Disruptive cities
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The Disruptive Cities Rulebook
Life revolves around cities. More than half of the global population lives in cities, and that figure will only increase. However, even though humans are becoming increasingly urban, every city is unique. The size and wealth of a city are what truly set it apart, but the way in which a given city relates to others, how recent arrivals are integrated into society and a city's respect (or lack thereof) for the environment all play a key role in defining a city.

Populations are also changing. In Europe, we’re increasingly becoming an elderly population, while other continents, especially Africa, have the youngest populations in the world. Demographics will spark migration. Other elements, such as the rise in single-person households, will also lead to changes in cities. The need for sustainable cities will necessarily motivate change; these types of urban areas will be critical to our future survival.

More than half of the global population lives in cities, and that figure will only increase.
Climate Makes It onto The Agenda

Cities occupy 25% of the Earth’s surface but account for 60%-80% of world energy consumption, which is why it is essential that we work to make our urban areas sustainable. The good news: the international community has agreed that environmental protection must be a guiding principle of urban growth. The bad news: it is up to each country to craft the relevant legislation, and they may turn a blind eye when convenient.

The Pillars of a Smart City

The incorporation of technology into urban development has given rise to the smart city. This report has defined the five pillars that comprise a smart city. The first pillar consists of the technology that makes everything else possible (the Internet, electronics, sensors, etc.). The second pillar concerns the new forms of mobility that are emerging as a result of these technologies. The third pillar relates to how public utilities are formulated, designed and implemented within this new context. The fourth pillar encompasses the new infrastructure that smart cities require, while the fifth pillar concerns sustainability and respect for the environment.

Technology That Drives Change

The Internet is the foundation of the technological revolution that is taking place in cities. If we connect devices, street furniture, road signs and all types of sensors, we can collect massive amounts of information (big data) that will help us make more precise decisions. This boosts resource optimization and gets citizens more involved; they can provide information that will help the system manage urban issues.

Not All Cities Are Equal

The first caveat of discussing cities: they are all unique. It is difficult to make comparisons among them because they are vastly different in terms of wealth, development, size, history, location, etc. Though there is no universally accepted definition of the term city, we tend to point to a certain population density as well as outsourcing. Cities, in channeling the relationships they have with each other, are faced with a significant challenge. Smaller cities do not want to be overshadowed by larger ones, while inhabitants of the latter seek to preserve their identity.

Older, Younger: A Population Profile

Cities are a reflection of their inhabitants, who happen to be changing. The aging population in Europe will lead to transformations in services and infrastructure, which must adapt to the elderly and to the arrival of young people from Asia and, above all, Africa. The latter two regions will be a wellspring of young people in coming decades. Cities must be able to manage these migration flows that will stem from the current population pyramid.
Redefining Mobility

2.2
- Electric cars that recharge on the street. A boom in alternative forms of transportation that complements the rise of connected mobility, which, in turn, is based on smartphone applications. Combine these with public transportation. The result is changing the incredibly complex urban communications map, which could be turned on its head with the arrival of autonomous vehicles in the future. Given that the appearance of a city (streets with sidewalks, train tracks, etc.) depends on our forms of mobility, different forms of transportation can completely change urban design.

Up-To-Task Infrastructure

2.5
- A smart city is nothing without smart buildings and infrastructure. Future cities will only be efficient if their components are smart: sustainable or even self-sufficient buildings, road signs that communicate with vehicles, systems that automatically detect water and electrical leakages, etc.

Future cities will only be efficient if their components are smart.

Goal: Minimize Our Energy Footprint

2.3
- The fight for sustainable energy in cities has already begun. However, cities are also addressing other issues that concern the environment. The efficient management of resources and waste as well as the smart management of water and air-quality controls are some elements that cities are prioritizing when they take a more serious look at their environmental impact. The transition to renewable energy will be another litmus test for cities in coming years.

Big Data and the Transformation of Public Utilities

2.4
- Reduce the number of buses and improve wait times. Put an end to the obligatory trash collection route - sensors in trashcans will send a notification when they are full. Precisely determine the need for senior centers or daycare centers in a given area. These are but a few of the tasks that technology makes easier for local governments, which will gradually transform how they provide services in order to take full advantage of big data.

Processes and Trends That Will Change Everything

3.0
- The gradual development of smart cities is giving rise to new behavior patterns, which, in turn, may change how we interact with cities. For example, vehicle ownership has become less important as urban mobility platforms have grown.

Ownership Becomes Less Important

3.1
- Ridesharing; electric cars, motorcycles, bicycles and scooters scattered across the city, waiting to be used. People pay per minute to use these alternative forms of mobility, whereas vehicle ownership entails a significant initial cost as well as maintenance costs, etc. Is it worth owning a vehicle when there are affordable, on-demand alternatives? Many people no longer think so.

John de Yonge
Insights Director-EYQ, EY.

The Internet Gave Us Immediacy

3.2
- We now want, or demand, increasingly personalized customer experiences. We have become accustomed to
making purchases or crossing items off our to-do lists on the fly, while waiting at the bus stop or from the comfort of our couches. The public sector should be prepared for citizens to hold them to the same standard. Institutions will have to undergo profound changes, which will ultimately make them more efficient.

New Ways to Design and Build Cities

- Some companies can build single-family, concrete homes in a matter of hours for less than 100,000 Euros. Translucent building materials are being developed, which could make buildings’ ground floors more attractive. Self-repairing concrete even exists. Technology is facilitating higher quality construction, which will have a significant impact on the cities of the future.

The People Demand Their Own Space: The New Urban Social Contract

- Cities are facing monumental changes, which impact citizens. Yet one of the main concerns of local governments, especially in larger communities, is the creation of a sense of community that allows inhabitants to sincerely interact with each other and, to the extent possible, be engaged in what is happening around them. To this end, technology can be a powerful tool.

Redefining Public Space: A Greater Focus on the Pedestrian, Less Traffic

- Road traffic shapes a city’s appearance. Streets, bridges and roundabouts define the grid to which buildings and other infrastructure must conform. On-demand transportation rental and autonomous vehicles are expected to significantly reduce traffic. We need to start thinking about how we will use the space left by streets and parking lots.

The development of smart cities, as well as the resulting trends and processes, pose many challenges. For example, new forms of mobility have to be adapted to current infrastructure. Appropriate regulation is key to coordinating a smooth integration. All stakeholders that directly or indirectly shape new cities must be involved in crafting regulations. With the hope that all citizens can coexist, the fight against inequality will continue to be a priority. Cybersecurity will play a greater role as we become more hyperconnected.

The Primary Challenges Facing Disruptive Cities
Managing the Transition to New Forms of Mobility
4.1

> Of all the changes occurring in cities today, new forms of mobility may be the most visible in the eyes of inhabitants. There could be a tremendous difference between how we move about the city today and how we will do so in 30 years. Until then, we need to adapt our infrastructure to new forms of mobility, and we need to solve many practical problems. How will autonomous vehicles travel through our cities? Are our cities prepared to charge tens of thousands of electric vehicles?

Smart Regulation
4.2

> Flexible and inclusive regulation is key to ensuring success. Smart contracts and transaction algorithms can be helpful as well. Before regulations are implemented on a large scale, we need to define the responsibilities of private companies that operate fleets of on-demand vehicles. We also need to decide where and at what time these vehicles can travel. We have to make similar decisions regarding the regulation of platforms like Airbnb.

Gentrification and Housing Access: Squaring the Circle to Build Communities
4.4

Gentrification is a universal problem in big cities of the Western world. As we have seen, technology will reduce building costs, but population displacement towards the outskirts of cities (due to prohibitive housing prices in city centers) may exacerbate intercity traffic. Cities must ensure that gentrification does not become another form of discrimination and that, above all, it does not destroy citizens’ sense of community.

Cooperation from All Stakeholders to Design the City of the Future
4.3

> Long-term planning is necessary for ensuring that the different elements of new cities work in harmony with each other. All stakeholders will need to participate, and certain online tools can facilitate cooperation. For example, participatory budgeting allows citizens to have a voice in the decisions that affect their communities. The remaining task will be that of building long-term, political consensus to stay the course.

Anita Roth
Head of Policy Research at Airbnb.

The Fight Against Inequality (Among Citizens, Cities and Non-Urbanized Territories)
4.5

Technology per se is not good. The advent of smart cities and related processes and trends may widen the gap between the haves and the have-nots. The debate surrounding a universal basic income is relevant in this context. It is also important to think about what will happen to non-urban areas. It is worth thinking about the relationship that cities need to build with their surroundings, relationships based on a shared understanding of mutual dependence.

Anita Roth
Head of Policy Research at Airbnb.

(Cyber)security
4.6

The boom in the Internet of Things (IoT) and the hyperconnectivity of cities have brought cybersecurity into the foreground, which will play an essential role in ensuring that cities function properly.

Evan Wolff
Cybersecurity and Homeland Security Partner.
The Disruptive Cities Rulebook

The emergence of disruptive technologies is changing how we expect cities to meet challenges. How should we expect technology to change the urban landscape? To what extent is technology changing the world in which we now live? What additional challenges will the implementation of technology pose for cities? Cities are faced with significant changes, and experts at the Future Trends Forum defined 10 aspects that are key to cities’ future development:

- **Smart Cities.** Technology is changing life in cities by making them smarter. How will technology affect public utilities, such as urban mobility or the fight against pollution?
- **Connected Citizens.** The use of new, disruptive technologies is forming new trends in how cities function. How will citizens’ consumption patterns change?
- **Urban Space.** Cities are reclaiming space for pedestrians. What do we do with all the space that was originally reserved for parking?
- **Mobility.** Autonomous vehicles and new forms of mobility will gradually transform cities. How should we regulate new mobility systems?
- **Housing.** Cities will need flexible systems and new forms of regulation to manage housing. How can we engage all stakeholders (the public and private sectors as well as the population) in order to be agile?
- **Gentrification.** Combating inequality and providing access to services will be key to ensuring social integration in the cities of the future. How do we determine who belongs to a community? Are property and income the determining factors?
- **Aging.** Cities (especially those in Europe) need to consider their aging populations and develop health policies that meet their needs. What health policies and infrastructure are necessary to mitigate the consequences of an aging population?
- **Infrastructure.** Telecommunications and energy infrastructure must address the new needs of the cities of the future. What infrastructure should we prioritize in urban development?
- **Environmental Sustainability.** Cities must work towards efficient resource and waste management. How can we promote environmental sustainability and raise awareness in cities?
- **Innovation.** Cities must become innovation centers, where ideas are put into action and wealth and value are created. How can cities attract innovation?

In the 21st edition of our Future Trends Forum publication, you can learn about the tools that we all have at our disposal to build the cities of our dreams.