

SCENARIOS FOR CITIES OF THE FUTURE

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EXECUTIVE SUMMARY - PROJECT OVERVIEW



Context

The Foresight Academy is regularly engaged in in-depth explorations of critical themes through its 'hot topic spaces' (HTS). One HTS Foresight Academy currently focuses on is "Cities of the Future".

The objective is to uncover transformative trends and challenges likely to influence different aspects of urban live such as living, mobility and infrastructure in the next 10 years.

Using a foresight-based approach, the project aims to collaboratively develop alternative future scenarios grounded in key trends and uncertainties. These scenarios serve to derive actionable implications for focal areas of Foresight Academy and its partners.

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Approach

The project approach was split into 3 phases: research, trend analysis, and scenario development.

- (1) During the **research phase**, trends and megashifts across STEEP categories were explored based on desk research and 4 expert interviews. This resulted in 11 fundamental megashifts and 50 trends driving cities of the future (see appendix 1).
- (2) As part of the **trend analysis**, all 50 trends were assessed in terms of their impact and uncertainty to prioritize key trends for developing alternative scenarios for cities of the future. Subsequently, future development paths (projections) were defined for key trends and megashifts. As preparation for the scenario workshop, scenario cores, i.e., starting points of different scenarios were defined based on the 11 megashifts (see appendix 2).
- (3) The **scenario development** started with a collaborative workshop in February during which pre-defined scenario cores were enriched with trend projections. Ultimately, the scenarios were documented incl. visualizations, a detailed storyline and timeline, implications for the focal areas, current facts and manifestations, and a city scoring (see p. 8-36 & appendix 3).



Results

The project resulted in four alternative scenarios that illustrate potential **futures for cities in 2035 worldwide:**

- 1. Citizen City: The collaborative urban revolution
- 2. Divided Metropolis: City under corporate dominance
- 3. Nature first: Al-governed ecological prosperity
- 4. Urban Decline: Life in the abandoned city

The scenarios are **not predictions** but highlight diverse pathways cities could follow, representing a subset of many plausible futures which can also co-exist.

Strategic Use: The scenarios aim to stimulate innovation and inspire strategic thinking for urban planning, offering insights for long-term resilience and adaptation.

EXECUTIVE SUMMARY - SCENARIO FINDINGS

The four alternative scenarios are based on different possible developments of key influencing factors. In each of the scenarios, a subset of the selected influencing factors mainly shapes the direction of the scenarios. For a detailed overview of the most influential developments, have a look at Slide 11, and read the full scenario descriptions on Slide 12-36.

Scenario 1: Citizen City - The collaborative urban revolution

The city thrives as a human-first, citizen-governed ecosystem where public-private collaboration, participatory digital governance, and inclusive design drive innovation and resilience. Daily life is enhanced by Al-optimized infrastructure, sustainable mobility, and vibrant community spaces that reflect cultural diversity and local engagement. While sustainability is a core ambition, decisions often prioritize social well-being and equity, occasionally challenging environmental goals in favor of human-centered progress.

Scenario 2: Divided Metropolis - City under corporate dominance

The city is shaped by corporate dominance, where access to technology, services, and quality of life is determined by wealth.

Multinational companies control essential infrastructure and urban governance, creating a hyper-efficient but deeply unequal environment.

While elite districts flourish with personalized Al services and resilient systems, the majority face exclusion, economic instability, and reliance on informal networks to survive.

Scenario 3: Nature first - Al-governed ecological prosperity

The city functions as a regenerative ecosystem where Al-driven governance and ecological design ensure net-positive impact on the environment. Technology and corporate innovation are fully aligned with nature, enabling self-sufficient, circular economies and clean, resilient infrastructure. While life is efficient, clean, and equitable in resource access, democratic participation is limited, as Al systems balance human needs with strict ecological imperatives.

Scenario 4: Urban Decline - Life in the abandoned city

The city is in deep decline - marked by economic collapse, institutional failure, and environmental degradation. With corporations gone and governments absent, residents rely on informal economies, makeshift infrastructure, and grassroots survival strategies. A fragmented society clings to isolated pockets of creativity and mutual aid, while criminal groups and corruption fill the governance vacuum.



CONTENT

- Project overview
- 2 Four scenarios for cities of the future
- 3 Appendix 1: Trend report
- 4 Appendix 2: Key trends & scenario cores
- 5 Appendix 3: Scenario workshop
- 6 Appendix 4: Sources



PROJECT GOALS AND OUTCOMES

Project goals

- Uncover transformative trends and challenges that influence different aspects of urban live such as living, mobility and infrastructure in the next 10 years
- Collaboratively design alternative scenarios for cities of the future
- Synthesize scenarios into an appealing, engaging, fact & figures backed documentation, as a reference to guide the Foresight Academy and its partners as they explore next steps

Project outcomes

Trend report



See appendix 1, p. 37-89

4 alternative scenarios



See p. 8-36 (workshop details in appendix 3, p. 121-127)

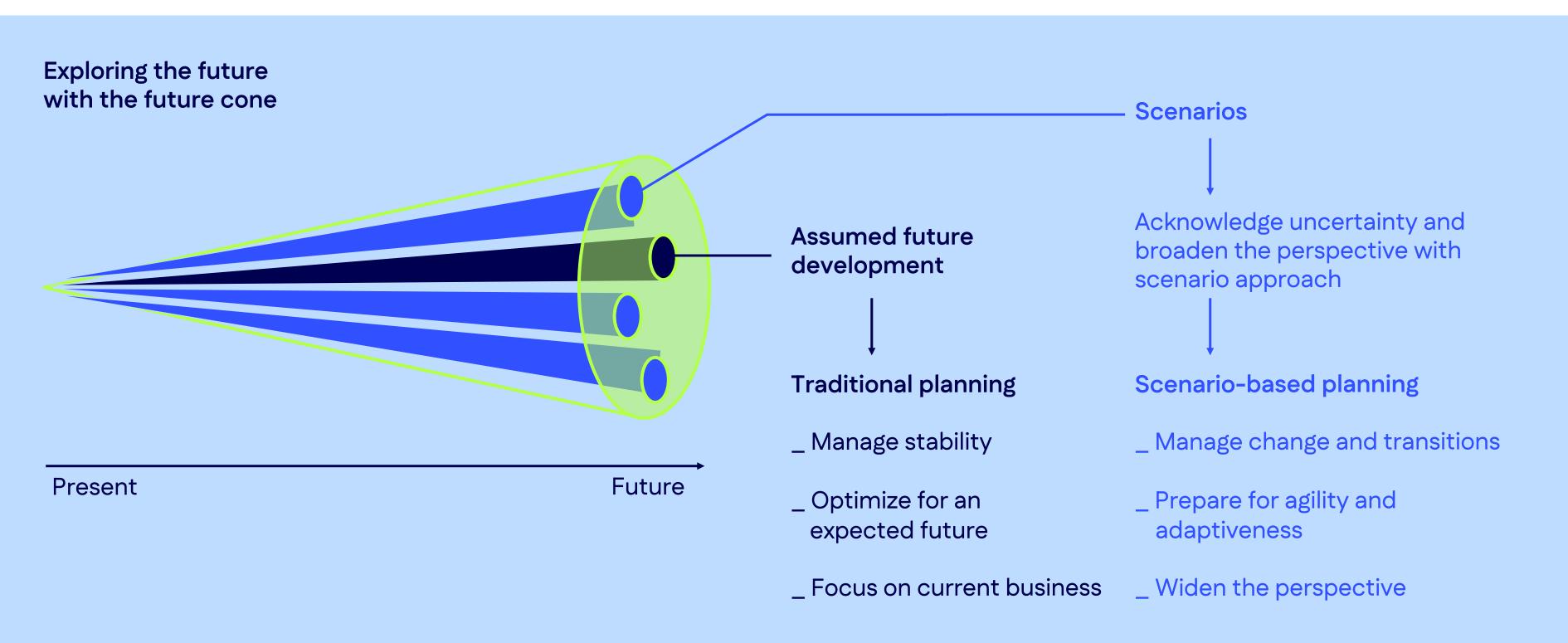
Key trends & scenario cores



See appendix 2, p. 90-120

WHY DEVELOPING FUTURE SCENARIOS

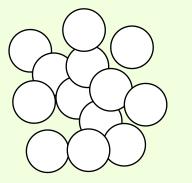
Scenarios widen the perspective, prepare for different possible futures and thereby lead us towards a robust future strategy.



SCENARIO DEVELOPMENT PROCESS

Research

1.1 Research



Broad STEEP-scan (<u>S</u>ocial, <u>T</u>echnological, <u>E</u>conomical, Ecological, Political)

Research and interviews, review of existing internal and external resources

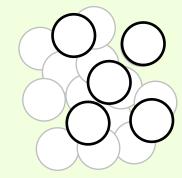
→ Trend longlist

Trend Analysis

2.1 Prioritization

2.2 Projections

2.3 Scenario cores



Reducing complexity and prioritizing trends for scenario development through impact-uncertainty-analysis

Survey based time to

uncertainty assessment

impact, impact, and

→ Key trends

Definition of alternative future development paths for the key trends

Develop after selection of key uncertainties and when building the scenarios

→ Key trend projections







Definition of scenario cores based on identified megashifts that fundamentally impact the future

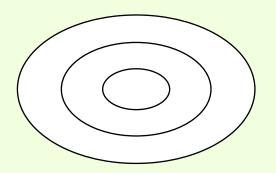
Develop after identification of megashifts across STEEP categories

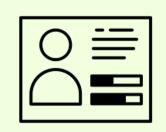
→ 4 scenario cores

Alternative Future Scenarios

3.1 Scenario development

3.2 Scenario documentation





Development of detailed, alternative future scenarios

Development of a documentation incl. visualisations and detailed storyline

Development of scenarios in larger group workshop, further analysis after

→ 4 detailed scenarios

Making the scenarios more tangible, relatable and easier to share

→ Detailed scenario descriptions & visualisations

DISCLAIMER

The following four scenarios illustrate potential futures for cities worldwide, grounded in extensive trend research, expert insights and developed using foresight methodologies. These scenarios are not predictions, but exploratory frameworks that highlight diverse pathways cities could follow, shaped by different drivers such as technological advancements, societal changes, environmental factors, and governance models.

HOW TO USE THE SCENARIOS

The four scenarios can exist in parallel, representing a spectrum of future possibilities. They are designed to stimulate reflection on different urban futures, acknowledging that real-world outcomes may involve elements from each.

These scenarios are primarily focused on medium to large cities, excluding smaller towns and rural areas.

Please see the next slide for details regarding the different elements of the scenario documentation.

KEY CONSIDERATIONS

- ☐ Global vs. Regional: While the scenarios offer a global perspective, local conditions and regional dynamics will influence how cities evolve.
- □ Selection of Possibilities: These four scenarios are a subset of many possible futures; numerous other outcomes exist that are not covered here.
- □ Strategic Use: The scenarios aim to inspire strategic thinking for urban planning, offering insights for long-term resilience and adaptation.

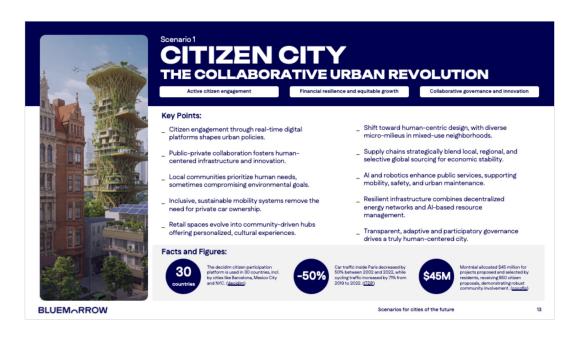
These scenarios are tools for understanding uncertainty and preparing for diverse urban futures.



SCENARIO DOCUMENTATION

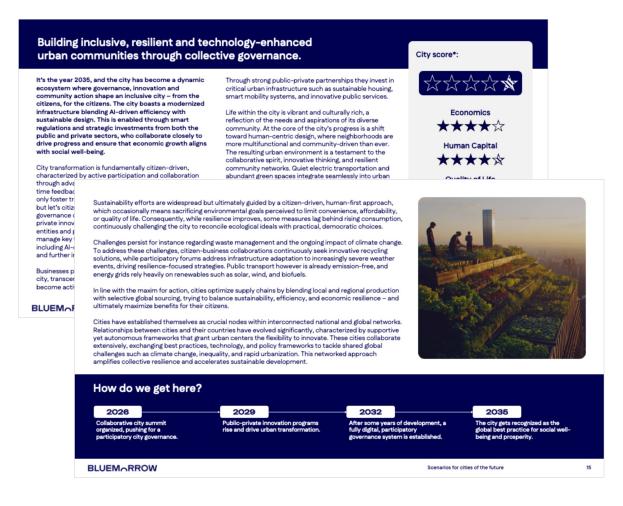
Page 1: Scenario overview:

- _ 3 key factors that drive the scenario
- _ 10 bullet points summarizing main developments
- _ 3 facts and figures from today that indicate movements towards the scenario



Page 2&3: Scenario storyline

- _ Detailed scenario storyline
- Indicative timeline how the scenario could arise from today
- _ Indicative scenario scoring based on Oxford Global City Index



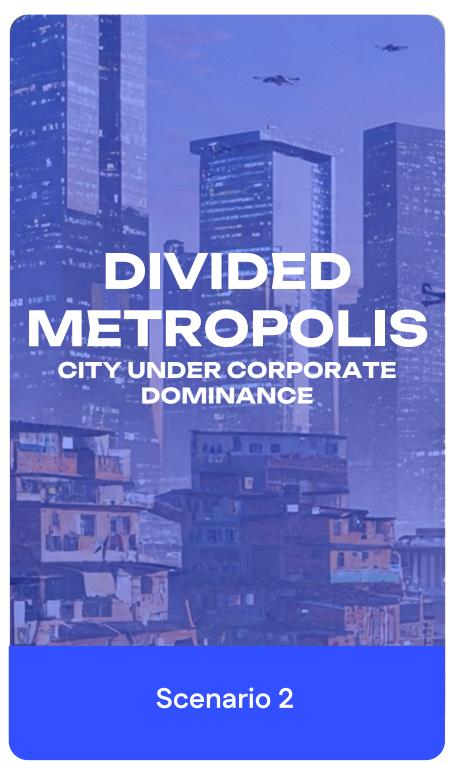
Page 4&5: Scenario details

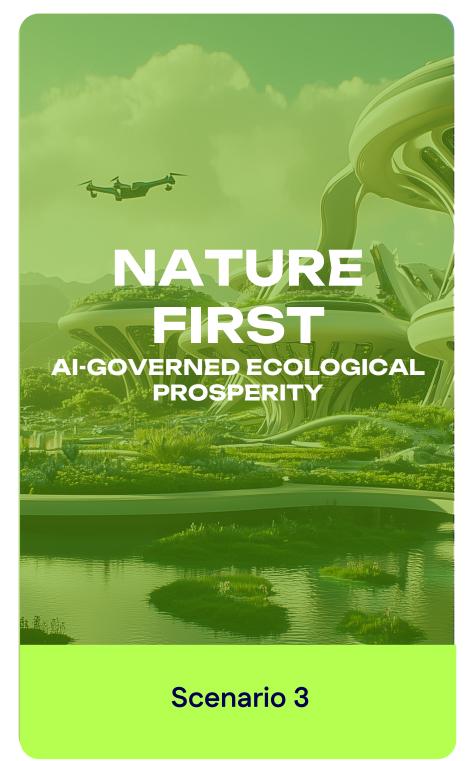
- _ Sub-segment for each focus area
- Examples from cities today that reflect the scenario (in parts)
- _ Thought-starter questions

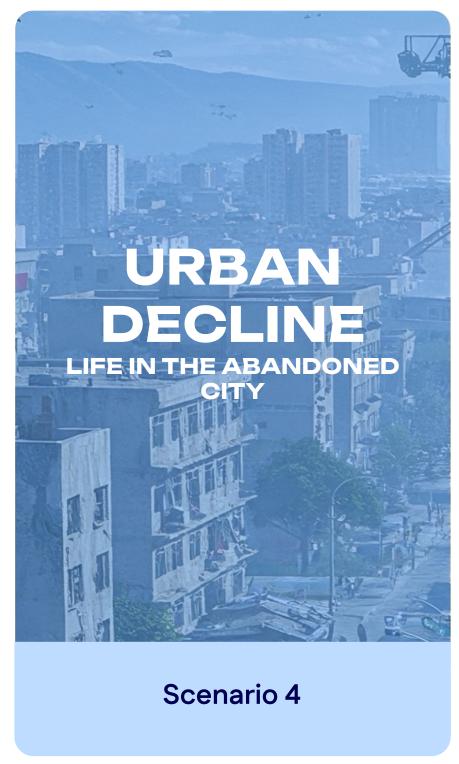


ALTERNATIVE SCENARIOS FOR 2035 | CITIES OF THE FUTURE









KEY DEVELOPMENTS THAT SHAPE SCENARIOS

Key developments to monitor present a mix of trends and megashifts with the strongest influence on any of the scenarios.

Challenges of Demographic Change
Smart City Technologies and Al
Modernization of Infrastructure
Urban Wealth Inequalities
Companies Shaping Cities
Rise of Public-Private Partnerships
Urban Climate Resilience
Sustainable City Development
Urban biodiversity conservation
Co-creation of city governance
City's economic strength
Innovation friendly policies / incentives
Level of regional / global collaboration

SCENARIO 1 CITIZEN CITY	SCENARIO 2 DIVIDED METROPOLIS	SCENARIO 3 NATURE FIRST	SCENARIO 4 URBAN DECLINE
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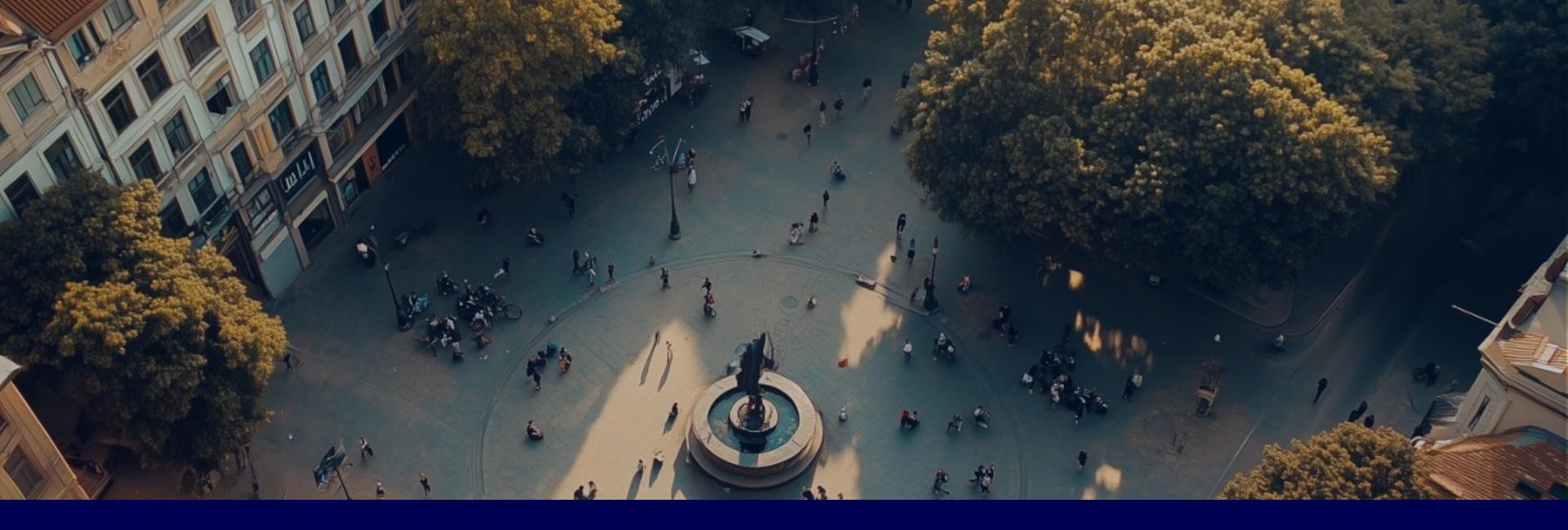






Strong decrease

Strongest influence on the scenario



CITIZEN CITY THE COLLABORATIVE URBAN REVOLUTION



CITIZEN CITY THE COLLABORATIVE URBAN REVOLUTION

Active citizen engagement

Financial resilience and equitable growth

Collaborative governance and innovation

Key Points:

- Citizen engagement through real-time digital platforms shapes urban policies.
- Public-private collaboration fosters humancentered infrastructure and innovation.
- Local communities prioritize human needs, sometimes compromising environmental goals.
- _ Inclusive, sustainable mobility systems remove the need for private car ownership.
- Retail spaces evolve into community-driven hubs offering personalized, cultural experiences.

- Shift toward human-centric design, with diverse micro-milieus in mixed-use neighborhoods.
- Supply chains strategically blend local, regional, and selective global sourcing for economic stability.
- Al and robotics enhance public services, supporting mobility, safety, and urban maintenance.
- Resilient infrastructure combines decentralized energy networks and Al-based resource management.
- _ Transparent, adaptive and participatory governance drives a truly human-centered city.

Facts and Figures:

30 countries

The decidim citizen participation platform is used in 30 countries, incl. by cities like Barcelona, Mexico City and NYC. (decidim)



Car traffic inside Paris decreased by 50% between 2002 and 2022, while cycling traffic increased by 71% from 2019 to 2022. (ITDP)



Montréal allocated \$45 million for projects proposed and selected by residents, receiving 850 citizen proposals, demonstrating robust community involvement. (cocoflo)

Building inclusive, resilient and technology-enhanced urban communities through collective governance.

It's the year 2035, and the city has become a dynamic ecosystem where governance, innovation and community action shape an inclusive city – from the citizens, for the citizens. The city boasts a modernized infrastructure blending Al-driven efficiency with sustainable design. This is enabled through smart regulations and strategic investments from both the public and private sectors, who collaborate closely to drive progress and ensure that economic growth aligns with social well-being.

City transformation is fundamentally citizen-driven, characterized by active participation and collaboration through advanced digital platforms that facilitate real-time feedback and democratic engagement. This doesn't only foster transparency and trust in public institutions, but let's citizens directly influence city planning and governance decisions. To ensure a balance between private innovation and public accountability, corporate entities and public bodies collaboratively own and manage key technological assets and Al infrastructure, including Al-driven systems that combat misinformation and further increase trust in the process.

Businesses play an increasingly pivotal role in shaping the city, transcending traditional economic functions to become active partners in societal development.

Through strong public-private partnerships they invest in critical urban infrastructure such as sustainable housing, smart mobility systems, and innovative public services.

Life within the city is vibrant and culturally rich, a reflection of the needs and aspirations of its diverse community. At the core of the city's progress is a shift toward human-centric design, where neighborhoods are more multifunctional and community-driven than ever. The resulting urban environment is a testament to the collaborative spirit, innovative thinking, and resilient community networks. Quiet electric transportation and abundant green spaces integrate seamlessly into urban architecture.

Skyscrapers harmoniously blend local cultural heritage with global technological advancements, and efficient underground logistics networks minimize congestion, to create vibrant and accessible public spaces for community interaction. While technology optimizes daily life, its adoption varies across sectors, requiring participatory decision–making to balance innovation with affordability and inclusivity.

City score*:



Economics



Human Capital



Quality of Life



Environment



Governance



*See p. 36 for detailed reasoning for the scoring

Sustainability efforts are widespread but ultimately guided by a citizen-driven, human-first approach, which occasionally means sacrificing environmental goals perceived to limit convenience, affordability, or quality of life. Consequently, while resilience improves, some measures lag behind rising consumption, continuously challenging the city to reconcile ecological ideals with practical, democratic choices.

Challenges persist for instance regarding waste management and the ongoing impact of climate change. To address these challenges, citizen-business collaborations continuously seek innovative recycling solutions, while participatory forums address infrastructure adaptation to increasingly severe weather events, driving resilience-focused strategies. Public transport however is already emission-free, and energy grids rely heavily on renewables such as solar, wind, and biofuels.

In line with the maxim for action, cities optimize supply chains by blending local and regional production with selective global sourcing, trying to balance sustainability, efficiency, and economic resilience – and ultimately maximize benefits for their citizens.

Cities have established themselves as crucial nodes within interconnected national and global networks. Relationships between cities and their countries have evolved significantly, characterized by supportive yet autonomous frameworks that grant urban centers the flexibility to innovate. These cities collaborate extensively, exchanging best practices, technology, and policy frameworks to tackle shared global challenges such as climate change, inequality, and rapid urbanization. This networked approach amplifies collective resilience and accelerates sustainable development.



How do we get here?

2026

Collaborative city summit organized, pushing for a participatory city governance.

2029

Public-private innovation programs rise and drive urban transformation.

2032

After some years of development, a fully digital, participatory governance system is established.

2035

The city gets recognized as the global best practice for social well-being and prosperity.

Society & Lifestyle

The city is a mosaic of cultures, backgrounds, and generations, where neighborhoods function as micromilieus, each fostering unique identities, traditions, and ways of life. These districts blend living, working, and social interaction, creating a network of interconnected but distinct communities. Daily life revolves around personal routines and communal gatherings—residents frequent the same cafés, engage in traditions, and shape public spaces. Technology enhances convenience but never replaces human connection. Luxury is redefined as wellbeing, time, and resilience, ensuring safety and meaningful urban experiences.

Mobility

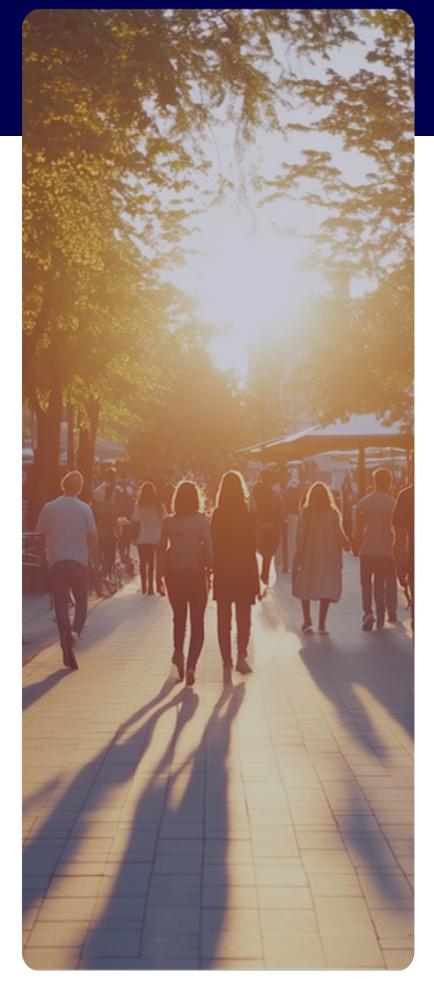
Mobility is seamless, inclusive, and highly sustainable. Aldriven transport networks, autonomous shuttles, and shared mobility hubs eliminate the need for private car ownership, prioritizing accessibility for all. Car-free zones enhance pedestrian life, fostering vibrant urban interactions. Public transit is not only free but financed through innovative models, ensuring affordability and equity. Streets transform into social spaces where walking, cycling, and spontaneous gatherings redefine city life.

Business & Retail

Commerce seamlessly blends with culture, transforming business districts into dynamic spaces that shift from work hubs by day to social hotspots by night. Local businesses thrive through curated retail experiences, offering expertise and personalized advice beyond simple transactions. Shopping is no longer just about acquiring goods but about connection—turning stores into places of discovery and engagement. People seek out familiar vendors—their trusted barista who knows their order, the local grocer who greets them by name—fostering a sense of belonging, loyalty, and community trust.

Construction & Architecture

Urban architecture harmonizes heritage with future-forward, sustainable designs by integrating modular, adaptable structures made from recyclable materials while also prioritizing the renovation and retrofitting of existing buildings enhancing efficiency for future generations. Mixed-use housing integrates residential, commercial, and community spaces, reinforcing accessibility and affordability. Businesses invest in coliving spaces for employees to foster the integration between work and home life. Green rooftops, shaded walkways, and integrated water systems combat climate extremes and supports both comfort and resilience.



Infrastructure & Energy

The city's infrastructure is intelligent, decentralized, and demand-driven. Smart grids balance energy efficiency with real-time needs, ensuring uninterrupted power supply from renewables like solar and wind. Homes and businesses act as energy producers, feeding surplus power into a shared urban grid. Public data hubs optimize traffic, water use, and digital connectivity, while Al-enhanced waste management improves efficiency but still struggles with rising consumption. Backup power systems and decentralized networks enhance resilience, ensuring urban stability against both environmental and cyber threats.

Legislation & Governance

Governance is transparent, data-driven, and highly adaptive. Decision-making occurs through decentralized, Al-enhanced platforms where citizens directly influence policies via referendums and digital consultations. Legislation prioritizes social equity, climate resilience, and balanced economic regulation, ensuring private innovation aligns with public needs. Cities operate within an autonomous but interconnected national framework, collaborating across borders to share policy innovations and solutions. Regulatory sandboxes allow experimental policies, ensuring that urban innovation remains both agile and accountable.



Examples of Today:



Copenhagen, Denmark

The Nordhavn district showcases the "five-minute city" concept, integrating car-free zones, diverse architecture, and green initiatives to create a pedestrian-friendly neighborhood. This design fosters community engagement and environmental sustainability. Link



Tartu, Estonia

The city's participatory budgeting empowers citizens to shape their urban environment, while digital governance enhances transparency. This fusion of heritage and forward-thinking initiatives positions Tartu as a model for sustainable urban development. <u>Link</u>



Medellin, Colombia

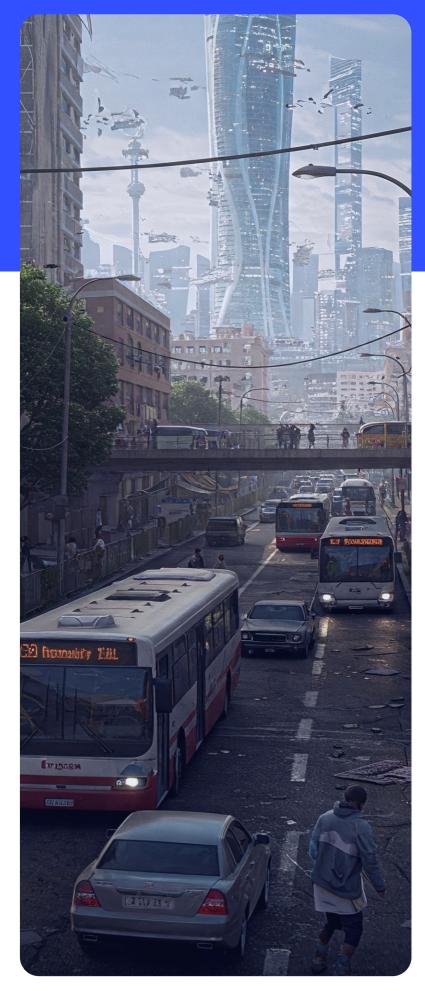
Despite it's troubled past, Medellin was awarded the World's Most Innovative City in 2013 and has since become a role model. It transformed through urban renewal projects focusing on advanced and accessible public transport and vibrant community spaces, various education and community initiatives. Link

Despite its challenges, the city flourishes through collaboration, adaptability, and shared vision. It is not a static ideal, but a constantly evolving system shaped by its people. Yet, questions remain:

How might we balance rapid innovation with inclusivity? Can democratic governance keep pace with Al-driven decision-making? And as cities become increasingly interconnected, will local identity be preserved or redefined? The future is driven by the choices, values, and collective action of those who call the city home.



DIVIDED METROPOLIS CITY UNDER CORPORATE DOMINANCE



DIVIDED METROPOLIS CITY UNDER CORPORATE DOMINANCE

Corporate dominance

Deepening social divide

Innovation for the privileged

Key Points:

- Corporate giants dominate urban life, overtaking roles traditionally held by governments.
- Economic opportunities and quality of life are determined strictly by purchasing power.
- Technological innovation advances rapidly, but only for those who can afford premium services.
- Lower-income citizens rely on informal networks due to limited access to essential services.
- Global corporations prioritize own supply chains, causing disruptions and instability for others.

- Privatized, subscription-based public services deepen existing inequalities and restrict accessibility.
- High-tech, exclusive neighborhoods contrast sharply with overcrowded, neglected urban outskirts.
- _ Transportation and mobility services become privileges reserved for wealthier residents.
- Disposable consumerism defines luxury lifestyles, informal economies sustain poorer communities.
- Corporate influence reshapes governance, reducing democratic participation and increasing social fragmentation.

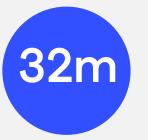
Facts and Figures:



State and local governments in the US spent at least \$30 billion a year on business tax incentives, with the majority going to a small portion of firms. (Princeton)



Cape Town reflects South Africa's extreme inequality, as the country ranks as the most unequal in the world with a Gini coefficient of 0.67 in 2018. (World Bank)



32 million households are expected to be living in gated communities in Indias top-50 cities in 2031, about 50% of all households in these cities. (redseer)

A city of progress racing into the future, but divided by power and privilege, leaving many behind.

By 2035, the city is profoundly shaped by three dominant forces: powerful corporate entities control daily life, economic status dictates access to opportunities, and technological advancement proceeds rapidly though selectively, benefiting primarily those who can afford it.

Life in the city becomes defined by stark contrasts, shaping residents' daily experiences based on their economic capabilities. Affluent citizens benefit from advanced, Al-enabled homes, luxury urban design, and secure public spaces that cater exclusively to their needs. Lower-income populations, however, rely heavily on informal networks, community solidarity, and provisional solutions to navigate daily life, continually challenged by limited resources and exclusion from opportunities. These divisions fuel both innovation and unrest, redefining urban realities as cities navigate an increasingly corporate-controlled future.

Tech giants now dominate critical urban services, including transportation, healthcare, energy, and security, and didn't waste any time to transform these sectors into profitable, subscription-based services accessible primarily to wealthier citizens. This extensive corporate oversight has created an advanced yet deeply inequitable urban environment.

Wealthy neighborhoods are vibrant symbols of corporate success, featuring meticulously planned, technologically advanced homes with Al-driven climate control, sustainable energy systems, and vertical gardens. High-income residents benefit from personalized digital services and enhanced quality of life, facilitated by sophisticated data analytics and surveillance technologies such as facial recognition and drone monitoring.

Life for the city's less affluent residents could not look more different. Socioeconomic inequalities widen dramatically, manifesting visibly in neglected neighborhoods marked by crumbling infrastructure, overcrowding, and inadequate public services. Essential amenities such as reliable energy, efficient waste management, and effective healthcare become luxuries many people can no longer afford. To make things worse, displacement of lower skilled workers by widespread Aldriven automation sharply increases employment insecurity for large parts of the city population.

As a result, marginalized communities experience persistent economic instability, social frustration, and escalating tensions, occasionally erupting into protests and unrest.

City score*:



Economics



Human Capital



Quality of Life



Environment



Governance



*See p. 36 for detailed reasoning for the scoring

Despite promises of sustainability, climate resilience efforts remain unevenly implemented. Wealthy areas enjoy high-tech infrastructure designed for climate resilience, while poorer communities face increased vulnerability to climate risks, lacking the resources to implement effective mitigation strategies. The urban landscape is defined by contrasts – luxury and innovation stand alongside hardship and exclusion – highlighting the profound influence of corporate interests in defining urban life.

In light of intensified global competition, cities and nations aggressively pursue corporate investments through deregulation, incentives, and favorable policies. In this context, multinational corporations, particularly tech giants, have significantly expanded their influence, overtaking many traditional roles formerly held by public institutions and governments. Cities increasingly operate as independent economic entities, negotiating directly with corporations for investments, jobs, and infrastructure development, effectively sidelining traditional national governance structures. The results are weaker protections for labor rights, environmental standards, and consumer privacy.

The urban economic environment reflects corporate dominance, with large companies shaping city economies according to their interests. Global monopolies, emerged through aggressive mergers and acquisitions, secure and prioritize their own supply chains, leveraging their scale and control, while smaller local businesses face disrupted or unreliable supply channels. Production and consumption are driven by digital platforms that privilege those who can pay for personalized and premium services, effectively excluding lower-income populations from participating meaningfully in the economy, exacerbating economic disparity.



How do we get here?

2026

City services get privatized due to budget constraints, shifting power to private companies. 2029

Companies in charge prioritize profit over inclusion, focusing on advancing the wealthy areas.

2032

Al and advanced technologies rise, taking over jobs across sectors.

2035

Crumbling poor neighbourhoods coexist with shiny gated communities.

Society & Lifestyle

The divide is not just physical—it shapes identities. The wealthy curate experiences in exclusive cultural hubs, traveling between premium districts without encountering the struggles of the city's majority. In contrast, lower-income groups rely on underground economies, informal education networks, and digital communities to sustain their lifestyles. Trust in institutions is replaced by reliance on peer-to-peer platforms for healthcare, job opportunities, and security. Many middle-class citizens adopt "nomadic urbanism," renting adaptive micro-homes and shifting between job markets to survive.

Mobility

Transportation is no longer about movement—it's about access. Corporate transport memberships determine who can use high-speed tunnels, aerial taxis, or smart corridors. The elite experience seamless mobility via Aloptimized routes that avoid congestion. Meanwhile, outdated transit lines serve the struggling masses, with intermittent service and dynamic pricing making even basic movement a challenge. Unauthorized ride-sharing networks emerge in neglected districts, while the ultrarich invest in underground personal hyperloop pods, never needing to set foot on public streets.

Business & Retail

Wealthy consumers enjoy hyper-personalized marketplaces, where algorithms ensure their every need is met before they even express it. Meanwhile, lower-income districts operate on decentralized trade networks, with second-hand goods, barter systems, and gray-market services thriving. Corporate monopolization is countered by underground resistance—anonymous commerce platforms and encrypted peer-to-peer transactions circumvent economic exclusion. Local economies adapt by offering modular, repairable products, while elite districts embrace "disposable luxury," where everything from clothing to furniture is replaced at a rapid pace.

Construction & Architecture

In elite districts, sleek skyscrapers boast modular designs, climate-controlled interiors, and lush rooftop gardens—symbols of prestige and power. Surveillance is built into every structure, ensuring control over movement.

Meanwhile, the outskirts sprawl with improvised, overcrowded housing. Adaptive living spaces emerge for a mobile workforce, while corporations gain control over critical infrastructure, "saving" flood-prone areas in exchange for unchecked influence.



Infrastructure & Energy

The city's infrastructure is a patchwork of innovation and neglect. Wealthy districts run on smart grids powered by renewable energy, while older neighborhoods struggle with outdated fossil-fuel systems. Private corporations dominate utilities, controlling water, waste, and electricity distribution with profit-driven efficiency. Energy trading platforms allow the affluent to buy and sell excess power, while lower-income areas face unreliable services. Disaster resilience is privatized, with premium protection plans available for those who can afford them.

Legislation & Governance

Governance is shaped by corporate influence and growing social divisions. Surveillance expands under the guise of public safety, yet crime in neglected areas continues to rise. Elections are won by the highest bidders, as wealthy candidates outspend rivals in massive campaigns. Al-driven decision-making accelerates innovation, but with minimal oversight, tech giants gain unchecked power. While megacities and corporations form unofficial alliances to shape global policy, the average citizen finds it harder to influence decisions that shape their daily lives.



Examples of Today:



Mumbai, India

Being India's financial hub, Mumbai also faces stark income disparities. It has the highest number of billionaires in India, yet 25% of households earn less than ₹12,500 monthly. The average salary is ₹45,000, making conventional housing unaffordable for many, leading to reliance on informal housing. <u>Link</u>



San Francisco, USA

The city's tech boom has led to significant gentrification, with affluent tech workers driving up living costs and displacing long-term residents. This has created a stark divide between wealthy tech employees and lower-income communities. Link



Fortaleza, Brazil

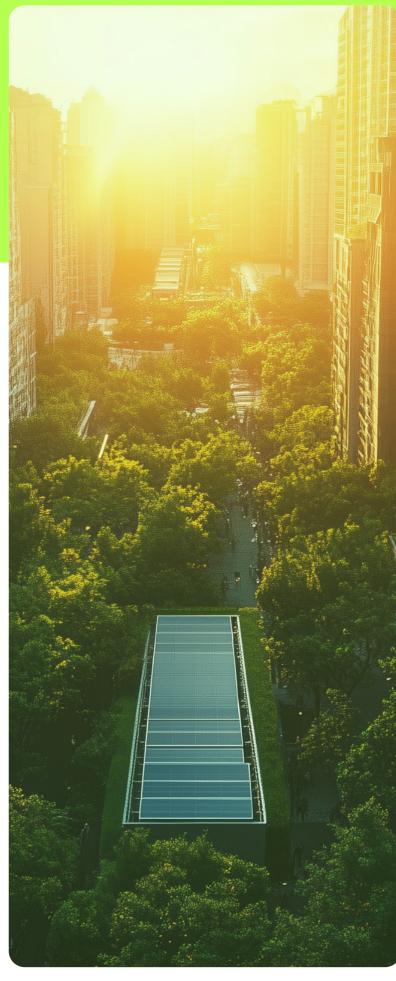
As one of the most unequal cities globally, Fortaleza faces significant housing disparities, with affluent areas juxtaposed against vast informal settlements, highlighting the city's deep social and economic divides. Link

The skyline shines with progress, but at street level, the reality is clear—one city, two different worlds, growing further apart every day.

As corporations dictate urban life, how much control is too much? What if technology deepens inequality instead of bridging it? How might cities reclaim governance and ensure progress serves all? Can sustainability exist when survival depends on wealth? The future unfolds rapidly, but who gets to shape it—and who is left struggling in its shadow?



NATURE FIRST AI-GOVERNED ECOLOGICAL PROSPERITY



NATURE FIRST AI-GOVERNED ECOLOGICAL PROSPERITY

Nature-Integrated Living

Al-Governed City

High-tech for Ecological Regeneration

Key Points:

- The city operates as a net-positive ecosystem, actively regenerating natural resources.
- Governance relies on Al-driven systems that prioritize nature regeneration, reducing traditional democracy.
- Corporations transform into stewards of sustainability, aligning profit with restoration and biodiversity.
- Localized, Al-optimized micro-factories enable resilient, circular urban economies.
- Neighborhoods seamlessly blend nature and technology, fostering healthy and inclusive urban living.

- Al-optimized mobility seamlessly integrates regenerative priorities, renewable energy, and resource efficiency.
- Buildings autonomously adapt to environmental conditions, actively improving air quality and sequestering carbon.
- Consumption emphasizes minimalism and regeneration, guided by Al assistants encouraging sustainable behaviors.
- Sustainability scoring systems influence access to resources and services, shaping daily life based on ecological contributions.
- Corporations collaborate closely with public bodies, maintaining accountability toward regeneration goals.

Facts and Figures:

24 storeys The largest vertical garden (green wall) measures 2,289 m², covers 24-storeys and was achieved by City Developments Limited in Singapore. (WEF)

2M

Natura has preserved over 2M hectares of the Amazon rainforest through its 'standing forest' economy model. It's supply chain includes +40 types of 'biodiversity assets' and involves around 7K families. (ellenmacarthur)

€20B

Cities like Dublin are using EU biodiversity funds (€20B/yr from 2021-2027 budgets) to create netpositive ecosystems through regenerative waterfront projects like Smart Docklands. (sweco)

A city that regenerates, adapts, and thrives—where nature leads guided by advanced technology.

Imagine a city, that by 2035 has evolved into a living ecosystem defined by nature regeneration, technological precision, and Al-driven governance. Technology is harnessed explicitly to rebalance human and environmental needs, shaping the city into a netpositive environment that actively replenishes natural resources rather than merely minimizing harm.

The transformative nature of the city is reflected in the its structure and life within it. High-density urban planning integrates abundant green and blue infrastructure, such as extensive urban forests, vertical gardens, and wetland parks, which actively improve air quality, replenish groundwater, and absorb more carbon dioxide than the city generates. Every structure, from high-end residential towers to modest community housing, incorporates ecological elements and regenerative technologies to ensure ecological benefits reach all socioeconomic layers.

The city's regenerative infrastructure benefits all citizens, creating neighborhoods that are clean, green, and healthy. While advanced services and ecological credits remain unevenly distributed, access is determined less by wealth and more by alignment with ecological standards. Opportunities, though accessible to everyone in principle, vary according to individual ecological contributions and credits.

Strict resource controls maintain ecological balance, monitored through city-wide sensors and Al-managed systems. Life here embodies disciplined harmony with nature, guided by technology and governed by ecological imperatives.

However, the governance model underpinning these developments differs markedly from other scenarios. Rather than participatory governance, decision-making authority rests predominantly with advanced, Al-driven systems designed specifically to balance the well-being of the city's human inhabitants with ecological sustainability goals.

Managed by public-private coalitions of corporations and expert councils, these Al governance systems optimize resource allocation, manage city-wide ecological performance, and prioritize regeneration over short-term human interests. While citizen voices are considered through aggregated behavioral data and predictive analytics, active democratic participation is minimal, relying instead on algorithmically driven policymaking to maintain the delicate balance between human comfort and ecological sustainability.

City score*:



Economics



Human Capital



Quality of Life



Environment



Governance

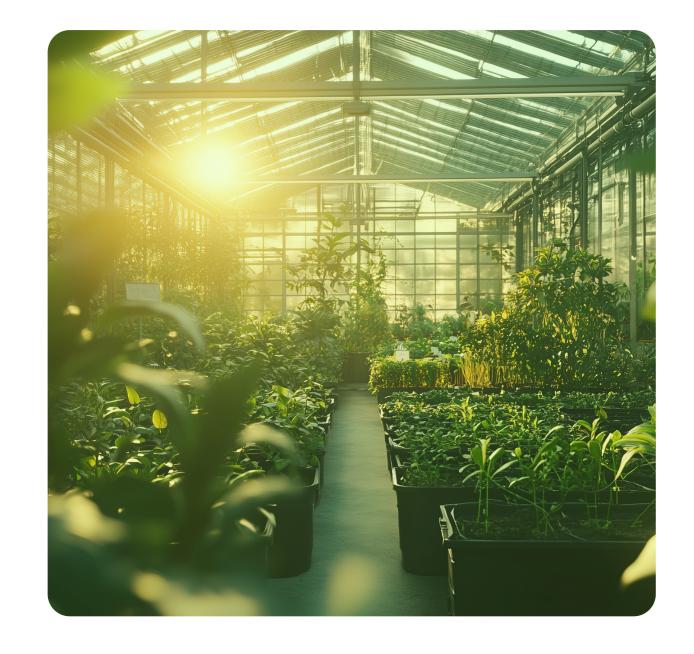


*See p. 36 for detailed reasoning for the scoring

As the global community faces severe climate impacts, resource depletion, and biodiversity loss, this city emerges as a best-practice example for regenerative urban living. Going beyond mere sustainability, it operates as a net-positive ecosystem—giving more back to nature than it consumes. Its infrastructure actively replenishes resources, exports surplus clean energy and purified water, and delivers ecological benefits regionally. Thereby, the city not only withstands climate disruptions but actively supports surrounding areas in building their resilience, demonstrating how urban adaptation can benefit both human communities and the environment.

Corporations play a pivotal role in this city and shift their business models toward environmental stewardship and regenerative innovation. Profit is no longer derived from resource extraction or consumerism alone but through ecosystems-based services, carbon sequestration, biodiversity restoration, and regenerative urban agriculture. Corporate success aligns directly with ecological impact, prompting firms to pioneer entirely new economic models emphasizing circular production, local sourcing, and resource regeneration.

The city thrives as a self-sufficient center with Al-optimized, and circular economies, relying on micro-factories that enable highly localized production within the metropolitan region. Supplemented by responsible regional supply chains focused on replenishing rather than extracting resources, these urban micro-production hubs seamlessly integrate advanced manufacturing technologies, vertical farms, bioreactors and renewable energy systems directly into the cityscape to sustain hyper-localized manufacturing and minimize external dependency.



How do we get here?

2026

Global environmental disasters drive rapid adoption of regenerative practices, shifting focus to survival and restoration. 2029

Citizens decide to use Al governance to ensure nature-first decisions, shaping city layouts for sustainability and regeneration.

2032

A new economic model reshapes city life, redefining how citizens live, work, and interact within this system. 2035

The city achieves net-positive status, becoming a reference of self-sustaining urban ecosystem that restores more than it consumes.

Society & Lifestyle

The rhythm of daily life revolves around ecological mindfulness and digital integration. Personal consumption is guided by Al assistants encouraging behaviors that regenerate rather than deplete environmental resources. Citizens embrace minimalism, prioritizing experiences over possessions. Local communities develop distinctive eco-cultural identities through regenerative farming, biodiversity projects, and circular-economy markets. Residents participate actively in community repair cafés, urban gardens, and neighborhood resource-exchange networks, creating meaningful local identities rooted in mutual reliance rather than economic competition.

Mobility

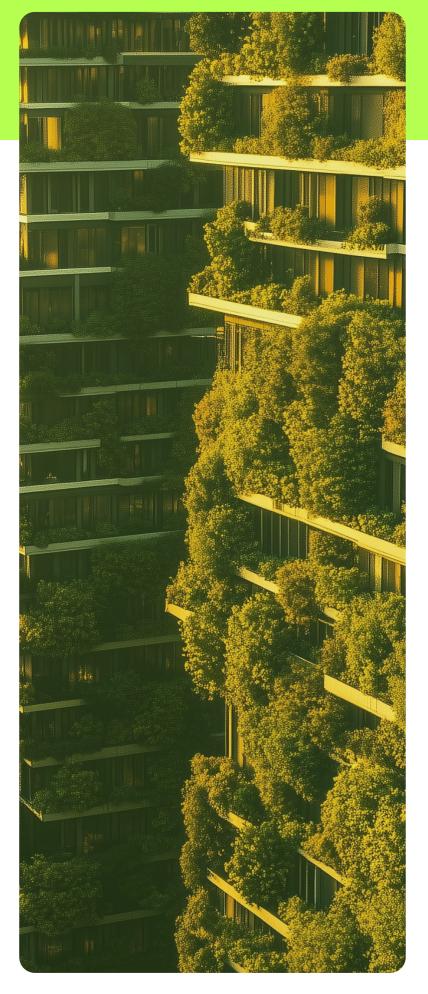
Mobility is meticulously optimized by AI, favoring ecological regeneration over convenience or personal preference alone. Autonomous electric transport is universally available, powered entirely by surplus renewable energy generated within the city. Air taxis and private transport are strictly limited, regulated through ecological impact credits. Mobility is seamless but carefully rationed, with AI scheduling city-wide journeys to minimize environmental impact. Citizens travel less frequently, encouraged by virtual interaction and hyperlocalized living.

Business & Retail

Businesses prosper through models built on ecological restoration and localized value creation. Retail has become highly personalized and necessity-driven, with Al assistants monitoring real-time resource flows to ensure responsible consumption. Stores function more like comanaged repair and exchange hubs, where people rent, share, or remanufacture essential goods. Corporate marketplaces operate on resource-sharing systems rather than traditional sales—imagine subscription-based essentials or co-owned digital inventories for materials and products.

Construction & Architecture

Buildings autonomously adapt to environmental conditions, shifting structures or altering insulation based on temperature and pollution levels. Instead of relying on static materials, architecture incorporates living surfaces that self-repair through bioengineered coatings, transforming them with organic, locally sourced, renewable materials. Structures actively sequester carbon, purify air and water, and enhance biodiversity. Corporate-sponsored development projects gain influence through their ecological achievements rather than economic power.



Infrastructure & Energy

Infrastructure is intentionally designed to regenerate resources, not just conserve them. Roads, buildings, and even sidewalks produce more energy than they consume through solar, kinetic, and bio-based technologies. Almanaged smart grids optimize energy flows, redistributing excess capacity city-wide. Water and waste systems function entirely within closed loops, continuously purifying and replenishing local resources. Corporations collaborate closely with public bodies, operating infrastructure jointly but with strict accountability toward net-positive environmental goals.

Legislation & Governance

Governance is primarily managed by AI, which delivers real-time sustainability scores that determine access to services based on individual ecological contributions. Decision-making algorithms are supervised by specialized councils of corporate, ecological, and technological experts, rather than through broad citizen participation, amid ongoing calls for greater transparency. Legislation prioritizes ecological regeneration and sets strict sustainability targets enforced by automated surveillance and instant penalties. The city's governance thus ensures order, sustainability, and harmony—though at the expense of active democratic engagement.



Examples of Today:



Ecovillage of Auroville, India

Auroville is an experimental township that embodies the principles of sustainability, self-sufficiency, and nature integration. The community works towards creating an eco-friendly, regenerative urban environment that harmonizes with the surrounding natural landscape. <u>Link</u>



Curitiba, Brazil

Curitiba is a global leader in sustainable urban planning, known for its Al-powered waste management, efficient Bus Rapid Transit (BRT), and green corridors that integrate nature into the city. The city is expanding solar and biogas energy programs to achieve a fully regenerative infrastructure. Link



Singapore

The city-state employs a Smart Nation initiative, integrating IoT devices, autonomous public transport, and smart energy management systems to enhance urban living. <u>Link</u>

In this city, nature regenerates, Al governs, and society adapts in harmony. Technology sustains rather than depletes, shaping a future where progress aligns with ecological balance.

Yet, as Al-driven systems make critical decisions, how do we maintain human agency? If access is tied to ecological behavior, what happens to those who struggle to comply? And as cities give more back to nature than they take, how might we redefine prosperity, equity, and the meaning of a truly thriving society?



URBAN DECLINE LIFE IN THE ABANDONED CITY



URBAN DECLINE LIFE IN THE ABANDONED CITY

Government Collapse

Stagnant Industry & Lack of Innovation

Mass Migration & Urban Decay

Key Points:

- Chronic underinvestment and weak governance leave the city in economic and social decline.
- Corporations have largely abandoned the city, with only a few remaining to exploit its last resources.
- Aging populations and low-income residents struggle as younger generations migrate to more stable cities.
- Public infrastructure deteriorates, with failing utilities, unreliable transit, and widespread urban decay.
- _ The economy is dominated by informal trade, barter systems, and underground black markets.

- Retail and structured employment collapse, replaced by survival-driven commerce and makeshift services.
- Sustainability is entirely absent, as neither businesses nor authorities can afford to prioritize it.
- Mobility becomes a daily struggle, with fuel shortages, failing roads, and unsafe, unregulated transit options.
- _ Trust in institutions vanishes, replaced by selforganized security and survival-based alliances.
- Governance is ineffective, with minimal oversight, rising corruption, and power vacuums filled by criminal groups.

Facts and Figures:

45%

Johannesburg reported a non-revenue water rate of 44.8%, indicating that nearly half of the city's water supply is lost due to leaks, theft, or unbilled consumption. (<u>TheCitizen</u>)

37%

Only 37% of the world's 500 most populous cities have formal strategies for biodiversity preservation, leaving ecosystems and communities vulnerable to exploitation. (weforum)

74%

Between 2013 and 2023, Venezuela experienced a 74% decline in living standards, as decades of economic mismanagement and sanctions devastated the nation's economy.

(economicsobservatory)

A city abandoned by progress, where survival replaces ambition and isolation defines daily life.

The city has become a clear reflection of societal neglect, economic stagnation, and environmental degradation. Once vibrant and prosperous, it suffers from chronic underinvestment, weak governance, and severe demographic decline by 2035.

Corporations have retreated from the city, driven away by economic instability, outdated infrastructure, and ineffective governance. The few remaining businesses exert disproportionate influence over city policies and get to dictate decisions purely to safeguard short-term interests rather than fostering long-term growth. Tech and automation solutions—once promising prosperity—are now controlled by distant corporate monopolies, offering minimal local benefit and instead exacerbating unemployment. Al systems, if implemented at all, are privately owned and used primarily for surveillance or basic administrative functions rather than public welfare.

The city is marked by poverty, isolation, and neglect, with differences only in the intensity of hardship experienced by residents. Decaying neighborhoods stand next to abandoned industrial zones, where pollution and waste accumulate unchecked. Public spaces, once vibrant, have become unsafe, further deepening residents' retreat into private lives and eroding collective identity.

Culturally, the city fragments, losing its vibrant shared identity and cultural institutions. Cultural life retreats indoors or underground, often organized informally within communities or neighborhoods attempting to preserve a sense of normalcy. While previously celebrated cultural venues deteriorate and close, creativity emerges organically through grassroots initiatives, informal art projects, and digital underground communities. However, these pockets of cultural activity remain isolated, reflecting broader societal fragmentation.

As younger generations leave for more prosperous cities offering stability, employment, and cultural vibrancy, the city's demographic shifts dramatically toward aging residents who cannot afford relocation. Daily life for remaining residents becomes increasingly precarious, marked by unemployment, dwindling public resources, and growing insecurity. Those who stay behind are predominantly older adults, low-income families, or migrants without options to leave, forced into informal economies and improvised housing. Informal networks and communal self-help structures become lifelines, compensating only partly for failed public institutions.

City score*:



Economics



Human Capital



Quality of Life



Environment



Governance



*See p. 36 for detailed reasoning for the scoring

National governments, facing fiscal crises and political gridlock, have gradually withdrawn support, leaving cities to fend for themselves. This has intensified competition between urban centers, with some thriving due to corporate investment while others, unable to attract or retain businesses, spiral into neglect and abandonment.

The city's economic value chain has disintegrated, with manufacturing either automated or outsourced entirely to more economically viable urban centers elsewhere. Sustainable practices are largely disregarded, as neither businesses nor local authorities have the resources or incentives to prioritize them.

While the city attempts to shift toward regional supply chains, cost fluctuations and infrastructure limitations frequently disrupt these efforts, causing temporary inefficiencies, shortages and higher consumer prices. As a result, raw materials are scarce, expensive, and sourced through informal or illicit channels. Most products available locally are imported, further draining local wealth.

As the economic situation leaves little room to consider sustainability or long-term planning, raw materials and goods circulate through informal trade and barter systems, reinforcing economic stagnation and limiting opportunities for legitimate growth.



How do we get here?

2026

Increasing global trade conflicts cause an economic recession.

2029

A large share of companies either leave or shut down, leading to heightened unemployment.

2032

Despite efforts, the city government doesn't manage to get the situation back under control.

2035

High despair fuels crime and black markets, while those citizens who can, leave.

Society & Lifestyle

Social structures have fractured beyond recognition. Trust has eroded, and interactions are increasingly transactional. Family units shrink as migration separates generations, leaving behind aging, disconnected individuals. Culture and innovation persist in hidden corners, street murals tell unspoken stories, underground workshops repair and repurpose salvaged tech, and digital forums foster art, debate, and resistance. Small, close-knit communities gather in abandoned buildings or discreet markets, where survival, trade, and creativity intertwine, keeping the city's fading spirit alive.

Mobility

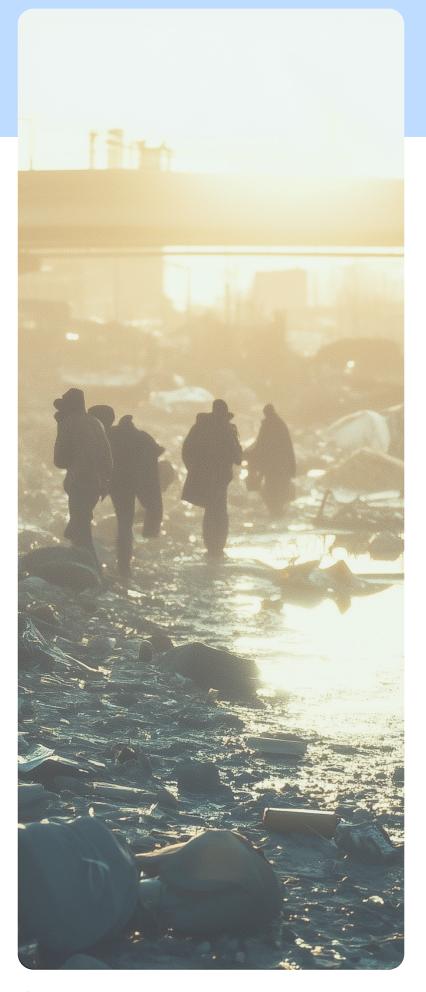
Mobility has become hazardous and unreliable. Oncestructured transit systems now operate sporadically, if at all, with residents forced to navigate collapsed roads, failing bridges, and lawless highways. Fuel shortages have crippled motorized transport, pushing people toward bicycles, modified carts, and unsafe, unregulated rideshares. Roadblocks—both physical and imposed by criminal groups—further fragment the city, making movement a calculated risk rather than a daily convenience.

Business & Retail

Retail has ceased to exist as a structured industry. Makeshift street vendors, underground exchanges, and survival-driven commerce define the city's economy. The collapse of formal employment has led to a rise in blackmarket networks that control food, medicine, and essential supplies. Residents trade goods rather than rely on unstable currency, while corporate interests extract what little wealth remains through remote automation, disconnected from the city's everyday struggles.

Construction & Architecture

The cityscape is characterized by widespread deterioration. Buildings stand abandoned, infrastructure is crumbling, and architectural decay dominates the urban aesthetic. Construction is limited to unplanned housing and informal settlements at city outskirts or within abandoned structures. Regulatory standards are ignored, replaced by necessity-driven improvisation. Corporations, no longer investing in city structures, have left behind dilapidated, neglected property, reinforcing a landscape of stagnation.



Infrastructure & Energy

Infrastructure services are dysfunctional, marked by frequent blackouts, contaminated water supplies, and chronic fuel shortages. Energy sources are overwhelmingly fossil-based, obtained through precarious channels and priced at a premium by private operators exploiting scarcity. Investments in renewable energy infrastructure are non-existent. Meanwhile, informal community efforts provide temporary relief by setting up small-scale water collection, localized repairs, and improvised energy solutions. However, the broader infrastructure remains outdated, prone to failure, and frequently targeted by competing factions or criminal groups.

Legislation & Governance

Government presence is minimal and ineffectual, reduced to basic administrative functions influenced heavily by the few corporations still operating remotely. Regulatory frameworks are obsolete, poorly enforced, and subject to corruption. Governance is reactive, lacking foresight or meaningful planning, leaving power vacuums filled by criminal organizations and informal leadership. Al is employed solely for rudimentary control and surveillance, maintaining minimal order without broader societal benefit.



Examples of Today:



Johannesburg, South Africa

Facing severe water shortages due to mismanagement and infrastructure failures, residents endure prolonged supply cuts. Critical services like hospitals are impacted, and the economy risks significant downturns. <u>Link</u>



Gary, USA

Gary epitomizes post-industrial decay. Abandoned factories, vacant homes, and failing infrastructure dominate. High poverty and crime rates persist, while revitalization efforts fail. The city remains a stark example of urban collapse. <u>Link</u>



Kinshasa, Democratic Republic of the Congo

Overwhelmed by rapid growth, lacks basic infrastructure like clean water and electricity. Corruption and weak governance exacerbate poverty and informal settlements, leaving the city in perpetual crisis. Urban failure defines daily life. <u>Link</u>

The city, once a symbol of progress, now stands as a cautionary tale of stagnation and neglect. Its streets, once thriving, are now marked by decay, its people trapped in cycles of struggle.

How might we find pathways for renewal when institutions are crumbling, and survival has replaced ambition? How might fractured communities rebuild trust, and what would it take to make that happen? And how might we provide hope and purpose for citizens when jobs are scarce?

CITY SCORING REASONING

	SCENARIO 1 CITIZEN CITY	SCENARIO 2 DIVIDED METROPOLIS	SCENARIO 3 NATURE FIRST	SCENARIO 4 URBAN DECLINE
Economics	 Strong regional and global economic integration with a mix of local, regional, and global supply chains. Thriving public-private partnerships stimulate innovation and job creation. Challenges remain in balancing economic growth with social equity. 	 A highly efficient, corporate-driven economy, benefiting from strong private sector investments. Global corporations establish economic stability but exclude lower-income populations. High dependency on corporate monopolies makes the economy vulnerable to shifts in corporate interests. 	 A self-sufficient, circular economy built on local production and regenerative business models. Al optimizes economic efficiency, but strict ecological constraints limit economic flexibility. Corporate success is tied to environmental impact, not just profit, creating a sustainable but controlled economy. 	 The local economy has collapsed, with businesses fleeing and infrastructure failing. Informal trade, barter economies, and blackmarket networks dominate. No long-term investment, leading to persistent stagnation and decline.
Human Capital	 Citizens are actively engaged in city planning and governance. Strong investment in education, reskilling programs, and Al-assisted personal development. A highly skilled and inclusive workforce drives economic resilience. 	 A divided workforce, where the wealthy benefit from premium education, while lower-income groups rely on informal skills networks. Al-driven automation displaces jobs, exacerbating unemployment for low-skilled workers. Limited social mobility, with access to opportunity gated behind economic privilege. 	 Al-driven personal development guides individuals toward sustainability-focused careers. Minimal democratic participation limits personal freedom and career flexibility. Opportunities exist, but they are shaped by one's ecological contributions. 	 Talent flight leaves behind an aging, economically struggling population. Education and workforce training deteriorate, limiting future opportunities. Informal skills and self-sufficiency replace traditional employment paths.
Quality of Life	 Well-connected, human-centerd infrastructure with strong social cohesion. Public services (e.g., healthcare, transport, cultural spaces) are designed to be inclusive and participatory. Some inequalities persist, as sustainability and democratic decision-making sometimes slow down implementation. 	 Luxury and convenience define high-income districts, but stark disparities exist. Subscription-based public services prioritize paying customers, leaving others in precarity. Social fragmentation and unrest grow as inequality deepens. 	 A healthy, green, and highly optimized urban environment, with access to clean air, water, and food. Social interactions are structured by ecological impact, which limits personal freedoms. High-tech, regenerative infrastructure enhances well-being, but Al-driven governance restricts lifestyle choices. 	 Basic services have collapsed, with widespread poverty, insecurity, and health risks. Deteriorating infrastructure and unsafe public spaces make daily life a struggle. Community bonds weaken, as survival becomes the primary concern.
Environment	 High reliance on renewables and emission-free transport. Human-first governance leads to occasional compromises in environmental goals. Participatory approaches drive sustainability, but waste management and adaptation lag behind rising consumption. 	 Wealthy districts are well-adapted to climate risks, using Al-driven climate resilience strategies. Poorer areas suffer from environmental degradation and lack access to green spaces. Corporate interests dictate environmental policy, prioritizing business needs over sustainability. 	 A net-positive environmental model, actively regenerating natural resources. Al-driven smart grids optimize resource use and eliminate waste. Every building, system, and product contributes to biodiversity and ecological restoration. 	 Sustainability is completely abandoned, as survival and cost-cutting take precedence. Pollution, waste, and environmental hazards worsen with no mitigation efforts. Climate adaptation is non-existent, making the city highly vulnerable to extreme weather.
Governance	 Fully transparent, participatory, and data-driven governance with Al-assisted policymaking. Strong decentralized decision-making ensures agility and resilience. Balanced regulatory frameworks prevent corporate overreach while maintaining public involvement. 	 Corporate entities hold most decision-making power, sidelining public institutions. Elections and policymaking are influenced by corporate lobbying and economic interests. Minimal citizen engagement in governance beyond consumer-driven decision-making. 	 Al-driven governance ensures strict ecological compliance but reduces democratic participation. Decision-making is highly efficient and optimized, yet citizens have limited influence over policies. Some resistance emerges against algorithmic control and lack of individual autonomy. 	 Government influence is minimal, corrupt, or non-existent. Criminal organizations and informal leadership fill power vacuums. No long-term planning or stability, leaving residents to fend for themselves.

APPENDIX 1: TREND REPORT



RESEARCH 2035 MEGASHIFTS AND TRENDS

Input

- Analysis of internal and external sources
 - _ 10+ external trend reports
 - Bluemorrow trend database





bayern innovativ



publicis sapient



BLUEM RROW



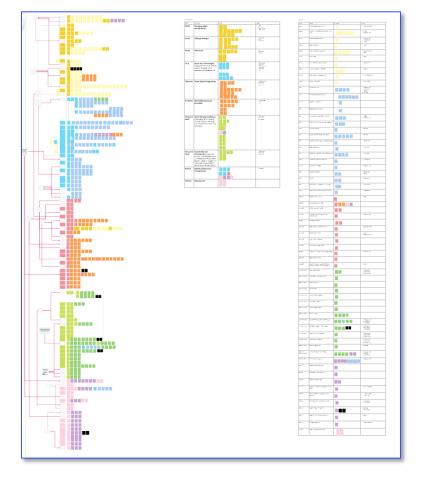


2. Interviews with 4 experts for the future of cities



Throughput

- Development of a trend long-list of 150+ trends across STEEP categories
- 2. Identification of overlapping trends and trend relations
- 3. Definition of 11 megashifts i.e., higher level trends that fundamentally drive cities of the future
- 4. Prioritization of the top 50 trends shaping cities of the future



Output

11 megashifts fundamentally driving cities of the future



50 trends shaping cities of the future



EXPERT INTERVIEWS



Prof. Heiner Monheim

- Prof. em. for Applied Geography and Urban Planning, University of Trier
- Formerly Head of Department at the Ministry of Urban Planning, Living and Mobility of Northrine-Westphalia



Cecile Oberholzer

- Project Lead Smart City Zurich, City of Zurich
- Future Mobility Ambassador, Swiss Association for Autonomous Mobility



Stéphane Pean

- Expert and Consultant in Regional and Urban Planning and Mobility
- Formerly at PSA and Toyota in Japan
- Digital Cities Action Line Leader at EIT Digital



Andreas Knie

- Lead Research Group Digital Mobility, Science Center for Social Studies Berlin
- Prof. for Sociology at TU Berlin

2 COMPONENTS TO DEVELOP SCENARIOS

Scenarios describe plausible developments of cities of the future. They are driven by 11 fundamental megashifts and enriched by future developments of the most impactful and uncertain trends shaping the future of cities.

11 fundamental megashifts driving cities of the future

Megashifts portray higher level trends that fundamentally drive the future of cities. They are categorized along the STEEP framework and consist of a bundle of driving forces.



50 trends shaping cities of the future

Trends are individual aspects shaping the future of cities. They are categorized along the STEEP framework and vary in terms of their level of impact and the uncertainty related to their future development.

Social	TECH.	ECONOMIC	ENVIRON.	POLITICAL
Trend Trend				
Trend Trend				
Trend Trend				
Trend Trend				
Trend Trend				

6. Urban Wealth Inequalities

11 MEGASHIFTS DRIVING THE FUTURE

Social



Changing Urban Demographics

Technological



Smart City Technologies

Economic



Urban Wealth Inequalities

Environmental



Urban Climate Resilience

Political



Digitalization and cocreation of city governance



Lifestyle Changes in Urban Environments



Changing Urban Mobility
Systems



Emerging Urban Economies



Sustainable City Development



Glocalization



New Work and Education

50 TRENDS SHAPING THE FUTURE OF CITIES

Social	TECHNOLOGICAL	ECONOMIC	ENVIRONMENTAL	POLITICAL
1. Cultural identity preservation	11. Role of AI in cities	21. Integrative retail spaces	31. Urban biodiversity conservation	41. Urban security concerns
2. Health and wellbeing	12. AR/VR & immersive experiences	22. Companies shaping cities	32. Waste-free cities	42. Migration policy challenges
3. Mixed-use neighbourhoods	13. Digital city services	23. Digital currencies	33. Floating cities	43. Data-driven governance
4. Virtualization of daily life	14. Advanced prefabrication and modular design	24. Investment in infrastracture & tech-transformation	34. Urban carbon neutrality	44. Inclusivity policies
5. Local community engagement	15. Digital urban twins	25. Rise of public-private partnerships	35. Biophilic design	45. Ground and property valuation regulation
6. Misinformation and fake news	16. Quantum computing	26. Knowledge economy	36. Urban farming	46. Green regulation and ESG compliance
7. Densification	17. Advanced communication networks	27. Localization of supply chains	37. Sustainable and smart materials	47. Cities role in global governance
8. Growing loneliness epidemic	18. Modernization of infrastructure	28. Proliferation of decentralized energy trading	38. Renewable energy in urban design	48. Censorship and freedom of speech
9. Citizen activism	19. Decentralized networks	29. Revival of craftmanship	39. Smart resource management	49. City fiscal autonomy
10. Citizen prosumption	20. Rise of robotics in public spaces	30. Metropolitan economic hubs	40. Renovation & retrofitting	50. Regulatory hurdles

SOCIAL MEGASHIFTS & TRENDS



CHANGING URBAN DEMOGRAPHICS

Urban demographics are undergoing profound shifts due to aging populations and increased migration. Elderly increasingly require age-friendly infrastructure, such as accessible housing, healthcare facilities, and public transport systems. This demographic shift, coupled with labor shortages, is transforming workforce dynamics, particularly in sectors like construction, where regional barriers further strain labor availability.

Migration to cities, driven by economic opportunities and climate or conflict-related displacements, is accelerating urban population growth, presenting both housing challenges and opportunities for diverse skill integration. Some cities are beginning to position themselves as climate refuges, appealing to migrants displaced by rising sea levels and extreme weather, while simultaneously leveraging global migration to drive innovation and economic growth. Others are creating hostile environments and push for less migration.

To address these demographic shifts, socially inclusive urban planning has become a critical priority. Equitable access to housing, public spaces, and services for all citizens is essential to fostering social cohesion and resilience in urban environments. Cities are increasingly adopting accessibility-first infrastructure, ensuring urban systems are designed to serve vulnerable populations, including the disabled and elderly, and to reduce barriers to participation in urban life.

These shifts also underscore the importance of cultural integration and community engagement, as cities balance the needs of diverse populations while fostering a sense of belonging. By embracing inclusive planning and accessibility-focused infrastructure, cities can not only manage the challenges of changing demographics but also harness the opportunities they present to build thriving, equitable, and innovative urban environments.

The city of the future should be inclusive so that both children and the elderly can move about freely and safely.







Cecile Oberholzer

Driving Forces



Population growth



Aging populations



Migration and integration



Affordable housing challenges



Cultural diversity in urban areas



Social inclusivity in urban planning



** Accessibility-first infrastructure

CHANGING URBAN DEMOGRAPHICS

Manifestations



Vienna for Seniors

In Vienna (Austria) a Senior Citizens' Advocate acts as a mediator to create the best possible living conditions and social environment for older adult citizens and promote their active participation in society.



Sidney Urban Growth Strategy

Urban planning process has impacted societal well-being in Greater Sydney, leading to negative social and environmental challenges.



Richmond ethnoburb

Richmond has transformed into a predominantly Chinese ethnoburb, with Chinese heritage individuals comprising up to 66.9% of the population, influencing the cultural landscape with Asian shopping centers and cultural festivals.



Lagos Population Boom

As Africa's largest city, Lagos is experiencing exponential growth due to high migration rates and a booming economy, especially in finance, technology, and trade. Challenges include managing infrastructure and providing housing for its growing population.

Guiding questions

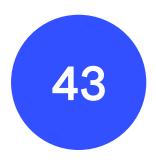
- 1. How will cities adapt infrastructure to meet the needs of an aging population and address labor shortages?
- 2. How will cities respond to migration driven by climate change and conflicts while balancing housing demand and skill integration?
- 3. How can cities ensure equitable access to housing, public spaces, and services for vulnerable populations?
- 4. What strategies will cities use to foster cultural integration and social cohesion amidst growing diversity?

Facts & Figures



The world's 15 fastest-growing cities - based on UN population estimates - are all in Africa.

WEF



Number of megacities is expected to increase from 36 to 43 by 2030.

Federal Statistical Office of Germany



1.2 billion people could be displaced globally by 2050 due to climate change and natural disasters.



The number of very old people (80+ years) in the EU is projected to more than double from 27 Mln in 2022 (6.1%) to 64 Mln (15.3%) in 2100. Eurostat

LIFESTYLE CHANGES IN URBAN ENVIRONMENTS

Urban lifestyles are undergoing significant transformation as housing preferences evolve and sustainable living becomes a priority. Modular housing is emerging as a flexible solution, adapting to diverse individual and family needs while addressing challenges like loneliness and elderly care.

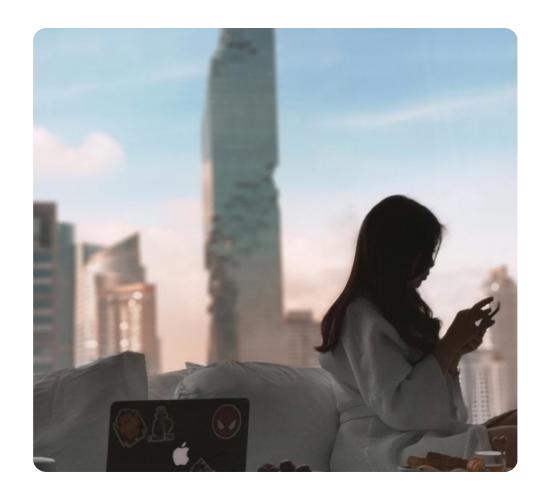
These designs integrate multi-generational living and co-working spaces, fostering social cohesion and creating vibrant urban communities. At the same time, shared housing models are gaining popularity among young urban professionals, offering affordable alternatives that balance space efficiency with community living. This shift reflects a growing emphasis on adaptable and inclusive housing solutions that cater to the varied needs of urban populations while optimizing limited city space.

In parallel, a rising focus on sustainable living and hyper-personalization is reshaping urban services and consumer expectations. Cities are witnessing a move toward local engagement and sustainable consumption, with citizens prioritizing quality and conscious choices over rapid product turnover. Advanced analytics and generative AI are playing a pivotal role in delivering personalized experiences, from real-time health and safety improvements to tailored shopping journeys and adaptive public services.

As urban citizens increasingly demand connected and individualized services, cities are transforming to align with private sector standards, treating residents as consumers of customized experiences. This growing trend of individualism and personalization is redefining the urban landscape, positioning cities as hubs of sustainable innovation and responsive design.

Housing must allow for a maximum degree of flexibility so that I can reduce the size of my social structure and add and remove my functional components.

Andreas Knie



Driving Forces



Changing housing preferences



Modular and shared housing



Multi-generational living



Rise of new generations



Al-enabled personalized services



Conscious consumerism



Rise of Individualism



Sustainable living

LIFESTYLE CHANGES IN URBAN ENVIRONMENTS

Manifestations



Gen Z hacking NYC rental culture

Cohabs, a fast-growing Belgian co-living company currently maintains 14 Big Apple properties where young people live for prices from \$1,600 to \$2,200.



LOCAL: multi-generational communities

Bridging the gap between generations and create spaces for greater user involvement, LOCAL continues to push the boundaries for innovative design, e.g. by integrating healthcare services, staff, and comprehensive care into Danish social housing.



Apartment of the future in Paris suburb

An engineer and a designer are testing a quasi-autonomous lifestyle in the western Paris suburbs to simulate what sustainable urban living could look like in 2040.



Housing choices of urban migrants in China

In Chinese cities, urban migrants are increasingly opting to rent rather than purchase homes. Factors such as household life cycle, education, and social integration significantly influence these decisions.

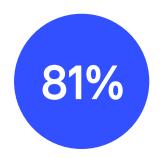
Guiding questions

- 1. How will modular and shared housing models address evolving urban housing needs and social challenges?
- 2. How can cities balance adaptable housing with community cohesion in limited urban spaces?
- 3. How will cities promote sustainable living while meeting rising demands for personalized services?
- 4. How will city infrastructure adapt to the lifestyle of younger generations?
- 5. To what extent will cities adapt to treat residents as consumers of personalized, sustainable experiences?

Facts & Figures



There were on average 1.6 rooms per person in the EU in 2022. Eurostat



81% of consumers believe AI has become essential to modern customer service. Zendesk



Share of U.S. people living in multigenerational homes has more than doubled, from 7% in 1971 to 18% in 2021. Pew Research Center



72% of co-living residents in the UK are aged 26 to 40.

Knight Frank 2024 co-living report

NEW WORK AND EDUCATION

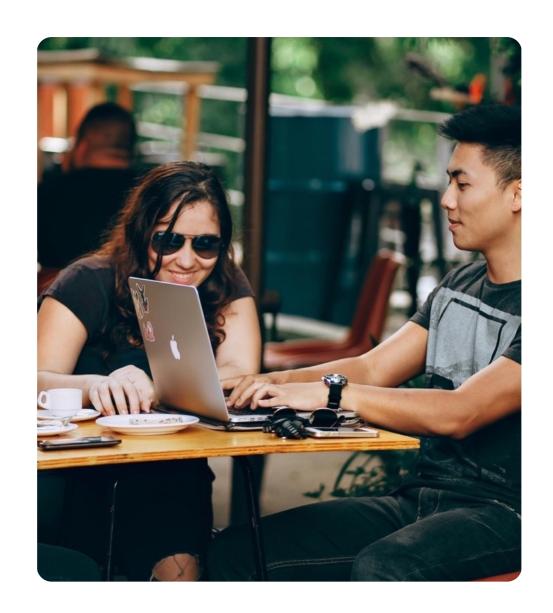
The transformation of traditional work models, driven by flexible schedules, hybrid arrangements, and the rise of digital nomadism, is reshaping cities and their infrastructures. Remote and hybrid work hubs are emerging as essential components of urban environments, offering adaptable workspaces that cater to evolving professional preferences. In a similar fashion, also (higher) education is transforming.

This shift reduces commuting needs, easing pressure on urban transit systems and altering traditional office demand, though location-dependent industries maintain a presence in city centers. Flexible coworking spaces are increasingly popular, providing workers with community-driven environments that support collaboration while accommodating individual schedules. These changes reflect a broader trend toward decentralization, where urban cores are no longer the sole focal points of economic activity.

The rise of digital nomadism is further transforming urban living, as mobile workforces demand flexible spaces that blend work and leisure. Cities are adapting to attract these professionals, offering infrastructure and amenities that support remote work, such as high-speed internet, accessible coworking spaces, and vibrant cultural hubs. This redistribution of economic activity is altering urban landscapes, with suburban and regional areas seeing increased growth as workers seek out livable, affordable environments.

Additionally, Al-enabled tools and virtual assistants are becoming integral to new work models, enhancing productivity and enabling dynamic, skills-based wages. They also drive the rise of digital education by offering personalized learning experiences, real-time feedback, and skill development tailored to individual needs. This proliferation of lifelong learning opportunities enables workers and students to continuously upgrade their skills, ensuring they stay competitive in rapidly evolving industries.

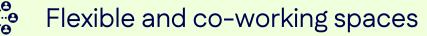
As work and education becomes more decentralized and adaptable, cities must evolve to meet the demands of these modern professionals, fostering environments that balance flexibility, innovation, and community.



Driving Forces







Rise of the Digital Nomad



Redistribution of economic activity



Al-enabled work and education



Proliferation of Lifelong Learning



Rise of digital education

NEW WORK AND EDUCATION

Manifestations



<u>Fujitsu Borderless</u> Office

Fujitsu has implemented a 'borderless office' concept to boost flexibility, productivity, and communication across its workspaces.



Atlassian's Melbourne office

Atlassian's new workspace offers air hockey, table tennis and an on-site barista — but only 12 desks and no meeting rooms. It has a focus on collaboration and connection instead, with the tech firm hoping to redefine the nature of work.



Harvard CS 50x online MOOC

After Harvard opened the Introduction to Computer Science course to online learners in 2007, it surged to nearly 5 million students by 2023.



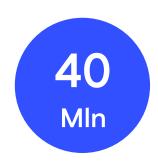
UAE rated top destination for digital nomads

Combining a plethora of world-class amenities and indoor entertainment options, there is no shortage of places for digital nomads to escape the summer heat and enjoy the winter warmth in Dubai and Abu Dhabi.

Guiding questions

- 1. How will cities adapt infrastructure to support flexible work models and digital nomadism?
- 2. How will the shift to hybrid and remote work alter urban transit systems and office demand?
- 3. How can cities balance decentralization with maintaining vibrant urban cores and economic activity?
- 4. How will Al-enabled tools reshape work-life balance and lifelong learning?
- 5. How can cities foster environments that integrate flexible work, digital education, and community-driven spaces?

Facts & Figures



40 million people worldwide work as digital nomads, an increase of 147% since 2019.

Demand Sage



While 62% of workers are full-time in-office, there is a six percent decline from 66% in 2023.
Forbes



60% of teachers claim to have integrated Al into their daily teaching practices, while 44% of children actively engage with generative Al. AIPRM



By 2030, 30% of all office space will be flexible, which is a massive jump from just 2% in 2023.

WHAT THE EXPERTS SAY



Inefficient land use (incl. single story buildings and large parking lots) and the **poor quality of public spaces** pose a challenge to the quality of live in cities and metropolitan areas. Cities should be **more compact and offer a mix of relevant services within short distances** ("15 min city"), as well as attractive public spaces ("back to the qualities of the Gründerzeit era").

The dissolution of traditional family structures and aging population require **new social structures that foster solidarity and support**. One good example are projects in the Netherlands and Scandinavia, where kindergarten, student housing and elderly homes are located in the same building.



Demographic change requires adjustments in urban planning. Cities must create places where older people can spend time and have their needs met. Cities should also create spaces that facilitate interaction and exchange among people.

"There is no perfect city. Cities should always be viewed as spaces of possibility that enable openness and exchange."



The city should have **good social mixing without income-based segregation**. Various workplaces and businesses should be available to offer a wide range of employment opportunities. It should ensure **short travel distances** so that all key locations (incl. leisure offerings like parks and water) can be reached within 20 minutes.

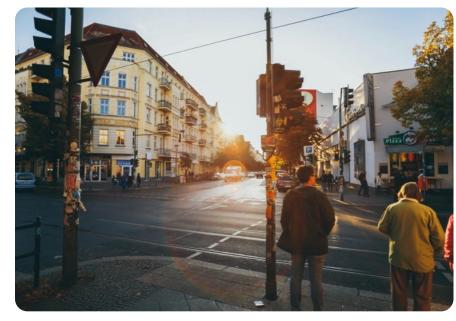
Migration will be intensified by climate change, leading to an increased need for housing, infrastructure, and schools in cities. Solidarity and inclusion are critical to foster an open and supportive society. This is particularly important in the context of migration and integrating new residents.

The aging population poses a challenge, especially regarding labor shortages and adapting urban services to the needs of older people.











1. Cultural identity preservation

The preservation of cultural identity in cities is increasingly driven by nationalistic tendencies, fueled by a societal push to protect local traditions, languages, and heritage amidst globalization and urban transformation.

Communities are advocating for stronger representation of national and regional symbols in urban spaces, such as monuments, festivals, and architecture, to reinforce a collective cultural identity. While it strengthens a sense of belonging and pride among residents, it raises concerns about marginalizing minority cultures and limiting the multicultural dynamism of modern cities.

2. Health and wellbeing

Cities are embedding health and wellness into urban planning to enhance post-pandemic resilience and address the growing demand for health-focused lifestyles. Initiatives such as green spaces, active transport infrastructure, and mental health support programs aim to combat rising urban stress and improve social well-being in high-density environments. Additionally, the shift in consumer priorities toward health and wellness products is reshaping retail and service offerings, catering to younger generations' emphasis on holistic well-being.

3. Mixed-use neighborhoods

The integration of residential, retail, and commercial spaces helps create vibrant urban communities with mixed-use neighborhoods that combine work, home, and leisure. These developments improve convenience and connectivity, cutting down on long commutes and encouraging social interaction and economic growth. Walkable and inclusive environments enable cities to establish dynamic hubs that accommodate diverse lifestyles and foster stronger community ties.

4. Virtualization of daily life

Advancing virtualization of daily life is reshaping how people work, connect, and access services, with digital platforms, personal digital identities, and immersive technologies like AR and VR playing a key role in urban life. Remote work, virtual classrooms, and digital healthcare reduce the need for physical presence, offering convenience while changing traditional social interactions. To adapt, cities are enhancing connectivity and digital infrastructure to support virtual interactions while ensuring physical community spaces remain essential for social connection.









5. Local community engagement

Digital tools and participatory initiatives are giving communities greater influence in urban planning, fostering inclusivity and local ownership. Al-driven platforms and 3D visualizations allow residents to co-design and visualize projects, ensuring urban developments align with their needs and cultural values. These approaches strengthen cultural connectivity and support community-led development, leading to fairer and more resilient cities.

6. Misinformation and fake news

Misinformation and "fake news" present serious challenges to urban societies by fostering mistrust, polarization, and confusion among citizens. False narratives can erode trust in institutions, deepen social divides, and strain community cohesion, particularly in diverse urban settings. As misinformation influences public opinion and decision—making, it disrupts collective action and highlights the critical need for digital literacy, clear communication, and strategies to build societal resilience.

7. Densification

Densification is transforming urban landscapes by concentrating housing, services, and infrastructure into compact areas to meet the needs of growing populations. This approach supports sustainability by curbing urban sprawl, improving public transit systems, and optimizing resource use. At the same time, it brings challenges like overcrowding and pressure on infrastructure, requiring creative urban planning to maintain liveability and equitable access to resources.

8. Growing loneliness epidemic

Loneliness is emerging as a major urban challenge, driven by a rise in single-person households, a reliance on digital communication, and declining social networks. This growing issue impacts mental health, productivity, and overall well-being, particularly in densely populated cities where genuine social connections are harder to form. To address this, cities are focusing on community-building initiatives, creating inclusive public spaces that promote interaction, and developing programs designed to strengthen social bonds and reduce isolation.





9. Citizen activism

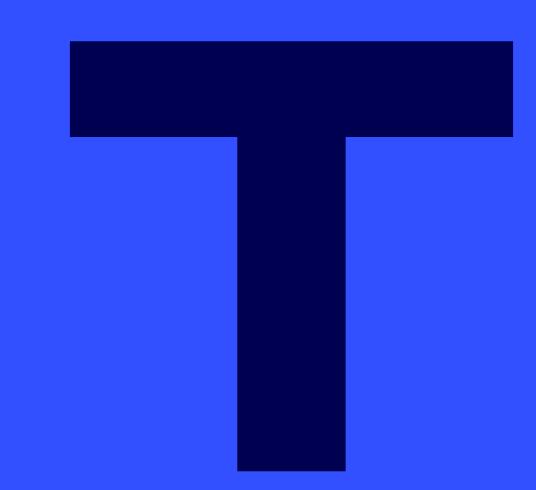
Citizen activism is playing a pivotal role in shaping urban policies and driving social, environmental, and political change within cities. From climate action movements to advocacy for affordable housing and equitable public services, citizens are increasingly using digital platforms and grassroots organizing to amplify their voices. The rise in activism fosters greater civic engagement and accountability, empowering communities to directly influence urban development and decision-making processes.

10. Citizen prosumption

Citizen involvement in producing and consuming goods, services, and energy is reshaping urban economies into decentralized and sustainable systems. Community-driven initiatives, such as microgrids, enable collaborative electricity generation and sharing, boosting energy resilience and cutting environmental impact. By redefining the traditional roles of producers and consumers, these efforts strengthen community connections and promote circular resource flows in urban areas.

BLUEM RROW

TECHNOLOGICAL MEGASHIFTS & TRENDS



SMART CITY TECHNOLOGIES

Smart city technologies are redefining urban living by leveraging IoT, AI, and data-driven systems to optimize infrastructure, energy management, and property solutions. IoT-enabled energy management systems are at the forefront, offering real-time monitoring, optimization, and the ability to exchange surplus energy. These systems not only empower homeowners to reduce costs and environmental impact but also drive city-wide sustainability through efficient resource utilization.

Cities adopting these technologies are fostering economic and social growth by enhancing innovation, improving governance, and increasing citizen engagement. By integrating digital technologies into urban infrastructure, cities can better manage resources, reduce operational costs, and create a more connected and responsive urban ecosystem.

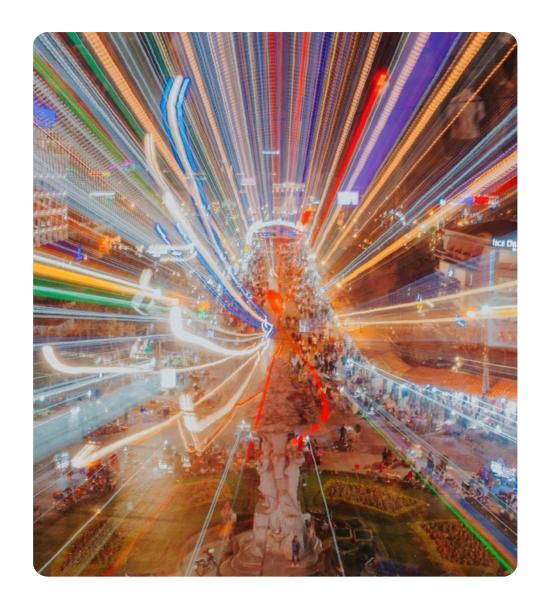
The integration of AI and IoT in property management and residential design is further advancing smart city development. Al-driven tools are optimizing property management by enabling predictive maintenance, tenant screening, and space utilization analysis, streamlining operations for property owners and tenants alike. In residential spaces, smart home devices and sensors are enhancing security, convenience, and energy efficiency, while IoT-enabled building designs are creating smarter, connected spaces without the need for retrofitting. This seamless integration of connectivity and IoT into urban planning and property solutions is not only

improving operational efficiency but also setting a new standard for intelligent city living, where technology is embedded by design to improve quality of life.



Technology is a tool, not a silver bullet: Digital twins, AI, ChatGPT-based e-government, and data platforms can improve urban management, but without proper governance, integrated policies, and reliable data, these tools offer limited impact.





Driving Forces

Smart energy management

.

Internet of Things

Rise of data and connectivity

Rise of Al



Sensor technology



Smart Homes



Advancements in Property management



Demand for Predictive Maintenance

SMART CITY TECHNOLOGIES

MEGASH

Manifestations



<u>London Smart</u> <u>Mobility Living Lab</u>

Using public and private roads in London, SMLL is developing and validating new mobility and transport technologies in a realworld connected environment.



Ecosmart city Singapore

In 2021, Singapore announced plans for an eco-smart city in Tengah, the western region, which will be entirely vehicle-free. This forest city will comprise five residential districts with 42,000 houses, prioritizing safe zones for pedestrians and cyclists.



Zurich

For 4 years in row Zurich is considered as the top smart city in the IMD yearly Smart City Index. This is based on five key areas: health and safety, mobility, activities, opportunities, and governance.



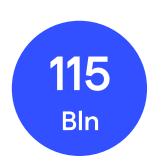
WeGO

The World Smart Sustainable Cities Organization (WeGO), is a membershipbased international association of local governments, smart tech solution providers, and institutions committed to the transformation of cities into smart sustainable cities through facilitating public-private partnerships (PPP).

Guiding questions

- 1. How will IoT and AI transform urban infrastructure and energy management to drive sustainability and efficiency?
- 2. How will Al-driven tools reshape property management and residential design in cities of the future?
- 3. How can cities seamlessly integrate IoT into urban planning to create smarter, more connected ecosystems?
- 4. To what extent will smart city technologies redefine quality of life through intelligent, technology-driven solutions?

Facts & Figures



The Smart Cities market worldwide is expected to witness a significant revenue growth at CAGR of 9.59%, reaching \$ 115.3 Bln by 2029. Statista



Urban areas
worldwide had an
internet usage rate of
about 82%, , while
rural areas lagged
at 46%.
Market.us



A substantial surge of over 140% in the use of data by smart cities is expected between 2023 and 2027
Kaleido Intelligence



10,000 city intersections in New York are outfitted with cameras and sensors New York State

CHANGING URBAN MOBILITY SYSTEMS

Urban mobility is undergoing significant transformation as evolving consumer preferences, technological advancements, and sustainability goals reshape transportation systems. As cities prioritize pedestrian-friendly spaces, cycling, and public transit, the future of urban transportation is increasingly focused on sustainability, equity, and accessibility for all.

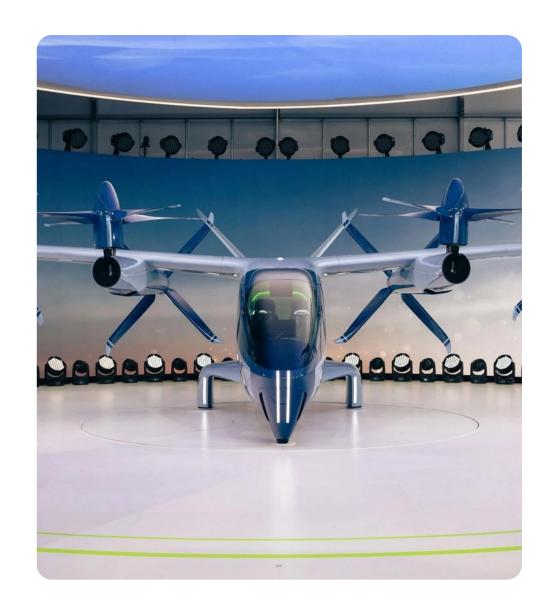
While EV adoption continues to gain traction, governments and private sectors are ramping up efforts to expand charging networks, introduce regional incentives, and address infrastructure gaps. In the meantime, the adoption of hybrid vehicles is growing as consumers view them as a cost-effective alternative to fully electric vehicles (EVs).

Simultaneously, autonomous vehicles (AVs), e-bikes, and supporting infrastructure are redefining urban planning and sustainability. AVs, including shuttles and self-driving cars, offer potential solutions for mobility in both urban and rural areas, but adoption rates vary due to regulatory challenges and integration issues. Additionally, autonomous driving is demonstrating significant potential in rail transport, where automation is easier to implement due to guided tracks.

As cities strive to promote slower, eco-friendly transport modes, AVs are envisioned to complement existing systems, such as trams and underground networks, for efficient inner-city travel. Emerging air transport systems, including drones and electric

vertical take-off and landing vehicles (eVTOLs), could further revolutionize urban mobility by addressing logistical and passenger transport challenges. Drones might become game-changers in last-mile delivery, while air taxis are poised to provide congestion-free travel options for short distances.

Collaboration between urban and rural areas is essential to ensure sustainable and integrated transportation systems. By connecting urban centers with rural regions through high-speed transit corridors and shared mobility platforms, cities can reduce congestion, enhance accessibility, and foster economic growth. Efforts to develop multimodal transportation systems are also transforming mobility patterns, with shared platforms like car-sharing and Mobility-as-a-Service (MaaS) reducing dependence on personal vehicles.



Driving Forces

Consumer Mobility Preferences

Mobility Services

Car-Free City Centers

City level push toward E-mobility

Autonomous Transportation



Regional Transport Networks



Urban Air Mobility



15-minute city concepts

MEGASH

CHANGING URBAN MOBILITY SYSTEMS

Manifestations



China's Flying Car Initiative

China plans to introduce 100,000 flying cars by 2030, serving as air taxis, delivery vans, and family vehicles, aiming to revolutionize urban transportation.



Shared MicromobilitySolutions

Cities are adopting shared e-scooters and bikes to reduce short car trips, alleviate congestion, and lower emissions, contributing to more sustainable urban mobility.



Brisbane Race to Gold

Brisbane is exploring the integration of air taxis, autonomous personal pods, and self-driving cars to enhance mobility by the 2032 Olympic Games.



Future of Streets

REALLOCATE transforms streets into inclusive, green, safe and future-proof urban spaces, where communities live and thrive. It develops integrated and innovative sustainable urban mobility solutions, enabling European cities to exchange knowledge, experiences and ideas.

Guiding questions

- 1. How will cities prioritize sustainability and accessibility in urban mobility systems?
- 2. How will EV charging networks address infrastructure and consumer needs?
- 3. What role will autonomous vehicles play in reshaping urban and rural mobility?
- 4. How will drones and eVTOLs transform logistics and passenger transport?
- 5. How can cities integrate multimodal systems to connect urban and rural areas sustainably?
- 6. To which degree will cities have control over their mobility system and people flows?

Facts & Figures



Intelligent transport systems lead to reduced travel times and efficiency (66 %), reduced accident rates (22%), and fuel savings (11 %) McKinsey



Transport accounts for a quarter of Europe's greenhouse gas emissions Eurocities Monitor



In 2050, Urban mobility is expected to cost €829bn per year across the globe, more than four times higher than in 1990.



Drivers in the world's ten most congested cities lose approximately 130 hours annually to traffic jams BCG

WHAT THE EXPERTS SAY



While smart city solutions (like virtual urban twins) exist, their value lies in **supporting integrated strategies** rather than being standalone projects. They must align with policy goals, governance structures, and sustainable urban planning principles.

Effective use of technologies depends on **high-quality data and strong data governance frameworks**. Poor data quality leads to poor outcomes, even with advanced tools.

Some Southeast Asian cities have advanced digital payment and mobility-as-a-service options (e.g., QR code payments, ride-hailing apps) but lack integrated mobility policies. Europe has strong methodologies and frameworks but sometimes insufficient infrastructure integration.

Digitization changes the forms of exchange in cities. Physical interactions increasingly shift into virtual realms, posing new challenges to urban life.

Future mobility will be based on the principle of "using instead of owning". There will be no classic division between private and public modes of transport. There will be various forms of transportation to meet people's differing needs.

Reducing car traffic is a central megatrend in urban development. Cities like Los Angeles and Paris have already implemented measures to decrease car use.

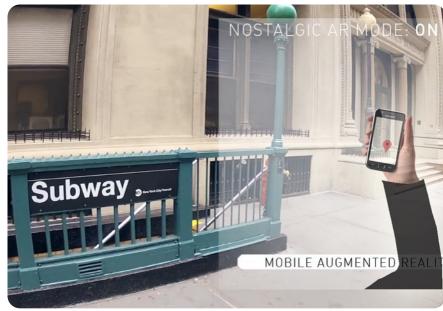


Al will be used in many areas to make urban services more efficient. Examples include **faster responses to citizen inquiries** and support in the social sector. Al can also help **achieve net-zero goals** by creating models to improve sustainability. One example is optimizing wastewater treatment plants to save resources.

Quantum computing will be especially important for data security. It could help safeguard tax and personal data and simplify urban services.

Slow traffic (e.g., cycling, walking) should be promoted, while motorized individual transport plays only a marginal role in the future. Automated shuttles could serve the outskirts, while trams and underground mobility would be preferred in the inner city.









11. Role of Al in cities

Al is revolutionizing urban services by streamlining logistics, resource management, and mobility systems, making cities more efficient and sustainable. It tackles challenges such as traffic congestion, energy usage, and waste, while enhancing governance through data-driven insights. In healthcare, Al tools like predictive analytics and robotic caregivers are transforming patient care, while generative Al improves mobility with smarter, personalized solutions. Despite these benefits, concerns around data privacy, biases, and ethical implications highlight the need for responsible implementation.

12. AR/VR & immersive experiences

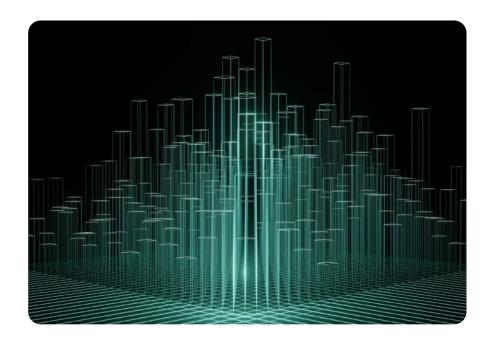
AR and VR technologies are reshaping urban environments by introducing immersive experiences in work, leisure, and property development. These tools improve interaction and engagement, offering realistic visualizations for real estate projects, virtual workplaces, and enhanced recreational activities. By incorporating AR and VR into urban ecosystems, cities are driving innovation in design, collaboration, and community engagement, creating smarter and more interactive urban spaces.

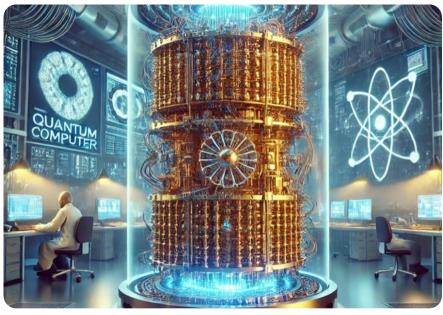
13. Digital city services

Digitalizing city services is changing urban governance by simplifying access to resources and increasing efficiency through smart technologies and online platforms. Tools like digital permits, e-governance systems, real-time public transit updates, and Al-driven management enhance convenience and responsiveness. By cutting bureaucratic delays and promoting transparency, these advancements make urban services more inclusive and accessible to all residents.

14. Advanced prefabrication and modular design

Modular and prefabricated construction methods are transforming urban development by offering cost-efficient, scalable, and adaptable solutions for diverse environments. These methods significantly reduce construction time, waste, and labor costs while enabling flexibility in design and functionality. As cities grow and face resource constraints, prefabricated solutions are becoming a critical tool to meet housing, and infrastructure demands sustainably and efficiently.









15. Digital urban twins

The adoption of virtual city replicas, or digital twins, is revolutionizing urban planning by providing real-time monitoring and datadriven insights into city infrastructure. These replicas enable cities to simulate scenarios, optimize resource allocation, and test the impact of future developments, enhancing decision-making and efficiency. By integrating loT and Al technologies, digital urban twins are becoming essential tools for creating smarter, more resilient urban environments.

16. Quantum technology

Quantum computing holds transformative potential for cities, offering advancements in logistics, cybersecurity, and complex data processing. It enables real-time optimization of traffic management and supply chains, solving intricate logistical challenges with unprecedented efficiency. Quantum communication further strengthens data security through unbreakable encryption, while research hubs foster collaboration between academia and industry, driving innovative solutions to urban challenges with unparalleled computational power.

17. Advanced communication networks

The deployment of advanced networks like 5G and emerging 6G technologies is accelerating urban digital transformation by enabling faster and more reliable communication. These networks provide the backbone for smart cities, supporting IoT devices, real-time data exchange, and connected infrastructure. Enhanced connectivity is crucial for optimizing urban services, improving mobility, and fostering innovation across all aspects of city life.

18. Modernization of infrastructure

Modernization of infrastructure is essential as aging systems in established cities and rapid growth in urbanizing areas create significant challenges. Older cities face mounting pressure to upgrade outdated systems to meet contemporary demands, while growing cities must expand infrastructure to support increasing populations. By investing in resilient, efficient, and sustainable solutions, cities can address these pressing needs, ensuring long-term functionality and adaptability in the face of urban and environmental pressures.





19. Decentralized networks

Decentralized networks are reshaping urban systems by distributing data and decision-making across multiple nodes, enhancing resilience and efficiency. These networks enable peer-to-peer communication, energy sharing, and localized services, reducing reliance on centralized infrastructure. By fostering greater transparency and empowering communities, decentralized networks are driving innovation in areas such as energy management, communication, and urban governance.

20. Rise of robotics in public spaces

The rise of robotics in public spaces transforms urban living, infrastructure, and development through delivery robots, security bots, maintenance drones, and construction robots that enhance convenience and efficiency. Delivery robots streamline last-mile logistics, and autonomous systems improve public space management through cleaning, surveillance, and real-time assistance.

Construction robots are transforming urban development by automating tasks, improving safety, and accelerating project timelines.

ECONOMIC MEGASHIFTS & TRENDS



URBAN WEALTH INEQUALITIES

Urban wealth inequalities are increasingly shaping the socioeconomic landscape of cities, driven by escalating property prices, financial pressures, and unequal access to resources. The widening gap between affluent and marginalized populations in urban areas underscores the urgent need for inclusive policies and affordable housing solutions. Rising property costs and interest rates have intensified economic pressures, making homeownership sustainable and living unattainable for many residents.

To address these disparities, urban economies are adopting innovative strategies aimed at empowering marginalized groups and fostering equitable growth. Public-private partnerships, dynamic pricing models, and alternative revenue-generation strategies are being implemented to alleviate financial burdens and optimize resource allocation.

Cities are exploring alternative financing methods, such as crowdfunding, tokenization, and digital lending platforms, to democratize access to real estate investment and alleviate affordability challenges. Additionally, comprehensive, data-driven platforms for property valuation and market analytics are gaining traction to promote transparency and fairness in real estate markets.

Affordable sustainable living is also emerging as a critical focus, with cities introducing eco-friendly housing and energy solutions that are both

accessible and cost-effective for diverse populations. By prioritizing mixed-use developments, resilient housing designs, and mobility pricing strategies, cities are creating environments that promote social equity, economic inclusion, and environmental sustainability. These efforts are critical to fostering more balanced urban ecosystems where all residents can thrive.



The biggest challenge for cities is to make these exchange principles possible for everyone.

Andreas Knie



Driving Forces

- Social Housing Needs
- Rising Property Prices
- Pricing Models for Mobility
- Affordable Urban Sustainability

- +↑ Widening gaps between rich and poor
- Inflation and Economic Volatility
- City budget constraints
- **Material Example 2** Alternative financing methods

MEGASHIF SONO MICE

URBAN WEALTH INEQUALITIES

Manifestations



HABIKO affordable homes in UK

Joint venture to deliver 3,000 low-carbon, low-energy affordable homes for rent, targeting up to 100% affordable units set below local market rents.



Real Estate Tokenization Platforms

Platforms like SolidBlock facilitate property tokenization, allowing investors to own fractional shares of real estate. This method democratizes access to property investments, enabling participation with lower capital.



Gentrification of Mexico City

Urban renewal projects have transformed neighborhoods, attracting higher-income residents and businesses, which has led to the displacement of lower-income populations.



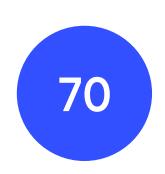
Mixed-Use Development Over Retail Spaces in LA

In Los Angeles, a developer plans to build an 800-unit apartment complex atop a Costco store, including 184 affordable units. This innovative approach aims to integrate affordable housing into commercial spaces, reducing reliance on government subsidies.

Guiding questions

- 1. How can cities address rising property costs and unequal access to resources?
- 2. What role will public-private partnerships and alternative financing methods play in reducing urban wealth inequalities?
- 3. How can data-driven platforms improve transparency and fairness in urban real estate markets?
- 4. How will eco-friendly, affordable housing solutions promote social equity and sustainable living in cities?
- 5. To what extent can mixed-use developments and mobility pricing foster more balanced urban ecosystems?

Facts & Figures



Of Forbes Magazine's 400 richest American billionaires, 70 live in New York City, while 17% of people there live in poverty. Wikipedia

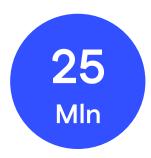


Current projections suggest that the number of people living in extreme poverty worldwide will remain above 600 million in 2030. NUA



From 2010 until 2024, in the EU, rents increased by 24.8% and house prices by 51.8%.

Eurostat



25 Million homes are managed by the European Federation of Public, Cooperative and Social Housing, 11% of all existing dwellings in Europe. Housing Europe

EMERGING URBAN ECONOMIES

Emerging urban economies are transforming the traditional urban landscape by embracing alternative economic principles such as the circular economy, sharing economy, and digital economy. These models emphasize sustainability, resource efficiency, and innovative solutions to urban living and commerce.

Circular economy initiatives are gaining momentum, with cities adopting practices like urban farming and the use of eco-friendly materials in construction and public spaces to minimize waste and maximize resource use. These approaches not only lower environmental impact but also align with urban goals of creating regenerative economies that replenish resources rather than depleting them.

The sharing and digital economies further underpin the transformation of urban systems, fostering collaboration, innovation, and inclusivity. Platform technologies have enabled resource sharing, costefficient rental models, and shared property use, addressing housing supply challenges while strengthening social cohesion.

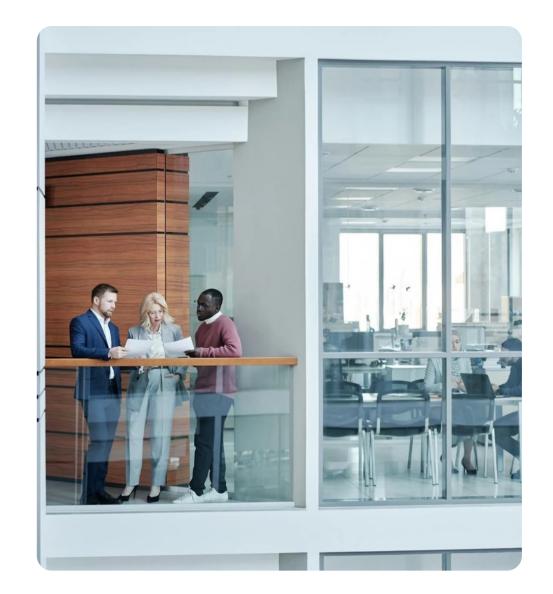
The digital economy is also reshaping urban commerce, with e-commerce, cashless payments, and online business models becoming integral to urban life.

These shifts allow cities to create more resilient and flexible economies, offering opportunities for growth while supporting sustainability and equity. By integrating these emerging models, urban areas are redefining the way resources are managed, used, and shared, laying the foundation for more sustainable and innovative urban ecosystems.



The circular economy is a key element for using resources efficiently and minimizing waste. The goal is for every component to be reused.





Cecile Oberholzer

Driving Forces



Circular Economy



New payment methods



Vertical farming



Eco-friendly materials



Sharing Economy



Growing E-commerce



Rise of Platform Business Models



Regenerative urban economies

MEGASHIF CONONIC

EMERGING URBAN ECONOMIES

Manifestations



Toronto's Circular Procurement

Toronto encourages local businesses to adopt circular practices, fostering innovation and sustainability in public procurement.



Amsterdam's Circular Economy Roadmap

Amsterdam aims to become a fully circular city by 2050, implementing initiatives like the Buiksloterham project, a 100-hectare mixeduse development promoting closed-loop resource management and energy-efficient construction techniques.



China's Eco-Industrial Parks

EIPs are strategically designed as a blueprint for industrial clustering and transformation based on clean production mandates, and circular economy and industrial ecology principles.



Open Network for Digital Commerce in India

Launched in 2022, ONDC is an initiative by the Indian government to democratize digital commerce by providing an open network for buyers and sellers. It aims to reduce monopolistic practices and enhance market accessibility for small retailers across various cities.

Guiding questions

- 1. How can cities integrate circular economy principles to minimize waste?
- 2. What role will the sharing economy play in addressing housing challenges and fostering social cohesion?
- 3. How will the digital economy reshape urban commerce and enhance economic resilience?
- 4. How can platform technologies drive collaboration and inclusivity in urban systems?
- 5. To what extent will emerging urban economies support sustainability and equity in cities?

Facts & Figures



The circular economy could be worth as much as \$700 billion in global consumer good material savings. OECD

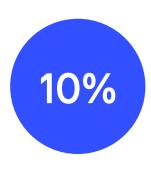


It is estimated that globally by 2050, the levels of municipal solid waste will double.

OECD



69% of people living in EU cities use internet banking, compared to 58% of those living in rural areas <u>Eurostat</u>



P2P Cashless
payments, through
mobile phone apps
tripled between 2019
and 2022 from 3% to
10% of all P2P
payments in Europe
ECB

WHAT THE EXPERTS SAY

The decline of the classical industrial society requires us to to adapt economic structures and values to address social changes.

Department stores are in crisis, and there is a need to improve quality and variety in retail. Especially **small-scale and diverse retail structures play a crucial role**.

There is a lot of potential in the revival of the market hall, with lots of small specialist shops, food corners and arts and crafts under one roof.

Shopping will also happen digitally, but it will always happen physically, you can see that with Apple or Amazon. Amazon is planning to open huge stores again.

Cities must have a "communist fundamental function" to enable exchange. While companies play an important role, there must be a strong regulatory mechanism to protect the public interest.

"The ideal city is a marketplace where people and goods are freely accessible. Cities should promote exchange and tolerate ambiguities."

A favorable economic environment is crucial for a city's attractiveness. This includes tax benefits, training opportunities, and support for businesses. Businesses need support in the form of financing, spaces, and places where innovation and collaboration can thrive.

A functioning ecosystem that promotes exchange between cities, countries, and companies is important to remain flexible and well-positioned.











21. Integrative retail spaces

Retail is evolving with the rise of experiential spaces that blend shopping, entertainment, and community engagement, offering customers more immersive experiences. The integration of e-commerce is reshaping the sector by combining physical and digital channels for seamless access to products and services. Multifunctional hubs are also emerging as key centers for shopping, deliveries, and social activities, redefining the purpose of retail spaces in urban settings.

22. Companies shaping cities

Businesses are increasingly shaping urban innovation and economic activity by fostering startup- and building vibrant tech ecosystems that drive metropolitan economies. Cities are thereby becoming global hubs of innovation, with businesses influencing governance and policy making to address challenges such as data privacy, sustainability, and economic inclusion. The growing role of big tech in urban environments highlights the need for balanced regulation to ensure that economic growth aligns with public interests and equitable development.

23. Digital currencies

City-level and community cryptocurrencies are upgrading urban financial systems by strengthening local economies and increasing economic resilience. These digital currencies help retain value within communities, encouraging local spending and reducing vulnerability to global economic fluctuations. By enabling decentralized, seamless transactions, they foster innovative financial ecosystems that empower citizens and support robust urban economies.

24. Investment in infrastructure & tech-transformation

Urban investments are transforming cities by reshaping infrastructure, technology, and sustainability. Priorities include smart systems such as Al-driven mobility, IoT-enabled infrastructure, and renewable energy grids, all aimed at boosting efficiency, resilience, and inclusivity. With support from public-private partnerships and global initiatives, cities are becoming hubs of innovation and sustainability, though unequal funding risks deepening disparities between urban regions.









25. Rise of public-private partnerships

Collaboration between governments and the private sector is revolutionizing urban development by streamlining the delivery of infrastructure, services, and innovation.

Public-private partnerships are advancing sustainable construction projects and building innovative ecosystems to tackle critical urban challenges. By leveraging combined resources and expertise, these partnerships create shared value, enhance service delivery, and help shape resilient, future-ready cities.

26. Knowledge economy

The growing emphasis on intellectual capital, research, and innovation is shaping cities into dynamic centers for technology, education, and skilled labor. Knowledge-based economies are increasing the demand for highly skilled workers, opening up opportunities in advanced tech and service sectors. Urban initiatives like innovation centers and research collaborations are bringing together academia, businesses, and citizens to fuel growth and position cities as leaders in creativity and economic progress.

27. Localization of supply chains

Relocating production and sourcing closer to urban centers is boosting supply chain resilience, cutting transportation costs, and driving local economic growth. In response to geopolitical and economic disruptions, cities are focusing on localized supply chains to secure material availability and reduce reliance on global trade. This approach promotes sustainable urban development while strengthening regional economies through job creation and lowering the environmental footprint of long-distance transport.

28. Proliferation of decentralized energy trading

Peer-to-peer energy trading systems are reshaping urban energy management by allowing consumers to buy and sell locally generated renewable energy. These decentralized platforms reduce dependence on centralized grids, boost energy resilience, and encourage sustainable urban development. By giving consumers greater control and integrating renewable energy sources, cities are adopting innovative economic models and accelerating the shift to cleaner, more efficient energy systems.





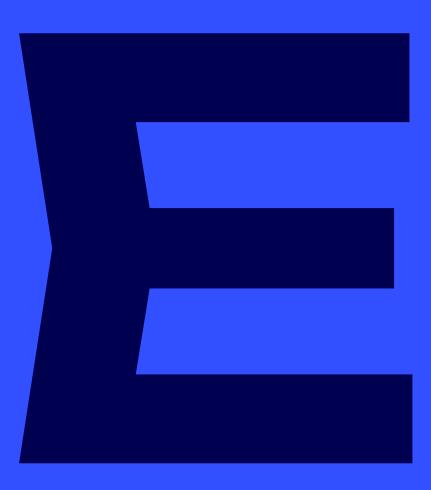
29. Revival of craftmanship

The revival of craftsmanship is altering urban economies by emphasizing local, small-scale production and direct connections with makers. Consumers increasingly seek unique, high-quality goods created by individuals or small brands, valuing authenticity, ethical practices, and the "made here" experience. Cities are fostering this trend through artisan hubs, maker spaces, and initiatives that celebrate personal craftsmanship, driving cultural preservation and supporting hyperlocal economies.

30. Metropolitan economic hubs

Metropolitan economic hubs are key drivers of regional and global growth, creating vital links between urban centers and surrounding rural areas. These hubs attract a diverse range of industries, startups, and investments by leveraging advanced infrastructure, talent pools, and cultural vibrancy. Their role extends beyond cities, creating economic synergies across regions, fostering collaboration, and driving inclusive, sustainable growth that integrates rural areas into the global economy.

ENVIRONMENTAL MEGASHIFTS & TRENDS



URBAN CLIMATE RESILIENCE

Urban climate resilience is becoming a critical focus for cities worldwide as they face increasing challenges from extreme weather, pollution, and resource scarcity. Adaptive policies, robust infrastructure, and innovative planning are essential to ensure cities remain livable. sustainable, and competitive in the face of climate change.

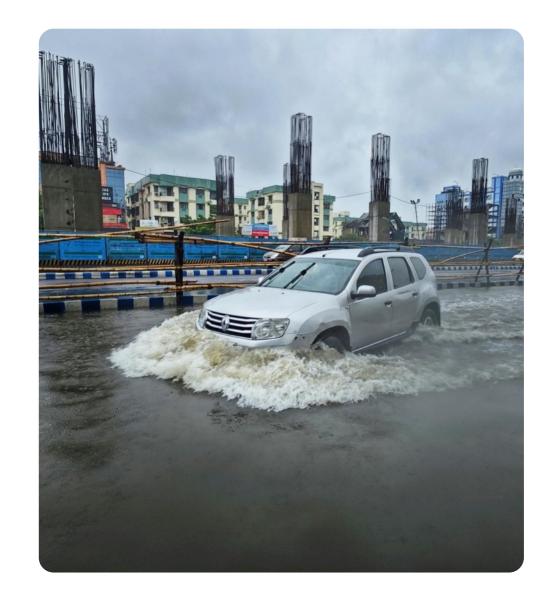
Cities are prioritizing resilience strategies such as integrating green infrastructure, adopting climateadaptive architecture, and enhancing readiness for localized crises like floods, heatwaves, and storms. These efforts not only mitigate the immediate impacts of climate challenges but also foster longterm sustainability and economic stability in urban environments.

Resilient urban planning plays a vital role in addressing climate challenges by incorporating resource-efficient designs and systems capable of withstanding natural disasters and resource shortages. For instance, cities are investing in stormwater management systems, permeable pavements, and flood barriers to combat rising flood risks. Climate-adaptive architecture is also gaining traction, with buildings designed to endure extreme climates and optimize energy use.

Mitigating urban heat is particularly urgent as dense cityscapes tend to experience higher temperatures due to the heat island effect.

Large-scale initiatives such as urban forests, green roofs, and reflective building materials are being implemented to reduce city temperatures and improve air quality. Additionally, advanced cooling technologies and water management systems are addressing the dual challenges of rising temperatures and water scarcity.

Cities are also strengthening localized crisis response mechanisms to prepare for global challenges, including pandemics and climate events. Integrated governance models and data-driven technologies are helping urban areas respond more effectively to extreme weather events and resource shortages. By fostering collaboration between policymakers, businesses, and communities, cities are ensuring that climate resilience becomes a foundational aspect of their growth and development strategies.



Driving Forces



Extreme weather events



Rising sea levels and flood risks



Resilience in Urban Planning



Urban Heat Mitigation



Localized Urban Crisis Response



Climate-Adaptive Architecture



Biodiversity and water management



Real-time climate data monitoring

URBAN CLIMATE RESILIENCE

ENVIRONMENTAL

Manifestations



<u>Urban Shade</u> Structures

Phoenix has implemented shade structures across public spaces to provide relief from extreme heat, enhancing comfort and safety for residents.



Rotterdam Water Squares

When heavy downpours hit Rotterdam, some parts of the city flood quickly. With a clever redesign, squares in residential areas can catch the rainwater and drain it away in a controlled manner. At the same time, these water squares are an attractive meeting place in the neighbourhood.



Sponge City

Karachi in Pakistan is implementing climate-smart designs inspired by the "sponge city" concept, including terracotta pavements and stormwater wells, to protect the city from flooding.



Singapore 'City in Nature'

Singapore has transformed into a 'City in Nature' by integrating over 400 parks and four nature reserves, with plans to add 300 hectares of green spaces by 2026. Initiatives like the 'Green Plan 2030' aim to plant a million trees and expand skyrise greenery, enhancing urban biodiversity and residents' quality of life.

Guiding questions

- 1. How can cities integrate green infrastructure and climate-adaptive architecture to enhance resilience against extreme weather?
- 2. What role will urban heat mitigation strategies play in combating the heat island effect?
- 3. How can cities use data-driven technologies to improve crisis response to climate challenges and resource scarcity?
- 4. To what extent can collaboration between policymakers, businesses, and communities drive effective climate resilience strategies?
- 5. How will climate change impact migration streams and economic activity of impacted cities?

Facts & Figures



On average, urban areas are 0.6–3.9°C warmer during the day and can remain as much as 2.8°C warmer at night.

MIT Climate



Number of cities exposed to extreme temperatures (above 35°C) is predicted to triple by 2050 Citymonitor



One in ten properties in New York, New Jersey, and Connecticut are classified as seriously vulnerable to flooding. Reuters



The average urban tree cover for cities in the EEA-38 is 30%, though this varies widely among cities.

European Environment Agency

ENVIRONMENTAL

SUSTAINABLE CITY DEVELOPMENT

Sustainable city development has become a core focus for urban areas seeking to balance economic growth with environmental stewardship and longterm viability. Cities are integrating green policies, waste management systems, and renewable energy sources into their infrastructure to ensure sustainability remains at the forefront of urban planning.

Smart building technologies are key to optimizing energy use and reducing emissions. Automated energy systems, efficient HVAC solutions, and renewable energy integration are transforming buildings into environmentally responsible urban assets. Coupled with green building certifications and eco-friendly construction materials, smart buildings are setting new benchmarks for environmental responsibility in urban development.

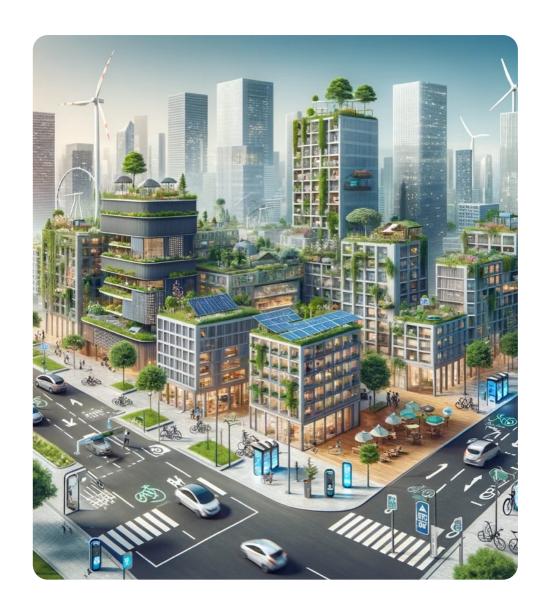
Circular economy principles are reshaping urban development by promoting resource reuse, waste reduction, and closed-loop systems. Cities are repurposing infrastructure, adopting recycling initiatives, and implementing community composting to drive resource efficiency. These practices align urban growth with global sustainability goals.

Air pollution remains a significant challenge for cities, posing health risks and impacting the overall quality of urban life. In response, cities are implementing stricter air quality standards, expanding green spaces, and transitioning to sustainable energy

sources to reduce emissions. Cleaner transportation options, such as electric vehicles and cycling, are also contributing to improved air quality. These measures reflect the growing public demand for healthier, more sustainable urban environments and underline the need for innovative, forward-thinking approaches to urban planning and development.

If we don't somehow significantly minimize the avalanche of metal, we won't get any further.

Heiner Monheim



Driving Forces



Sustainability Policies



Smart Buildings for Sustainability



Air Pollution



Circularity

Sustainable energy generation

Increased attention for public health

15 min city concepts



Green Urban Design

SUSTAINABLE CITY DEVELOPMENT

MEGASHIFT ENVIRONMENTAL

Manifestations



London's Ultra Low Emission Zone

London's ULEZ charges vehicles that do not meet stringent emissions standards, reducing nitrogen dioxide levels by approximately 44% within the zone.



Bosco Verticale Milan

The Vertical Forest is the prototype building for a new format of architectural biodiversity which focuses not only on human beings but also on the relationship between humans and other living species. The two towers that are respectively 80 and 112 metres high, house a total of 800 trees



Stockholm's Congestion Tax

Stockholm introduced a congestion tax in 2006, leading to a 10-15% reduction in traffic volumes and improved air quality.



Circular House in Berlin

The warehouse of a former brewery in Berlin's Neukölln district is now being used for work and living. The project named CRCLR House has been designed following the principles of circular economy.

Guiding questions

- 1. How can cities integrate smart building technologies to optimize energy use and reduce emissions?
- 2. How can cities address air pollution through stricter standards, green spaces, and sustainable energy sources?
- 3. To what extent can cleaner transportation options improve air quality and enhance urban sustainability?
- 4. How will sustainable city development balance economic growth with environmental responsibility?

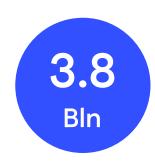
Facts & Figures



In 2019, 41% of the cities still experienced PM2.5 air pollution levels that exceed even the least-stringent WHO guidelines State of Global Air



Cities, despite covering only 2% of Earth's total land surface, account for approximately 70% of global material use and waste production. KU Leuven



European Investment
Bank's lending to
circularity projects
reached EUR 3.8
billion in the period
2019–2023. <u>European</u>
Environment Agency



With nearly 62% of its residents commuting by bike daily, Copenhagen serves as a model for sustainable transport solutions. Sustainable Living

WHAT THE EXPERTS SAY



Concepts like resilient cities and low-carbon development are embedded in international agendas (SDG 11, UN-Habitat). The **challenge is implementation at the local level**.

Achieving climate goals involves more than technology; it **requires systemic changes**, from waste management to energy efficiency and emission reductions.

Cities must create more green spaces to become climate-resilient. Green spaces help regulate temperature and improve air quality. This also helps to improve urban heat balance. Cities should not overheat and must implement measures for cooling and ventilation.

Cities must be adapted to local climatic conditions. This requires careful planning that takes regional characteristics into account.

Using renewable raw materials such as wood is crucial. Cities should rely on materials that are sustainable and environmentally friendly.

Zurich has the goal to be emission-free by 2040, with the help of technologies like carbon capture and solar energy.

Carbon capture technology will be introduced in the waste incineration plant by 2035 to liquefy and store CO₂. Some will be mixed into concrete, while the rest is transported to Norway for storage.

In the construction industry, there are already **projects that rely entirely on reused components**. These pilot projects should become mainstream to promote sustainability in construction.











31. Urban biodiversity conservation

Cities are increasingly focusing on protecting and restoring natural ecosystems by incorporating green spaces, wildlife corridors, and sustainable urban planning into their development strategies. These efforts enhance biodiversity, support native species, and improve urban resilience to environmental challenges like climate change. By integrating nature into cityscapes, urban areas become healthier, more livable, and better equipped to balance ecological preservation with human activity.

32. Waste-free cities

Cities are transitioning toward zero-waste urban environments by adopting recycling, upcycling, and circular economy practices to minimize landfill use and environmental impact. Sustainable waste management systems are being integrated into urban infrastructure, emphasizing resource recovery and reuse to reduce waste generation. These activities not only support environmental sustainability but also foster innovation and economic growth by turning waste into valuable resources.

33. Floating cities

Floating cities are redefining urban living by addressing land scarcity, rising sea levels, and environmental resilience. These modular, waterborne habitats integrate renewable energy, self-sustaining systems, and innovative urban design to create adaptable communities. As the concept gains relevance, efforts focus on integrating new technologies into existing designs or pioneering entirely new solutions, positioning floating cities as flexible, future-proof hubs for climate-adaptive living and innovation.

34. Urban carbon neutrality

Achieving zero net carbon emissions involves integrating renewable energy systems, energy-efficient infrastructure, and sustainable transportation into urban frameworks. Efforts like transitioning to electric vehicles, developing green buildings, and implementing carbon offset programs help address remaining emissions. These strategies place cities at the forefront of climate action, fostering cleaner, healthier, and more resilient environments.









35. Biophilic design

The integration of natural elements into urban spaces, such as plants, natural lighting, and organic materials, is transforming cities into healthier and more livable environments.

Biophilic architecture and green infrastructure improve air quality, reduce stress, and foster a sense of well-being among urban residents. By incorporating nature into buildings and public spaces, cities are enhancing the quality of life while promoting sustainable and harmonious urban development.

36. Urban farming

Urban gardens, vertical farming, and rooftop agriculture are reshaping food systems by boosting local production and lowering environmental impact. These innovations bring sustainable food production into residential and commercial areas, cutting the need for long-distance transportation and reducing carbon footprints. Beyond sustainability, urban agriculture strengthens community resilience and social connections while creating accessible food solutions and green spaces that improve urban livability.

37. Sustainable and smart materials

Innovative materials such as self-healing concrete, zero-carbon steel, and regenerative options reshape urban infrastructure by boosting resilience and cutting maintenance costs. These advanced materials enhance durability and performance while meeting stricter sustainability standards to reduce environmental impact. Incorporating solutions like hempcrete and mycelium enables greener, more sustainable urban environments that address climate change and resource scarcity.

38. Renewable energy in urban design

Renewable energy systems like solar panels, wind turbines, and decentralized grids are turning urban developments into sustainable energy hubs. These systems lower environmental impact, improve energy efficiency, and accelerate the shift to decarbonized energy solutions. By pairing renewables with smart technologies, cities are advancing energy self-sufficiency and supporting the electrification of housing, transportation, and infrastructure.





39. Smart resource management

Digital technologies and data-driven solutions are transforming how urban resources like water, energy, and waste are managed. IoT-enabled systems and advanced analytics deliver real-time insights, enabling more efficient use of resources while reducing waste and environmental impact. These innovations are essential for promoting sustainable urban living and ensuring effective resource management for expanding populations.

40. Renovation & retrofitting

The transformation of older buildings is becoming central to urban sustainability efforts, focusing on energy-efficient upgrades and modern technologies. Retrofitting projects prioritize preserving historical architecture while integrating renewable energy systems, advanced insulation, and smart technologies to enhance environmental performance. By revitalizing aging infrastructure, these efforts extend the lifespan of buildings, reduce energy consumption, and create more sustainable and resilient urban environments rooted in cultural heritage.

POLITICAL/LEGAL MEGASHIFTS & TRENDS



DIGITALIZATION AND CO-CREATION OF CITY GOVERNANCE

Decentralized digital urban governance is transforming how cities are managed by shifting power from centralized authorities to participatory and collaborative models. This approach emphasizes inclusivity, transparency, and accountability, allowing citizens to play an active role in shaping policies and urban development.

By involving residents in decision-making processes, cities foster trust, encourage civic engagement, and ensure that public spaces and services meet the diverse needs of their communities. This shift toward participatory governance creates more equitable and resilient cities that prioritize the voices of all stakeholders.

Advanced technologies, such as e-Government platforms, blockchain, and real-time analytics, are key enablers of decentralized urban governance. These tools enhance transparency and efficiency, making it easier for citizens to access information, engage with city leaders and improve public service delivery. Such transformations can position cities as leaders in adopting innovative solutions for governance and resource management.

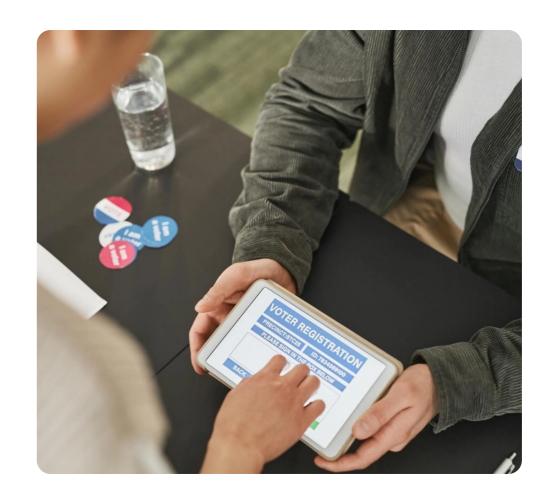
Collaborative urban development is at the heart of decentralized governance, with cities investing in initiatives that involve citizens in co-creating public spaces and shaping policies. Programs like participatory budgeting, where residents decide how municipal funds are spent, exemplify this shift toward inclusive decision-making. By creating platforms for

open dialogue and fostering partnerships between governments, private sectors, and citizens, cities are driving sustainable growth and innovation. This collaborative approach ensures that urban development aligns with the values and priorities of the communities it serves, ultimately leading to more vibrant and inclusive urban ecosystems.



Cities must move away from silobased approaches. Achieving sustainable urban development requires integrated public policies and cross-sector collaboration.





Stéphane Pean

Driving Forces



E-Government Platforms



Digital Democracy



Citizen co-creation



Citizen-centric Innovation



Smart Cities & Districts



Blockchain-Driven Urban Economies



Open Data Initiatives

DIGITALIZATION AND CO-CREATION OF CITY GOVERNANCE

Manifestations



Estonia's e-Residency Program

The program allows non-Estonians access to Estonian services such as company formation, banking, payment processing, and taxation.



Participatory Budgeting

Since 2014, Paris has allocated a portion of its municipal budget for projects proposed and voted on by citizens. This initiative empowers residents to directly influence urban development, resulting in diverse projects such as the creation of green spaces and community centers.



<u>Dubai Blockchain</u> <u>Strategy</u>

Dubai's blockchain strategy aims to digitize 100% of its government services, creating an efficient, paperless, and secure governance model.



Better Reykjavik

Online platform enables citizens to propose, debate, and prioritize ideas to improve the city. Since its inception, numerous citizensuggested projects have been implemented, ranging from new playgrounds to improved public services, demonstrating the impact of collaborative governance.

Guiding questions

- 1. How will decentralized governance empower citizens to shape urban policies and development?
- 2. What role will technologies like blockchain and e-Government platforms play in enhancing transparency and public engagement?
- 3. How can participatory initiatives foster equitable and inclusive urban development?
- 4. How can cities balance technological innovation with inclusivity in decentralized urban governance?

Facts & Figures



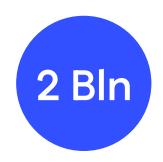
Municipalities in Brazil adopting PB have experienced a 39% increase in local tax revenues compared to those without such practices. World Bank



400 client cities worldwide of Decidim, an open-source platform for participatory democracy. Decidim



One third of Europeans still lack basic digital skills, and up to 80% struggle with digital technologies at different levels. Eurocities Monitor



With roughly two billion eligible voters, 2024 is being described as the largest election year in history. Statista

GLOCALIZATION

City governments aim to create better living conditions for their citizens in a VUCA world, prioritizing own city interests. Geopolitical tensions and territorial disputes are increasingly impacting cities' development, straining regional cooperation and influencing their integration into global networks. As cities compete for talent, resources, and investment, they prepare for future instabilities caused by regional conflicts, disputes and climate change, which may disrupt infrastructure and economic activity.

The impact of geopolitical tensions on urban infrastructure is profound, influencing the planning, financing, and execution of critical projects. Regional disputes can delay cross-border infrastructure initiatives, such as transportation corridors and energy pipelines, that are vital for economic growth and connectivity. Cities caught in the crossfire of geopolitical conflicts may also face increased costs and delays in accessing materials and labor, further straining urban development. To mitigate these risks, cities are focusing on fostering self-sufficient, localized infrastructure systems that can adapt to global uncertainties while maintaining functionality and resilience.

Despite these challenges, cities are leveraging glocalization strategies to remain integrated into global networks while catering to local needs. By balancing their global ambitions with localized approaches, cities can attract diverse talent, secure investment, and build strong partnerships.

Collaborative urban diplomacy, such as city-to-city agreements and participation in global city networks, is becoming a key strategy for fostering regional cooperation and economic stability. Cities develop strategies to secure local supply of critical resources like food and energy. These efforts enable cities to navigate disruptions effectively, ensuring their continued growth and relevance in an interconnected world.



Establishing this function that a city has, ideally as a balanced permanent crisis management, is certainly the challenge of the future.

Andreas Knie



Driving Forces



Geopolitical tensions



Regional Trade Zones



Urban Diplomacy & City Networks



War for Talent



Urban-Local Integration in Global Policy



Localized Energy Systems



Localized Climate Action Plans



Glocal Food Systems

GLOCALIZATION

Manifestations



Kashmir Conflict

The ongoing territorial dispute over Kashmir between India and Pakistan has led to militarization and restricted economic development in the region, impacting urban growth in cities like Srinagar.



City Diplomacy

Cities such as Hamburg, Prague, Amsterdam, The Hague, and the City of London maintain their own embassies to the European Union in Brussels, engaging in international relations independently of their nation-states



Economic Sanctions

Sanctions imposed on Russia have had reciprocal effects on Western economies, affecting businesses and financial institutions in major cities that had economic ties with Russian entities.



Local food supply

Amsterdam focuses on localizing food production through urban farming and vertical agriculture. From city vineyards to circular pig farms, the capital is home to diverse forms of sustainable agriculture and flourishing as a landscape for conscious consumption.

Guiding questions

- 1. How can cities develop self-sufficient infrastructure systems to adapt to global uncertainties and disruptions?
- 2. What role will urban diplomacy and city-tocity agreements play in fostering regional cooperation and economic stability?
- 3. How will geopolitical tensions influence cities' access to critical resources and their integration into global networks?
- 4. To what extent can glocalization strategies help cities attract talent, secure investment, and build resilience?

Facts & Figures



In the past five years, conflict levels have almost doubled.

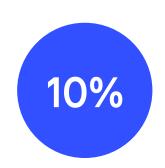
ACLED Data



-22% change in property prices in Stockholm form Q2 2022 – Q2 2023, due to the Ukraine War and its economic impacts. Politico



77% of millennials consider relocation to another city for work. Forbes



President-elect
Trump campaigned
on imposing 10%
universal tariff and a
targeted 60% punitive
tariff on Chineseoriginating goods.
Crowe

WHAT THE EXPERTS SAY



Cities need **more autonomy, political power, and financial resources** to implement transformative changes. National-level centralization often hinders effective local-level solutions.

Successful transitions to sustainable mobility require **coherent policies**, data-driven decision-making, and citizen engagement rather than relying solely on market solutions or techno-fixes.

Surveillance-based urban management and the **influence of global tech platforms** differ across regions. Cities must navigate between global players like U.S. and Chinese models of digital governance.



Adapting legal frameworks is one of the biggest challenges in infrastructure reduction. Building regulations and land-use plans must be modified.



There is an urgent need for financial reform to strengthen the municipal level and expand the scope for urban development.

"We have extremely limited scope for action for the decision-makers who are actually supposed to shape the future but are constantly being held back by everyone, so we need fiscal and regulatory measures."









41. Urban security concerns

Urban security concerns are growing as cities face increasing threats from cyberattacks, terrorism, and crime, requiring innovative and resilient solutions to ensure public safety. Advanced technologies like IoT, AI, and real-time analytics are being integrated into surveillance and emergency response systems to provide holistic and proactive security measures. However, the rising interconnectivity of smart city infrastructure introduces new vulnerabilities, emphasizing the need for robust data protection, infrastructure resilience, and comprehensive cybersecurity strategies.

42. Migration policy challenges

Migration policy challenges are intensifying as cities strive to manage increasing migration flows while balancing social, economic, and cultural impacts. Developing effective policies requires addressing integration issues, such as access to housing, employment, and social services, while fostering social cohesion in diverse urban environments. These complexities demand a balanced approach that ensures both the inclusion of migrants and the sustainability of urban infrastructure and resources.

43. Data-driven governance

Data-driven governance is transforming urban management by leveraging analytics to optimize resource allocation, improve decision-making, and enhance transparency. By using real-time data, cities can reduce bureaucratic inefficiencies and deliver more equitable and efficient public services. However, this approach raises ethical challenges around data privacy, potential biases in algorithms, and the risks of overcentralized decision-making, necessitating robust safeguards to ensure accountability and inclusivity.

44. Inclusivity policies

Inclusivity policies are becoming a cornerstone of urban development, aiming to create equitable environments where all residents have access to resources, opportunities, and decision-making processes. These policies address systemic inequalities by prioritizing affordable housing, diverse representation, and access to education and public services for marginalized communities. By fostering participation and inclusivity, cities can ensure sustainable growth that benefits all residents, regardless of their socioeconomic background, gender, or ethnicity.









45. Ground and property valuation regulation

Ground and property valuation regulation plays a critical role in ensuring transparency and fairness in real estate markets, preventing speculative pricing and inequities. These regulations establish standardized methods for property assessment, promoting stability and accountability in urban development. By balancing market dynamics with equitable practices, valuation regulations help cities foster sustainable growth and provide better access to housing and investment opportunities.

46. Green regulation and ESG compliance

Green regulation and ESG compliance are driving the adoption of sustainable practices by setting clear standards for environmental, social, and governance responsibilities. These policies incentivize businesses and urban developers to align with sustainability goals through tax benefits, grants, and access to green financing, while imposing penalties for non-compliance. By fostering accountability and promoting eco-friendly innovation, green regulations are helping cities achieve positive environmental and social outcomes while addressing climate change challenges.

47. Cities role in global governance

Cities are increasingly taking on a pivotal role in global governance by engaging in international diplomacy and forming transnational alliances to address global challenges like climate change and migration. Through city networks and coalitions, urban centers are sharing best practices, advocating for sustainable policies, and driving collective action on issues traditionally managed by national governments. This growing influence of cities in global decision-making highlights their importance as key actors in fostering resilience, innovation, and collaboration on a worldwide scale.

48. Censorship and freedom of speech

Censorship and freedom of speech are increasingly influencing urban discourse, with digital surveillance and media control shaping public communication. As policymakers intensify censorship, the role of fact-checking will become pivotal in preserving media independence and openness. Populist leadership trends may further complicate this balance, challenging cities to protect free expression while managing security and governance concerns. The evolving landscape will require cities to navigate these tensions to maintain a healthy, democratic public sphere.

89





49. City fiscal autonomy

City fiscal autonomy is essential for empowering urban areas to independently manage resources, fund infrastructure, and deliver services tailored to local needs. By gaining control over revenue generation through mechanisms like local taxation, public-private partnerships, and grants, cities can address unique challenges more effectively. Strengthened fiscal autonomy enhances urban resilience and innovation while reducing dependence on national governments for financial decision-making.

50. Regulatory hurdles

Regulatory hurdles often slow down urban development and innovation by imposing complex, time-consuming approval processes and stringent compliance requirements.

These barriers can discourage investment, delay infrastructure projects, and limit the adoption of new technologies in cities.

Streamlining regulations and creating adaptive frameworks are essential for fostering innovation, promoting sustainable growth, and enabling cities to respond effectively to evolving challenges.

BLUEMARROW Scenarios for cities of the future

APPENDIX 2: KEY TRENDS & SCENARIO CORES



2 COMPONENTS TO DEVELOP SCENARIOS

Scenarios describe plausible developments of cities of the future. They are driven by 11 fundamental megashifts and enriched by future developments of the most impactful and uncertain trends shaping the future of cities.

11 fundamental megashifts driving cities of the future

Megashifts portray higher level trends that fundamentally drive the future of cities. They are categorized along the STEEP framework and consist of a bundle of driving forces.



50 trends shaping cities of the future

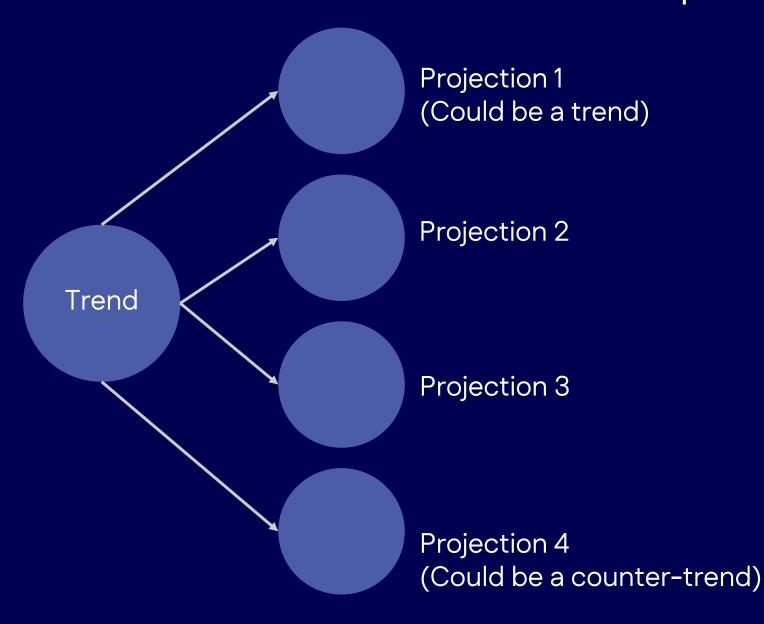
Trends are individual aspects shaping the future of cities. They are categorized along the STEEP framework and vary in terms of their level of impact and the uncertainty related to their future development.

Social	TECH.	ECONOMIC	ENVIRON.	POLITICAL
Trend Trend				
Trend Trend				
Trend Trend				
Trend Trend				
Trend Trend				

6. Urban Wealth Inequalities

DEVELOPING FUTURE PROJECTIONS

Megashifts and key trends can develop in different directions. These possible different future developments ("projections") create the basis for the scenario development.



Projections

Projections describe possible different future developments of an uncertain trend or a megashift. They should not only include preferred outcomes but also negative alternatives. They should be mutually exclusive to ensure heterogenous scenarios.

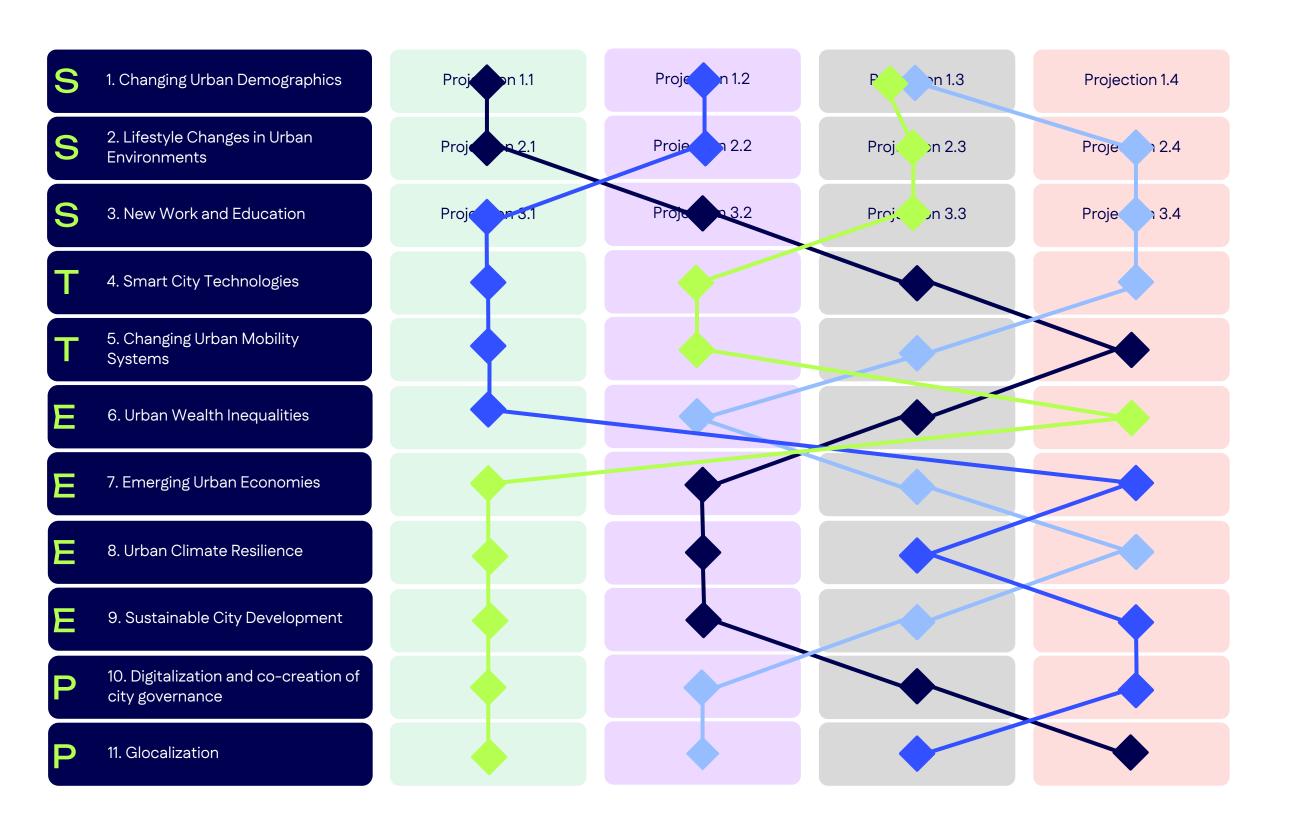
DIFFERENT MEGASHIFT PROJECTIONS

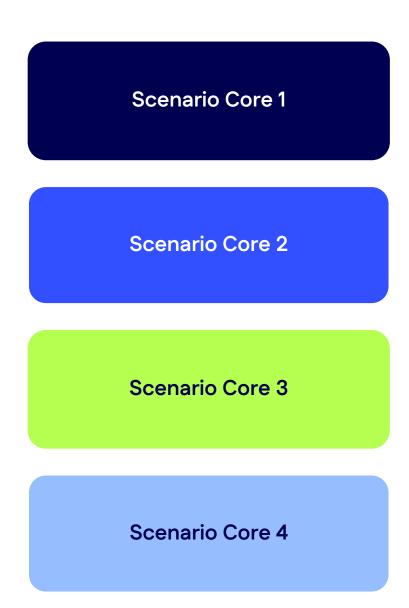
For each megashift, four possible development paths ("projections") were developed.

S 1. Changing Urban Demographics	Projection 1.1	Projection 1.2	Projection 1.3	Projection 1.4
S 2. Lifestyle Changes in Urban Environments	Projection 2.1	Projection 2.2	Projection 2.3	Projection 2.4
S 3. New Work and Education	Projection 3.1	Projection 3.2	Projection 3.3	Projection 3.4
4. Smart City Technologies				
5. Changing Urban Mobility Systems				
6. Urban Wealth Inequalities				
7. Emerging Urban Economies				
8. Urban Climate Resilience				
9. Sustainable City Development				
P 10. Digitalization and co-creation of city governance				
P 11. Glocalization				

DEFINING SCENARIO STARTING POINTS (CORES)

The consistent combination of megashift projections sets the starting points for distinct, alternative future scenarios.





SCENARIO CORES AT A GLANCE

These cores served as a starting point for the scenario workshop. Titles and content of the scenarios were adjusted during the scenario workshop and post-processing.









Collaboration-driven cities

Cities are more inclusive and citizen-driven than ever. Participatory governance, shared housing, and digital tools strengthen communities, making urban life more connected and accessible. Al and loT enhance governance, energy efficiency, and public services, while circular economies and platform-based sharing foster sustainability. Yet, climate adaptation remains a struggle. While some areas successfully implement sustainability initiative, no district is fully resilient. Extreme weather, pollution, and outdated infrastructure continue to challenge even the most collaborative efforts. Despite strong cooperation, cities must constantly adapt to keep pace with mounting environmental and social pressures.

Divided cities

Urban life is increasingly fragmented, driven by tech giants and authoritarian governance. Al and loT optimize infrastructure, but at the cost of surveillance and control. Housing is unaffordable, social divides widen, and migrants and aging populations struggle. Big Tech dominates mobility and city infrastructure, favoring efficiency over equity. Climate adaptation is slow and uneven, with local solutions thriving in wealthy districts while poorer areas are left behind. Global collaboration fades, and cities become smart, efficient, but deeply unequal—designed for the privileged upper middle class and rich.

Techno-utopian cities

Cities thrive as self-sustaining, high-tech ecosystems. Al-driven infrastructure, decentralized governance, and blockchain-powered economies create vibrant, inclusive communities. Modular housing and shared spaces enable sustainable urban living, while smart mobility and net-zero buildings minimize environmental impact. Citizens co-create policies through digital platforms, fostering transparency and equity. As cities gain autonomy, they redefine governance and economic independence, leading a future where technology serves people, sustainability, and collective well-being.

Failing cities

Cities are unraveling under economic strain and poor governance. Wealthy enclaves thrive behind walls, while the rest face crumbling infrastructure, rising unemployment, and social exclusion. Smart technologies remain unevenly distributed, leaving many disconnected from essential services. Climate disasters devastate unprepared areas, worsening pollution and resource shortages. Mobility stagnates, with broken transit systems deepening urban-rural divides. With geopolitical tensions limiting collaboration and local governments failing to act, cities become fragmented, unsustainable, and increasingly unlivable for those left behind.

SCENARIO CORE PROJECTIONS (1/2)



Collaboration-driven cities

Cities adopt <u>equitable policies</u>, <u>ensuring accessibility</u>, <u>integration</u>, <u>and</u> <u>economic innovation</u> despite aging populations.

Modular and shared housing thrive, fostering social cohesion, sustainability, and personalized urban services.

Cities adapt partially, offering improved <a href="https://nx.ncb.nlm.

Widespread adoption of IoT and Al enhances governance, energy efficiency, and citizen engagement in urban life.

<u>Cities moderately adopt AVs and</u> <u>shared systems</u>, with progress in sustainability but ongoing challenges in equity.



Divided cities

Cities struggle with <u>loneliness</u>, <u>unaffordable housing</u>, <u>and</u> <u>unsustainable practices</u>, widening social and economic divides.

<u>Age-friendly infrastructure remains</u> <u>insufficient</u>, migrant populations face barriers, and <u>social tensions rise</u>.

Cities adapt partially, offering improved hybrid workspaces and digital education, but challenges in inclusivity remain.

Cities achieve <u>seamless IoT and Al</u> <u>integration</u>, optimizing energy, infrastructure, and property management for citizens.

<u>Urban mobility is managed by Big Tech</u> pushing use of EVs, AVs, and shared platforms, reducing congestion and emissions.



Techno-utopian cities

Cities deploy <u>advanced technologies</u>
<u>like Al-driven infrastructure and self-</u>
<u>sustaining systems</u> to meet all
demographic needs.

Cities <u>achieve vibrant</u>, <u>eco-friendly</u>
<u>communities</u> through <u>modular housing</u>,
<u>shared spaces</u>, <u>and fully personalized</u>
<u>services</u>.

Urban areas balance remote and hybrid models with <u>accessible coworking</u> spaces and lifelong learning hubs.

<u>Widespread adoption of IoT and AI</u> enhances governance, energy efficiency, and citizen engagement in urban life.

<u>Urban mobility thrives with balanced</u> <u>use of EVs, AVs, and shared platforms,</u> reducing congestion and emissions.



Failing cities

Urban systems fail to adapt, resulting in high unemployment rates, overcrowding, and social exclusion of vulnerable groups.

Modular and shared housing fail to scale; sustainability efforts stagnate under rising costs and urban sprawl.

Urban areas <u>struggle to support</u>
<u>decentralized work and education</u>,
leading to uneven access and
inefficiencies.

Uneven adoption of smart technologies creates <u>significant disparities in urban</u>
<u>living and access to digital</u>
<u>infrastructure</u>.

<u>AV adoption stagnates</u>, infrastructure fails to support eVTOLs, and rural-urban transit remains disconnected.

S 1. Changing UrbanDemographics

2. Lifestyle Changes in Urban Environments

S 3. New Work and Education

4. Smart City Technologies

5. Changing Urban Mobility Systems

BLUEM ARROW

SCENARIO CORE PROJECTIONS (2/2)

6. Urban Wealth Inequalities

7. Emerging Urban Economies

8. Urban Climate
Resilience

9. Sustainable City
Development

10. Digitalization and co-creation of city governance

11. Glocalization

Collaboration-driven cities

Cities make gradual strides in equity
through mixed-use housing and
democratized access to real estate
markets

<u>Circular practices and platform-driven</u> <u>sharing</u> enable moderate economic inclusivity and environmental progress in urban areas.

Cities try to adapt to extreme weather events yet are <u>unable to defend their</u> infrastructure as climate hits hard.

Sustainability initiatives succeed in isolated areas, leaving other urban zones to struggle with pollution and inefficient practices.

Cities adopt <u>participatory models and</u>
<u>e-Government platforms</u>, balancing
efficiency with widespread citizen
engagement.

<u>Collaborative city-to-city agreements</u> strengthen local economies and maintain connectivity in a volatile world.

Divided cities

<u>Limited reforms fail to address soaring</u>
<u>property costs</u>, perpetuating
socioeconomic divisions in urban areas.

Emerging economies remain
fragmented, with limited integration
causing inefficiencies and widening
urban disparities.

Cities <u>adopt climate-resilience</u>
<u>measures incrementally</u>, with
moderate success in addressing climate
challenges and resource scarcity.

Urban <u>areas adopt sustainable</u>
<u>systems incrementally</u>, balancing
growth with environmental goals but
facing persistent challenges.

Cities <u>misuse technology for</u> <u>surveillance and control</u>, suppressing public input and fostering distrust.

Cities <u>develop localized systems while</u> <u>maintaining limited global ties,</u> balancing stability and integration.

Techno-utopian cities

Blockchain-based property markets and tokenization democratize real estate ownership, radically redistributing urban wealth.

Cities lead with <u>circular, sharing, and</u> <u>digital economies</u>, achieving sustainability, equity, and resilience.

Cities achieve <u>net-zero emissions</u> with renewable energy, smart buildings, and circular economies seamlessly integrated into urban life.

Urban areas <u>effectively balance green</u> <u>infrastructure and advanced systems</u> to mitigate climate impacts and ensure resource security.

<u>Decentralized platforms empower</u> <u>citizens to co-create policies</u>, driving equity, transparency, and trust in urban governance.

Cities declare <u>quasi-independence</u>, <u>becoming autonomous hubs with</u> <u>self-sufficient economies</u> and minimal global dependencies.

Failing cities

<u>Wealth inequalities worsen</u>, with gated communities thriving while marginalized populations face housing and resource scarcity.

Emerging economies remain
fragmented, with limited integration
causing inefficiencies and widening
urban disparities.

Limited investment in resilience infrastructure leads to <u>significant</u> damage and economic instability during extreme weather events.

Poor planning and lack of investment in green infrastructure result in severe pollution, resource depletion, and unlivable conditions.

<u>Poorly designed systems hinder</u> <u>inclusivity</u>, leaving marginalized groups without a voice in governance.

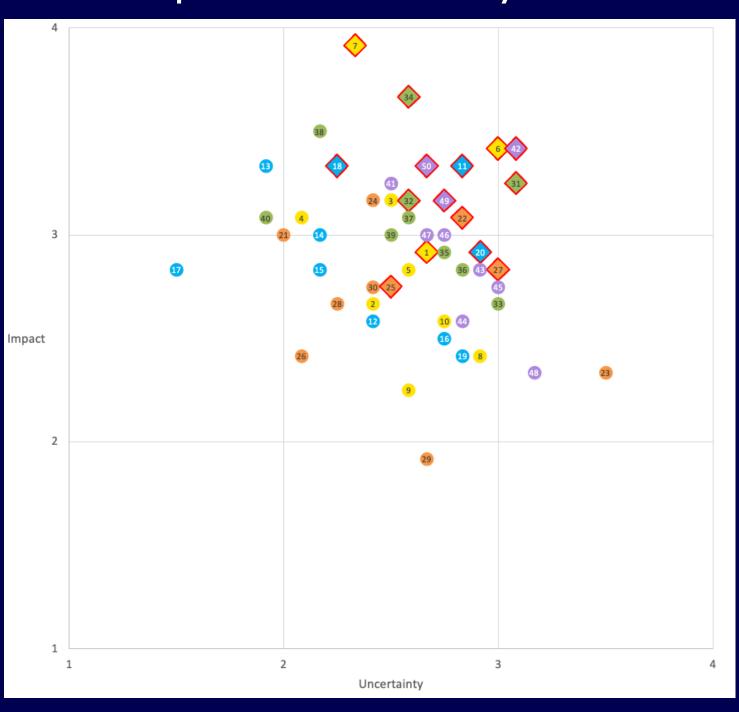
<u>Geopolitical tensions hinder cross-border collaboration</u>, forcing cities to rely solely on limited local resources.

50 TRENDS SHAPING THE FUTURE OF CITIES

SOCIAL	TECHNOLOGICAL	ECONOMIC	ENVIRONMENTAL	POLITICAL
1. Cultural identity preservation	11. Role of Al in cities	21. Integrative retail spaces	31. Urban biodiversity conservation	41. Urban security concerns
2. Health and wellbeing	12. AR/VR & immersive experiences	22. Companies shaping cities	32. Waste-free cities	42. Migration policy challenges
3. Mixed-use neighbourhoods	13. Digital city services	23. Digital currencies	33. Floating cities	43. Data-driven governance
4. Virtualization of daily life	14. Advanced prefabrication and modular design	24. Investment in infrastracture & tech-transformation	34. Urban carbon neutrality	44. Inclusivity policies
5. Local community engagement	15. Digital urban twins	25. Rise of public-private partnerships	35. Biophilic design	45. Ground and property valuation regulation
6. Misinformation and fake news	16. Quantum computing	26. Knowledge economy	36. Urban farming	46. Green regulation and ESG compliance
7. Densification	17. Advanced communication networks	27. Localization of supply chains	37. Sustainable and smart materials	47. Cities role in global governance
8. Growing loneliness epidemic	18. Modernization of infrastructure	28. Proliferation of decentralized energy trading	38. Renewable energy in urban design	48. Censorship and freedom of speech
9. Citizen activism	19. Decentralized networks	29. Revival of craftmanship	39. Smart resource management	49. City fiscal autonomy
10. Citizen prosumption	20. Rise of robotics in public spaces	30. Metropolitan economic hubs	40. Renovation & retrofitting	50. Regulatory hurdles

IMPACT & UNCERTAINTY ASSESSMENT

Trend impact & uncertainty assessment results



Legend



Key uncertainties selected



Top 50 trends according to the assessment

Key uncertainties

Key uncertainties are trends with high impact and high uncertainty. They require further analysis of different future trajectories in scenarios.

_ High impact:

Trend will have a high impact in the future. It will trigger change.

_ High uncertainty:

We don't know whether an event or development will occur.

OR

We are sure that an event / development will occur, but don't know how and what the outcome will be.



15 KEY TRENDS SHAPING CITIES OF THE FUTURE

Social	TECHNOLOGICAL	ECONOMIC	ENVIRONMENTAL	POLITICAL
1. Cultural identity preservation	11. Role of Al in cities	21. Integrative retail spaces	31. Urban biodiversity conservation	41. Urban security concerns
2. Health and wellbeing	12. AR/VR & immersive experiences	22. Companies shaping cities	32. Waste-free cities	42. Migration policy challenges
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Key uncertainties selected through Impact-Uncertainty assessment

SELECTED SOCIAL TRENDS







1. Cultural identity preservation

The preservation of cultural identity in cities is increasingly driven by nationalistic tendencies, fueled by a societal push to protect local traditions, languages, and heritage amidst globalization and urban transformation.

Communities are advocating for stronger representation of national and regional symbols in urban spaces, such as monuments, festivals, and architecture, to reinforce a collective cultural identity. While it strengthens a sense of belonging and pride among residents, it raises concerns about marginalizing minority cultures and limiting the multicultural dynamism of modern cities.

6. Misinformation and fake news

Misinformation and "fake news" present serious challenges to urban societies by fostering mistrust, polarization, and confusion among citizens. False narratives can erode trust in institutions, deepen social divides, and strain community cohesion, particularly in diverse urban settings. As misinformation influences public opinion and decision—making, it disrupts collective action and highlights the critical need for digital literacy, clear communication, and strategies to build societal resilience.

7. Densification

Densification is transforming urban landscapes by concentrating housing, services, and infrastructure into compact areas to meet the needs of growing populations. This approach supports sustainability by curbing urban sprawl, improving public transit systems, and optimizing resource use. At the same time, it brings challenges like overcrowding and pressure on infrastructure, requiring creative urban planning to maintain liveability and equitable access to resources.

Other trends to consider with high impact

- 3. Mixed-use neighbourhoods
- 4. Virtualization of daily life
- 10. Citizen prosumption

1. CULTURAL IDENTITY PRESERVATION



The preservation of cultural identity in cities is increasingly driven by nationalistic tendencies, fueled by a societal push to protect local traditions, languages, and heritage amidst globalization and urban transformation. Communities are advocating for stronger representation of national and regional symbols in urban spaces, such as monuments, festivals, and architecture, to reinforce a collective cultural identity. While it strengthens a sense of belonging and pride among residents, it raises concerns about marginalizing minority cultures and limiting the multicultural dynamism of modern cities.

Projection 1.1

Harmonized Traditions and **Diversity**

Policies encourage cultural expression while ensuring minority representation, creating a respectful and adaptive urban identity.

Projection 1.2

Localized Heritage, Global Influence

Cities integrate traditional symbols in urban design while accommodating global influences, leading to a hybrid cultural identity.

Projection 1.3

Exclusionary Nationalism Dominates Cities

Strong nationalist policies suppress minority cultures, leading to urban segregation and cultural homogenization.

Projection 1.4

Cultural Revival Sparks Secessionist Movements

Intense cultural preservation efforts lead to regional separatism, driving political and territorial disputes.





6. MISINFORMATION AND FAKE NEWS



Misinformation and "fake news" present serious challenges to urban societies by fostering mistrust, polarization, and confusion among citizens. False narratives can erode trust in institutions, deepen social divides, and strain community cohesion, particularly in diverse urban settings. As misinformation influences public opinion and decision-making, it disrupts collective action and highlights the critical need for digital literacy, clear communication, and strategies to build societal resilience.

Projection 6.1

Strengthened AI Fact-**Checking Frameworks**

Media outlets, governments, and tech companies collaborate to create efficient fact-checking systems powered by advanced Al systems, curbing misinformation while promoting transparency and accountability in news dissemination.

Projection 6.2

Tolerating Misinformation with Caution

Misinformation continues to circulate but is balanced by widespread public awareness, media literacy, and regulatory measures, allowing for a more informed yet still divided society.

Projection 6.3

Polarization Deepens, Trust **Erodes**

Misinformation grows unchecked, fuelling social polarization, undermining trust in institutions, and eroding social cohesion, especially in urban environments.

Projection 6.4

Misinformation Sparks Social Uprisings

A widespread false narrative incites mass protests and social unrest in urban centers, radically reshaping societal trust and political landscapes.



SCENARIO



7. DENSIFICATION



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Projection 7.1

Sustainable and Smart Compact Cities

High-density urban areas thrive with green spaces, efficient infrastructure, and smart planning, ensuring sustainability, affordability, and high quality of life. Thoughtful planning integrates housing, workspaces, and services, reducing commutes, enhancing accessibility, and promoting vibrant, walkable neighbourhoods.

SCENARIO 3



Projection 7.2

Densification with Divided Consequences

As cities grow denser, they face infrastructure strain, overcrowding, affordability issues, and congestion, requiring policy adjustments. Wealthier areas adopt green spaces and smart planning, while affordable neighbourhoods endure extreme densification and housing crises.

SCENARIO 2

Projection 7.3

Unliveable Megacities

The city fails to sustain growth, with stalled development leading to widespread abandonment. Crumbling infrastructure, poor air quality, and a collapsing housing market drive residents away, leaving behind shrinking populations and deteriorating urban spaces.

SCENARIO 4

Projection 7.4

Suburban Growth

Densification remains at the same level in city centres as people prefer to go to the suburbs. With this, densification mainly is happening in the suburbs, leading to a growing urban sprawl.

SELECTED TECHNOLOGIAL TRENDS







11. Role of Al in cities

Al is revolutionizing urban services by streamlining logistics, resource management, and mobility systems, making cities more efficient and sustainable. It tackles challenges such as traffic congestion, energy usage, and waste, while enhancing governance through data-driven insights. In healthcare, Al tools like predictive analytics and robotic caregivers are transforming patient care, while generative Al improves mobility with smarter, personalized solutions. Despite these benefits, concerns around data privacy, biases, and ethical implications highlight the need for responsible implementation.

18. Modernization of infrastructure

Modernization of infrastructure is essential as aging systems in established cities and rapid growth in urbanizing areas create significant challenges. Older cities face mounting pressure to upgrade outdated systems to meet contemporary demands, while growing cities must expand infrastructure to support increasing populations. By investing in resilient, efficient, and sustainable solutions, cities can address these pressing needs, ensuring long-term functionality and adaptability in the face of urban and environmental pressures.

20. Rise of robotics in public spaces

The rise of robotics in public spaces transforms urban living, infrastructure, and development through delivery robots, security bots, maintenance drones, and construction robots that enhance convenience and efficiency. Delivery robots streamline last-mile logistics, and autonomous systems improve public space management through cleaning, surveillance, and real-time assistance.

Construction robots are transforming urban development by automating tasks, improving safety, and accelerating project timelines.

Other trends to consider with high impact

- _ 13. Digital city services
- 14. Advanced prefabrication and modular design

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11. ROLE OF AI IN CITIES



Al is revolutionizing urban services by streamlining logistics, resource management, and mobility systems, making cities more efficient and sustainable. It tackles challenges such as traffic congestion, energy usage, and waste, while enhancing governance through data-driven insights. In healthcare, Al tools like predictive analytics and robotic caregivers are transforming patient care, while generative Al improves mobility with smarter, personalized solutions. Despite these benefits, concerns around data privacy, biases, and ethical implications highlight the need for responsible implementation.

Projection 11.1

Smart Cities with Ethical Al

Cities implement Al responsibly, balancing automation with human oversight, improving services while addressing privacy and bias concerns.

Projection 11.2

Al-Augmented but Uneven Progress

Al improves urban systems, but adoption is inconsistent, with some sectors benefiting more than others due to policy and economic constraints.

Projection 11.3

Limited Public Automation

Al-driven services never materialize, leaving only basic automation in public systems. With no advancements, inefficiencies persist, services remain unreliable, and communities struggle with outdated, failing infrastructure.

Projection 11.4

Al's Uneven Urban Impact

Al improves some urban systems, while others face limitations, with adoption remaining inconsistent due to policy and economic constraints. Its benefits vary across communities, shaping accessibility and quality of services. However, concerns over Al replacing human work contribute to public skepticism and debate

SCENARIO 3



SCENARIO 4

18. MODERNIZATION OF INFRASTRUCTURE



Modernization of infrastructure is essential as aging systems in established cities and rapid growth in urbanizing areas create significant challenges. Older cities face mounting pressure to upgrade outdated systems to meet contemporary demands, while growing cities must expand infrastructure to support increasing populations. By investing in resilient, efficient, and sustainable solutions, cities can address these pressing needs, ensuring long-term functionality and adaptability in the face of urban and environmental pressures.

Projection 18.1

Future-Proof Smart Infrastructure

Cities integrate cutting-edge, sustainable, and resilient infrastructure, enhancing efficiency, accessibility, and climate adaptability while minimizing maintenance costs.

Projection 18.2

Sustainable Cities with Limited Access

Cities adopt advanced, resilient infrastructure to boost efficiency and climate adaptability while reducing maintenance costs. However, high usage costs create barriers to accessibility.

Projection 18.3

Slow Modernization of Aging Infrastructure

Infrastructure modernization progresses steadily, but financial limitations and bureaucratic hurdles slow down comprehensive overhauls. With cities struggling to update outdated systems, more frequent breakdowns, congestion, and inefficiencies happen that hamper urban quality of life. Modernization mainly focussed on fixing what is broken.

Projection 18.4

Infrastructure Collapse Triggers Urban Decline

Cities have postponed action and underfunded infrastructure renovation for years, which now leads to critical failures in transportation, utilities, and public services, pushing residents to migrate elsewhere.

SCENARIO 3 SCENARIO 2



20. RISE OF ROBOTICS IN PUBLIC SPACES



The rise of robotics in public spaces transforms urban living, infrastructure, and development through delivery robots, security bots, maintenance drones, and construction robots that enhance convenience and efficiency. Delivery robots streamline last-mile logistics, and autonomous systems improve public space management through cleaning, surveillance, and real-time assistance. Construction robots are transforming urban development by automating tasks, improving safety, and accelerating project timelines.

Projection 20.1

Robots Enhance Public Services

Cities leverage robotics for cleaning, security, and logistics, increasing efficiency while maintaining human oversight and ethical use.

Projection 20.2

Robotics Adoption with Regulatory Hurdles

Robots assist in public spaces, but privacy concerns, labour displacement fears, and inconsistent regulations slow widespread adoption.

Projection 20.3

Overuse of Robots Sparks Public Backlash

Widespread automation displaces human workers, leading to social unrest, regulatory pushback, and resistance to robotic expansion in cities. Also robot incidents and malfunctioning, as well as overuse of robots for surveillance spark backlash and an oppressive urban environment.

Projection 20.4

Robot-Friendly Cities Emerge

Cities redesign infrastructure to accommodate autonomous systems, creating specialized zones for robot-only transit and operations.

SCENARIO



SCENARIO SCENARIO

SELECTED ECONOMIC TRENDS







22. Companies shaping cities

Businesses are increasingly shaping urban innovation and economic activity by fostering startup- and building vibrant tech ecosystems that drive metropolitan economies. Cities are thereby becoming global hubs of innovation, with businesses influencing governance and policy making to address challenges such as data privacy, sustainability, and economic inclusion. The growing role of big tech in urban environments highlights the need for balanced regulation to ensure that economic growth aligns with public interests and equitable development.

25. Rise of public-private partnerships

Collaboration between governments and the private sector is revolutionizing urban development by streamlining the delivery of infrastructure, services, and innovation.

Public-private partnerships are advancing sustainable construction projects and building innovative ecosystems to tackle critical urban challenges. By leveraging combined resources and expertise, these partnerships create shared value, enhance service delivery, and help shape resilient, future-ready cities.

27. Localization of supply chains

Relocating production and sourcing closer to urban centers is boosting supply chain resilience, cutting transportation costs, and driving local economic growth. In response to geopolitical and economic disruptions, cities are focusing on localized supply chains to secure material availability and reduce reliance on global trade. This approach promotes sustainable urban development while strengthening regional economies through job creation and lowering the environmental footprint of long-distance transport.

Other trends to consider with high impact

- 21. Integrative retail spaces
- 24. Investment in infrastructure & techtransformation (link to nr. 18)
- _ Metropolitan economic hubs (linked to nr. 27)

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22. COMPANIES SHAPING CITIES



Businesses are increasingly shaping urban innovation and economic activity by fostering startup- and building vibrant tech ecosystems that drive metropolitan economies. Cities are thereby becoming global hubs of innovation, with businesses influencing governance and policy making to address challenges such as data privacy, sustainability, and economic inclusion. The growing role of big tech in urban environments highlights the need for balanced regulation to ensure that economic growth aligns with public interests and equitable development.

Projection 22.1

Balanced Growth with Responsible Business

Businesses shape cities through investment in infrastructure and innovation, while regulations ensure fair governance and social equity.

Projection 22.2

Corporate Influence with Mixed Outcomes

Private sector-led urban innovation boosts economies but raises concerns over affordability, labor rights, and corporate-driven policy decisions.

Projection 22.3

Tech Giants Dominate Urban Policy

Large corporations wield excessive influence over governance, prioritizing profit over public interests, exacerbating inequality and data privacy issues.

Projection 22.4

City-Owned Enterprises Challenge Corporations

Cities launch their own startups and digital platforms, competing with corporations to reclaim urban development and digital sovereignty.

SCENARIO SCENARIO 4

SCENARIO 2

25. RISE OF PUBLIC-PRIVATE PARTNERSHIPS



Collaboration between governments and the private sector is revolutionizing urban development by streamlining the delivery of infrastructure, services, and innovation. Public-private partnerships are advancing sustainable construction projects and building innovative ecosystems to tackle critical urban challenges. By leveraging combined resources and expertise, these partnerships create shared value, enhance service delivery, and help shape resilient, future-ready cities.

Projection 25.1

Transformative
Partnerships Build Resilient
Cities

Public-private collaborations drive equitable, sustainable urban development, enhancing infrastructure, services, and economic growth for all citizens.

Projection 25.2

Partnerships Improve but Face Challenges

Public-private projects enhance urban development but face bureaucratic delays, uneven investment, and occasional conflicts over priorities.

Projection 25.3

Corporate Control Over Public Services

Governments become dependent on private funding, allowing businesses to dominate critical infrastructure and dictate urban policies.

Projection 25.4

Blockchain-Based Public-Private Governance

Decentralized, transparent smart contracts enable trustdriven, citizen-involved partnerships, transforming how cities manage infrastructure and services.

SCENARIO 3



SCENARIO S

SCENARIO 4

27. LOCALIZATION OF SUPPLY CHAINS



Relocating production and sourcing closer to urban centers is boosting supply chain resilience, cutting transportation costs, and driving local economic growth. In response to geopolitical and economic disruptions, cities are focusing on localized supply chains to secure material availability and reduce reliance on global trade. This approach promotes sustainable urban development while strengthening regional economies through job creation and lowering the environmental footprint of long-distance transport.

Projection 27.1

Self-Sufficient, Sustainable Cities

Urban centers thrive with resilient, Aloptimized and circular economies, relying on microfactories with localized production in the own metropolitan region, renewable energy, and advanced manufacturing technologies.

Projection 27.2

Balanced Regional Supply Networks

Cities optimize supply chains by blending local/regional production with selective global sourcing, ensuring efficiency, sustainability, and economic stability.

Projection 27.3

Localized Growth with Market Adjustments

Cities shift toward regional supply chains, but cost fluctuations and infrastructure limitations create temporary inefficiencies in adaptation. Over-reliance on local supply chains leads to shortages, higher consumer prices, and inefficiencies in production and distribution.

Projection 27.4

Re-focus on global supply

Cities shift back to a globally integrated supply chain, driven by a combination of resource optimization, geopolitical stability efforts, and the need to counter supply shocks from extreme climate events and localized disruptions.





SELECTED ENVIRONMENTAL TRENDS







31. Urban biodiversity conservation

Cities are increasingly focusing on protecting and restoring natural ecosystems by incorporating green spaces, wildlife corridors, and sustainable urban planning into their development strategies. These efforts enhance biodiversity, support native species, and improve urban resilience to environmental challenges like climate change. By integrating nature into cityscapes, urban areas become healthier, more livable, and better equipped to balance ecological preservation with human activity.

32. Waste-free cities

Cities are transitioning toward zero-waste urban environments by adopting recycling, upcycling, and circular economy practices to minimize landfill use and environmental impact. Sustainable waste management systems are being integrated into urban infrastructure, emphasizing resource recovery and reuse to reduce waste generation. These activities not only support environmental sustainability but also foster innovation and economic growth by turning waste into valuable resources.

34. Urban carbon neutrality

Achieving zero net carbon emissions involves integrating renewable energy systems, energy-efficient infrastructure, and sustainable transportation into urban frameworks. Efforts like transitioning to electric vehicles, developing green buildings, and implementing carbon offset programs help address remaining emissions. These strategies place cities at the forefront of climate action, fostering cleaner, healthier, and more resilient environments.

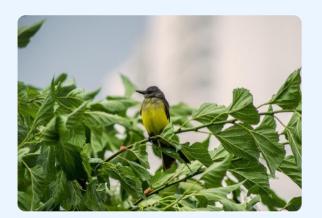
Other trends to consider with high impact

- _ 33. Floating Cities
- _ 37. Sustainable and smart materials (impact on nr. 40)
- 38. Renewable energy in urban design
- _ 39. Smart resource management
- 40. Renovation & retrofitting

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31. URBAN BIODIVERSITY CONSERVATION



Cities are increasingly focusing on protecting and restoring natural ecosystems by incorporating green spaces, wildlife corridors, and sustainable urban planning into their development strategies. These efforts enhance biodiversity, support native species, and improve urban resilience to environmental challenges like climate change. By integrating nature into cityscapes, urban areas become healthier, more livable, and better equipped to balance ecological preservation with human activity.

Projection 31.1

Nature-Positive Cities Flourish

Urban areas fully integrate biodiversity, with green roofs, wildlife corridors, and rewilding initiatives enhancing ecosystems and public wellbeing. Conservation efforts grow steadily, But are always checked against other priorities like housing and infrastructure.

Projection 31.2

Balanced Growth with Integration of Biodiversity Plans

Cities expand parks and green spaces while adopting policies that protect native species and promote sustainable urban development. Conservation efforts grow steadily, but are always checked against other priorities like housing and infrastructure.

Projection 31.3

Biodiversity Loss Despite Green Efforts

Cities continue to face biodiversity loss, as fragmented ecosystems and urban expansion outpace conservation efforts. While advancements in vertical forests and wildlife corridors will mitigate damage, the resilience of urban biodiversity will depend on large-scale habitat restoration beyond city limits. Governments focus their plans on protection and restoration of large nature parks outside the city.

Projection 31.4

Concrete Jungle with No Wildlife

Unchecked urbanization eliminates green spaces, leaving cities devoid of biodiversity and vulnerable to climate-related crises.

SCENARIO



SCENARIO SCENARIO

32. WASTE-FREE CITIES



Cities are transitioning toward zero-waste urban environments by adopting recycling, upcycling, and circular economy practices to minimize landfill use and environmental impact. Sustainable waste management systems are being integrated into urban infrastructure, emphasizing resource recovery and reuse to reduce waste generation. These activities not only support environmental sustainability but also foster innovation and economic growth by turning waste into valuable resources.

Projection 32.1

Fully Circular Cities Achieved

Cities eliminate waste through advanced recycling, upcycling, and closed-loop systems, turning all discarded materials into valuable resources.

Projection 32.2

Steady Progress withImplementation Gaps

Cities advance waste reduction, but infrastructure limitations and behavioral resistance slow full transition to zero-waste systems.

Projection 32.3

Waste Outpaces Management Efforts

Rising urban populations and consumption habits overwhelm recycling systems, leading to persistent waste buildup and landfill expansion.

Projection 32.4

Urban Waste Crisis Escalates

Cities fail to control waste, resulting in pollution, public health crises, and severe environmental degradation.

SCENARIO 3



34. URBAN CARBON NEUTRALITY



Achieving zero net carbon emissions involves integrating renewable energy systems, energy-efficient infrastructure, and sustainable transportation into urban frameworks. Efforts like transitioning to electric vehicles, developing green buildings, and implementing carbon offset programs help address remaining emissions. These strategies place cities at the forefront of climate action, fostering cleaner, healthier, and more resilient environments.

Projection 34.1

Fossil-Free Cities Lead the Way

Cities and their citizens achieving full carbon neutrality is the norm. They make it happen with 100% renewable energy, green infrastructure, and advanced carbon capture technologies. More and more cities even achieve carbon negativity.

Projection 34.2

Major Carbon Cuts with Smart Policies

Strong regulations, clean energy adoption, and sustainable transit significantly reduce urban carbon footprints, nearing neutrality.

Projection 34.3

Gradual Progress Amid Economic Challenges

Cities implement carbonneutral policies, but financial
and political barriers slow
widespread adoption.
Resistance from industries
slow infrastructure
transformation and cities
struggle to meet carbon targets.

Projection 34.4

Uncontrolled Emissions Worsen Urban Climate

Lack of action accelerates climate crises, with cities facing extreme heat, pollution, and unlivable conditions.

SCENARIO 3 SCENARIO 1 SCENARIO 2

SELECTED POLITICAL TRENDS







42. Migration policy challenges

Migration policy challenges are intensifying as cities strive to manage increasing migration flows while balancing social, economic, and cultural impacts. Developing effective policies requires addressing integration issues, such as access to housing, employment, and social services, while fostering social cohesion in diverse urban environments. These complexities demand a balanced approach that ensures both the inclusion of migrants and the sustainability of urban infrastructure and resources.

49. City fiscal autonomy

City fiscal autonomy is essential for empowering urban areas to independently manage resources, fund infrastructure, and deliver services tailored to local needs. By gaining control over revenue generation through mechanisms like local taxation, public-private partnerships, and grants, cities can address unique challenges more effectively. Strengthened fiscal autonomy enhances urban resilience and innovation while reducing dependence on national governments for financial decision-making.

50. Regulatory hurdles

Regulatory hurdles often slow down urban development and innovation by imposing complex, time-consuming approval processes and stringent compliance requirements. These barriers can discourage investment, delay infrastructure projects, and limit the adoption of new technologies in cities. Streamlining regulations and creating adaptive frameworks are essential for fostering innovation, promoting sustainable growth, and enabling cities to respond effectively to evolving challenges.

Other trends to consider with high impact

- 41. Urban security concerns
- 46. Green regulation and ESG compliance

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47. Cities role in global governance

42. MIGRATION POLICY CHALLENGES



Migration policy challenges are intensifying as cities strive to manage increasing migration flows while balancing social, economic, and cultural impacts. Developing effective policies requires addressing integration issues, such as access to housing, employment, and social services, while fostering social cohesion in diverse urban environments. These complexities demand a balanced approach that ensures both the inclusion of migrants and the sustainability of urban infrastructure and resources.

Projection 42.1

Inclusive Cities, Thriving Communities

Cities implement effective policies that integrate migrants, boosting economies, enriching cultures, and strengthening social cohesion.

Projection 42.2

Gradual Adaptation with Mixed Outcomes

Cities adjust to migration flows, but housing shortages, job market competition, and political resistance slow progress.

Projection 42.3

Rising Tensions and Policy Gridlock

Inadequate policies lead to social friction, economic strain, and political polarization over migration issues.

Projection 42.4

Cities Struggle to Adapt to Migration

Urban areas respond to migration, but housing shortages, job competition, and political pushback hinder progress. Weak policies contribute to social tensions and deepen political divides.

SCENARIO 3



SCENARIO 4

49. CITY FISCAL AUTONOMY



City fiscal autonomy is essential for empowering urban areas to independently manage resources, fund infrastructure, and deliver services tailored to local needs. By gaining control over revenue generation through mechanisms like local taxation, public-private partnerships, and grants, cities can address unique challenges more effectively. Strengthened fiscal autonomy enhances urban resilience and innovation while reducing dependence on national governments for financial decision-making.

Projection 49.1

Financially Empowered Cities Thrive

Cities achieve full fiscal autonomy, using diverse revenue streams to fund infrastructure, innovation, and equitable public services.

Projection 49.2

Balanced Autonomy with National Support

Cities gain greater control over taxation and spending while maintaining cooperative financial ties with national governments.

Projection 49.3

Incremental Gains Amid Bureaucratic Limits

Fiscal autonomy expands gradually, but legal and political hurdles prevent cities from fully controlling their financial future. They struggle with inadequate resources, relying on unpredictable national funding, delaying critical infrastructure and service improvements.

Projection 49.4

Centralized Control Strips Cities' Power

National governments tighten financial control, restricting urban investment and stifling local innovation and governance.

SCENARIO



50. REGULATORY HURDLES



Regulatory hurdles often slow down urban development and innovation by imposing complex, time-consuming approval processes and stringent compliance requirements. These barriers can discourage investment, delay infrastructure projects, and limit the adoption of new technologies in cities. Streamlining regulations and creating adaptive frameworks are essential for fostering innovation, promoting sustainable growth, and enabling cities to respond effectively to evolving challenges.

Projection 50.1

Agile Regulations Drive Urban Innovation

Cities deregulate where possible and implement adaptive, transparent policies that accelerate development while ensuring sustainability, safety, and public trust. Aldriven regulatory systems adjust in real time, ensuring fast approvals while maintaining compliance, sparking ethical and control debates.

SCENARIO SCENARIO

Projection 50.2

Balanced Reforms Enhance Efficiency

Regulatory frameworks evolve to support innovation, streamlining processes while maintaining accountability and public welfare.

Projection 50.3

Gradual Improvements Amid Bureaucratic Resistance

Cities make slow regulatory progress, balancing efficiency gains with institutional inertia and risk management.

Projection 50.4

Red Tape Stifles Urban Growth

Complex regulations delay projects, deter investors, and hinder the adoption of smart technologies and sustainable solutions.

SCENARIO

APPENDIX 3: SCENARIO WORKSHOP APPROACH

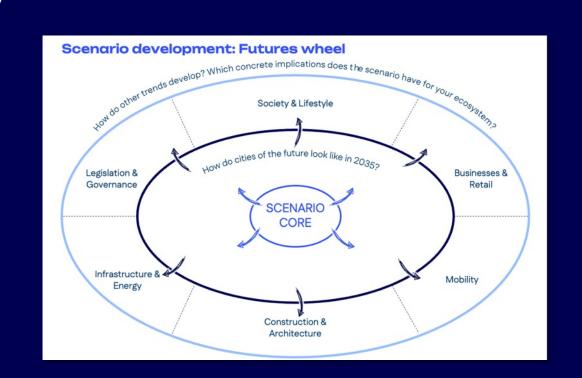


WORKSHOP GOALS AND APPROACH



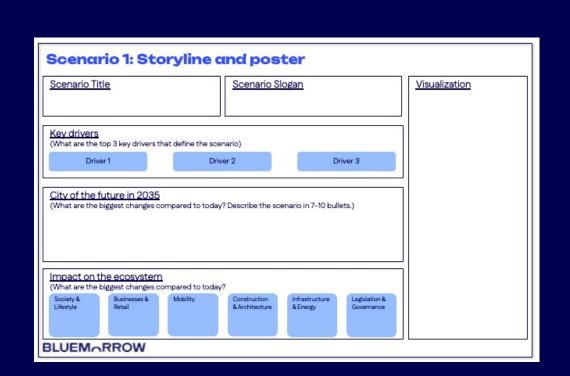
Familiarize yourself with scenario cores

Exercise 1: Scenario Associations



Develop and enrich future scenarios

Exercise 2: Futures Wheel



Create a stroryline and scenario poster

Exercise 3: Scenario Poster

WORKSHOP AGENDA

10.00 – 10.30 Introduction & Scenario Associations

10.30 – 11.30 Scenario Development Part 1

11.30 – 12.00 Scenario Development Part 2a

12.00 – 13.00 Lunch Break

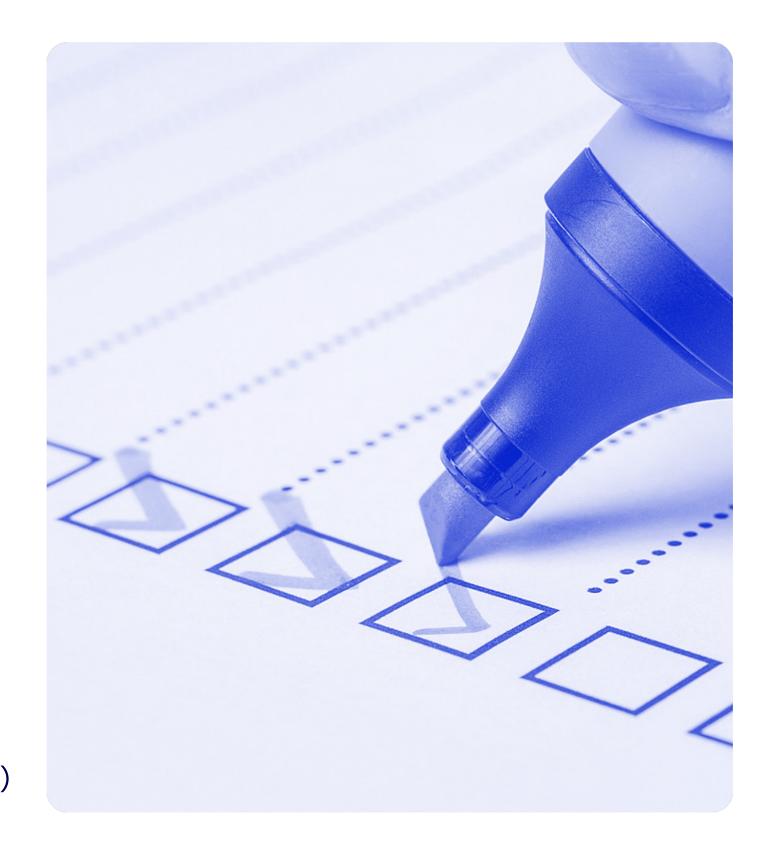
13.00 – 13.30 Scenario Development Part 2b

13.30 – 14.15 Scenario Storyline & Poster

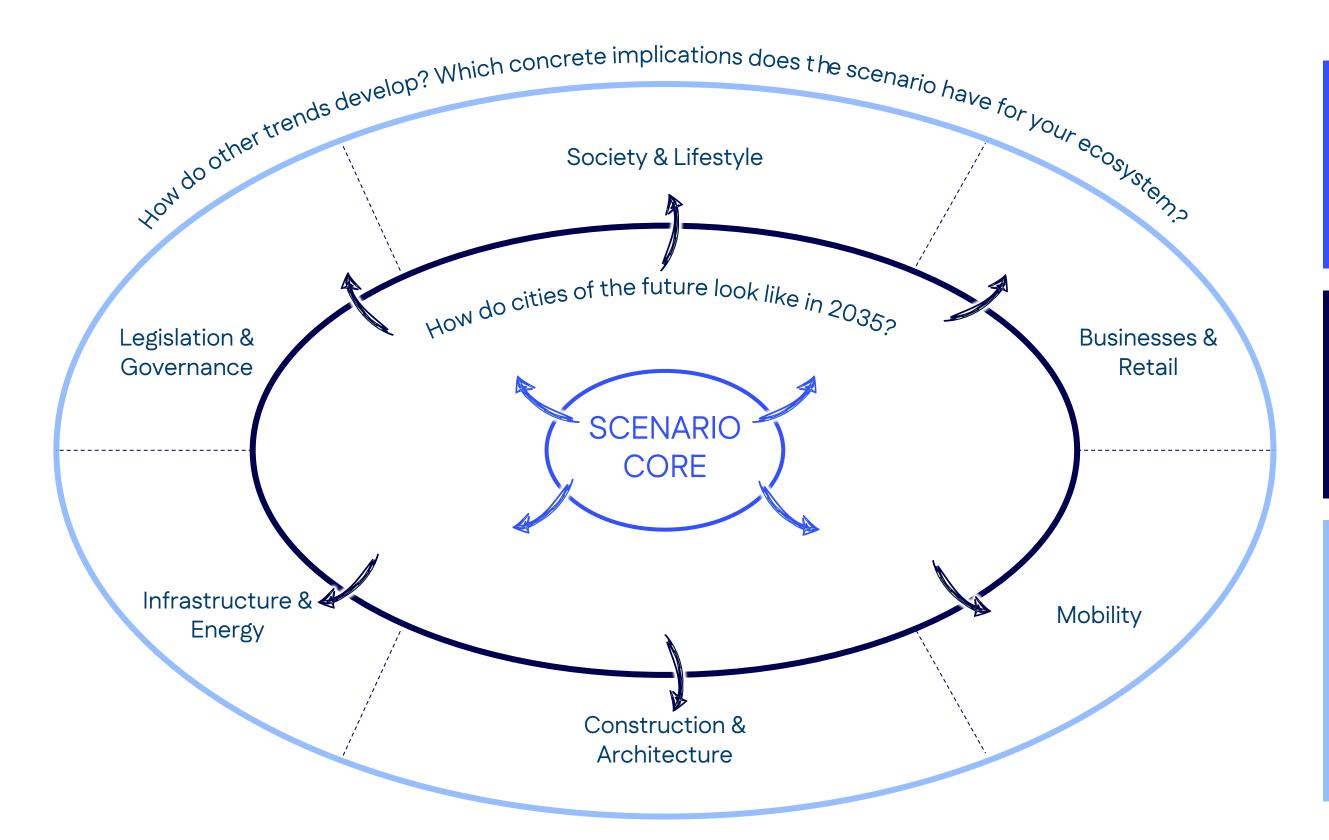
14.15 – 14.45 Scenario Presentation & Assessment

14.45 – 15.00 Wrap-up & Next Steps

Miro Board: https://miro.com/app/board/uXjVLJj1mM0=/ (Password: FutureCities)



SCENARIO DEVELOPMENT | FUTURES WHEEL



Inner circle: Scenario Core

Core dynamics of the 11 megashifts that make and break the scenario.

First Ring: Key trends

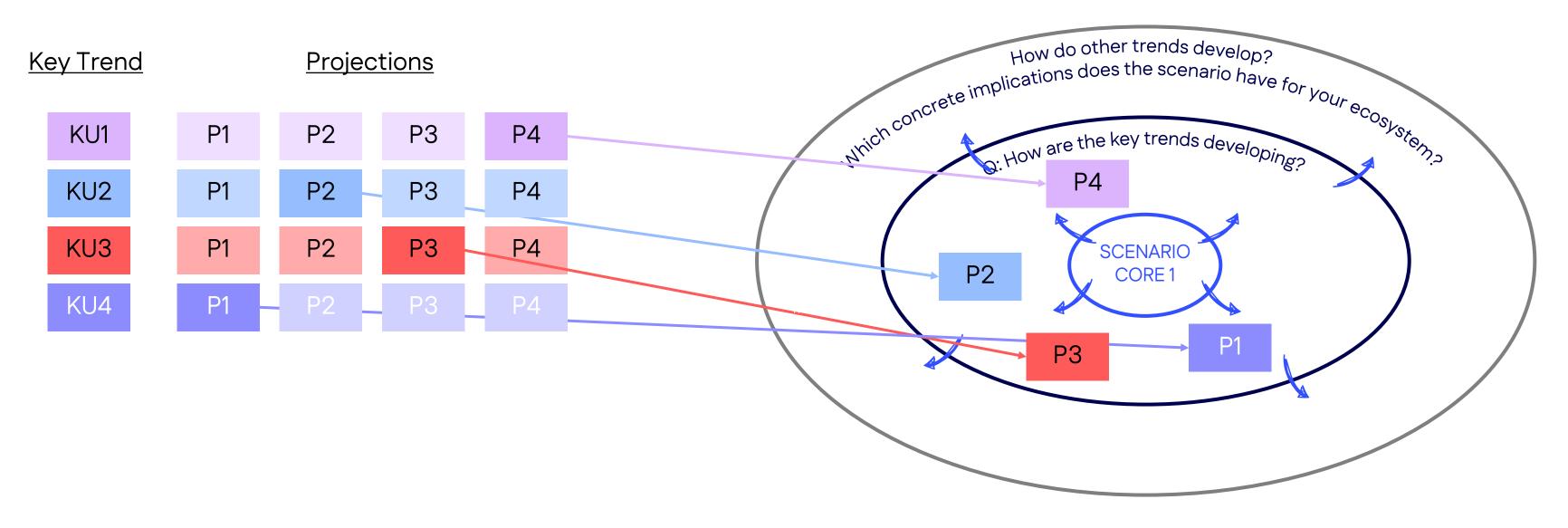
Systematically derived projections from the key trends based on the scenario core.

Second Ring: Implications on the ecosystem

Systematically derived developments of other highly impactful trends and implications of the scenario on industries and the ecosystem.

FIRST RING | CREATE CONSISTENT SCENARIOS WITH KEY TRENDS

In the first ring, projections of the pre-developed projections of key trends are selected to be consistent with the scenario core – thus ensuring heterogeneity of the four scenarios.

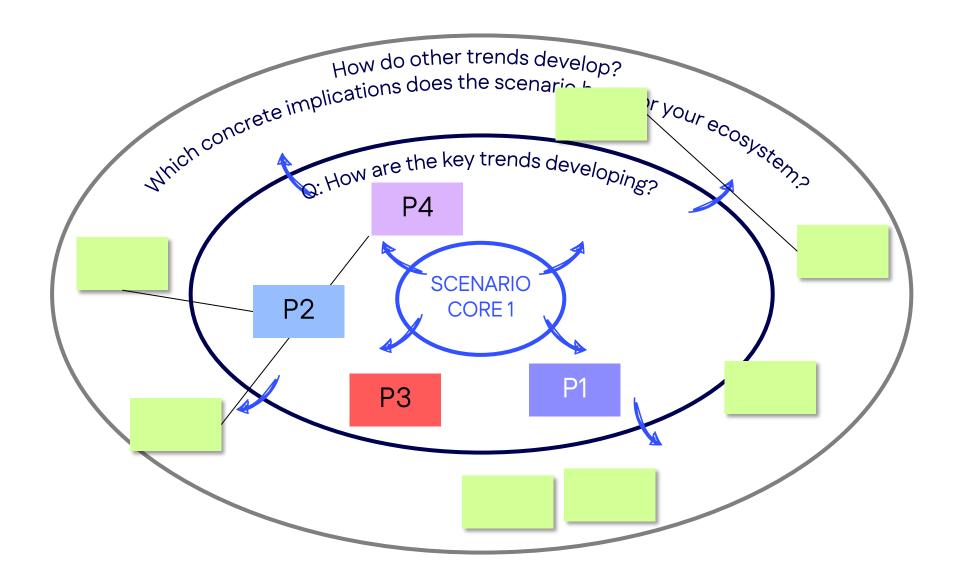


The developed projections have to be consistent with the core and amongst each other – creating a plausible picture of the future.

SECOND RING | DERIVE ECOSYSTEM IMPLICATIONS

In the second ring, concrete implications, developments of other highly impactful trends, examples and manifestations for the industry are developed based on the dynamics in the first ring.

- Based on the first ring, the scenario should be enriched with more details in the second ring by giving concrete examples, describing implications and manifestations of the scenario and thinking about developments of other highly impactful trends
- Dependencies and influences can be highlighted by connecting the sticky notes with lines
- Details should be given in each of the four sectors– the more content the better!



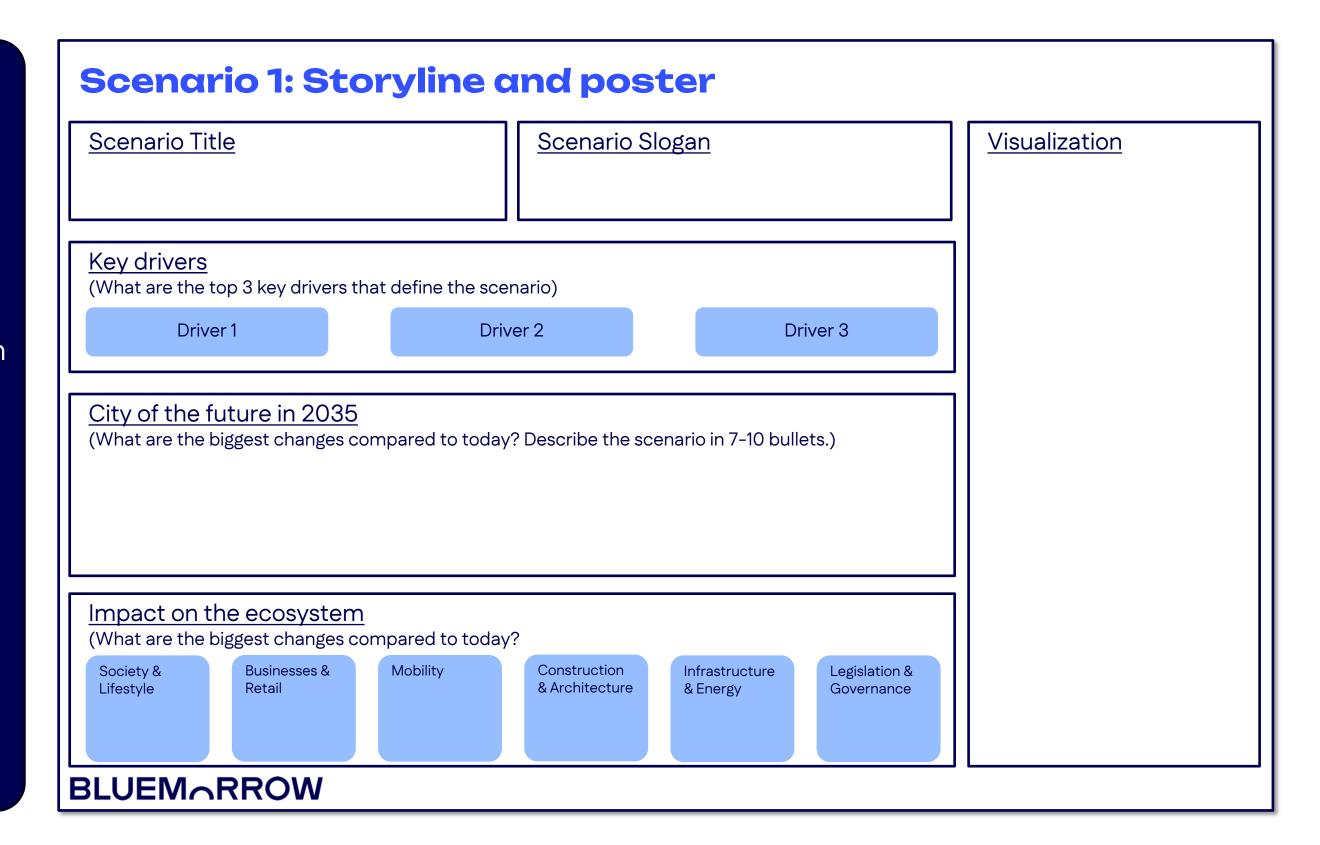
The examples in the outer sphere should be as concrete as possible – how does this scenario look like in detail?

SCENARIO STORYLINE AND POSTER

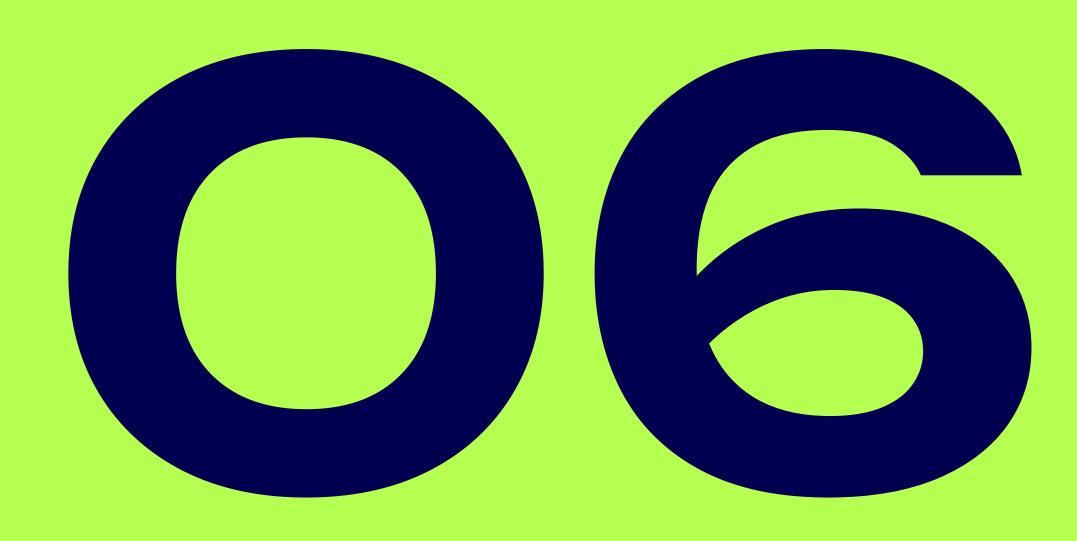
- Give your scenario a name
- Create a slogan for your scenario (max. 2 sentences)
- Define 3 key drivers that characterize the scenario
- Describe the "City of the future in 2035" what changes compared to today?
- Describe the impact on the ecosystem– what changes compared to today?

Pro tips:

- If possible, please write in complete sentences so that we can understand the information.
- You are welcome to divide into different teams within the small groups.
- Visualizations should showcase the core dynamics of the scenario. You can use AI to create them.



APPENDIX 4: SOURCES



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THANK YOU FOR READING

In case of any questions, please don't hesitate to reach out anytime to dominik.krabbe@bluemorrow.com