-through-city-branding-the-case-of-amsterdam-71956
8. https://www.moreno-web.net/english-carlos-moreno/
9. https://www.ft.com/content/8fbad76c-6705-43d8-b57e-292ee3563539
10. https://www.un.org/development/desa/en/news/population/2018-revision-of-world-urbanization-prospects.html
11. https://www.c40.org/about-c40/
12. https://www.london.gov.uk/who-we-are/city-halls-partners/london-sustainable-development-commission-lsdc/londons-just-transition#lsdc-report-londons-just-transition-181265-title
13. https://netzerocities.eu
14. https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/eu-missions-horizon-europe/climate-neutral-and-smart-cities_en#:~:text=EU%20missions%20are%20commitments%20to,ensuring%20soil%20health%20and%20food
15. https://www.fourthdoor.co.uk/unstructured/unstructured%2010/10.3.php
16. https://logicmodel.extension.wisc.edu/files/2022/06/Mapping-Assets.pdf)
17. https://www.ura.gov.sg/Corporate
18. https://www.landsd.gov.hk/doc/en/smo/fig/Development%20of%20the%203D%20Digital%20Map%20in%20Hong%20Kong%20(11201).pdf
19. https://www.visitlondon.com/traveller-information/getting-around-london/congestion-charge
20. https://www.govtech.com/dc/articles/how-cities-are-integrating-rideshare-and-public-transportation.html
21. https://www.thestatesman.com/india/5000-cctv-cameras-installed-in-16-cities-of-uttar-pradesh-1503138588.html
22. https://www.electropages.com/blog/2022/02/australian-garbage-trucks-test-smart-sensors-improved-road-repairs
23. https://site.colu.com/belfast_coin
24. https://en.unesco.org/futuresliteracy/about
25. https://www.theplacebureau.com/insight/place-futures-why-collective-imagination-is-2023s-superpower/
26. https://www.lunduniversity.lu.se/lup/publication/ed383895-e984-4aef-ba71-5b883147c81c
27. https://www.researchgate.net/publication/334806733_A_structured_method_for_smart_city_project_selection
28. https://www.mediamatic.net/en/page/229716/new-songdo-city-in-a-box
29. http://www.newtowninstitute.org/spip.php?article1078
30. https://www.sandiegouniontribune.com/opinion/editorials/story/2023-03-05/san-diego-police-surveillance-cameras-license-plate-readers
31. https://m.pulsenews.co.kr/view.php?year=2022&no=283109
32. https://www.vice.com/en/article/m7bbkv/biden-administration-tells-car-companies-to-ignore-right-to-repair-law-people-overwhelmingly-voted-for
33. https://open.spotify.com/track/4vkkfdYtF1McQyvtthpe8z
34. https://citiesfordigitalrights.org/thecoalition#:~:text=The%20Cities%20Coalition%20for%20Digital,digital%20rights%20based%20policy%2Dmaking.
35. https://amsterdamsmartcity.com/about
36. https://itif.org/publications/2023/03/06/balancing-privacy-and-innovation-in-smart-cities-and-communities/
37. https://www.theguardian.com/news/2018/mar/17/cambridge-analytica-facebook-influence-us-election

38. https://www.thestar.com/news/atkinsonseries/2021/01/14/how-can-we-be-assured-smart-city-technology-will-do-more-good-than-harm-it-all-comes-down-to-governance.html

39. https://www.octanner.com/white-papers/5-culture-trends-for-2023?utm_source=google&utm_medium=paid-search&utm_campaign=eur.2023.white-paper.culturetrends-23&utm_source=google&utm_medium=cpc&utm_campaign=20317735808&utm_ad_group=153706817994&utm_keyword=employee%20appreciation&utm_creative=663838525332&utm_matchtype=p&utm_network=g&gad=1&gclid=CjwKCAjw5MOlBhBTEiwAAJ8e1ri2PDm0mGemLFqYhZr39whCjwebeW7Ici9Z9SDgwprBwqn4UA0CBxoCCAQQAvD_BwE

40. https://www.thestar.com/amp/business/2022/12/04/food-delivery-robots-hit-canadian-sidewalks-but-many-challenges-delay-mass-adoption.html

41. https://www.urbanairmobilitynews.com/express-delivery/iceland-leading-europe-in-drone-delivery-market/

42. https://www.oxfordeconomics.com/resource/surviving-and-thriving/

43. https://www.forbes.com/sites/sap/2023/04/24/5-supply-chain-strategies-to-avoid-risk-and-enable-sustainability/?sh=490b9e61171f

44. https://www.moec.gov.ae/en/free-zones

45. https://foodsecurity.gov.ae/en/download_report/jgSIGpzpofgXCw2VSCSC9hvhmAdDNPoc5I1TWqAW.pdf

46. https://hbr.org/2012/04/the-new-science-of-building-great-teams

47. https://hbr.org/2017/04/a-face-to-face-request-is-34-times-more-successful-than-an-email

48. https://www.ahla.com/sites/default/files/Economic%20Signifcance%20of%20Meetings.pdf

49. https://about.gitlab.com/company/culture/all-remote/hybrid-remote/

50. https://area2071.ae

51. https://www.nlc.org/resource/state-of-the-cities-2021/

52. https://www.fastcompany.com/90761942/forget-returning-to-the-office-the-future-of-cities-lies-in-vibrant-civic-spaces

53. https://www.kastle.com/safety-wellness/getting-america-back-to-work/

54. https://www.ft.com/content/31d9e4b7-a0d8-4316-bd42-9b097c0cb3a0

55. https://www.bloomsbury.com/us/design-of-childhood-9781632866370/

56. https://atlas.cid.harvard.edu/explore/stack?country=43&year=2020&queryLevel=location&startYear=1995&productClass=HS&product=undefined&target=Product&partner=undefined

57. https://reshoringinstitute.org/

58. https://www.trade.gov/usmca#:~:text=United%20States%2DMexico%2DCanada%20Agreement,economic%20growth%20in%20North%20America.

59. https://www.onlondon.co.uk/john-dickie-london-has-paid-for-the-elizabeth-line-the-whole-country-is-already-benefiting-from-it/amp/

60. https://www.standard.co.uk/hp/front/emirates-buys-place-on-tube-map-in-ps36m-cable-car-deal-6451392.html

61. https://read.oecd-ilibrary.org/development/production-transformation-policy-review-of-the-dominican-republic_5a95b3b1-en#page19

62. https://www.euromoney.com/article/b1321yf05nt2md/saudi-economic-city-passes-the-ipo-test

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