



# Urban expansion, an entrepreneur's playground

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## Rising in tandem

Urbanpreneurs use business solutions and creative problem-solving to address social and economic challenges that can help shape modern and successful cities.

This paper presents ways in which entrepreneurial activity develops synergistically with the growth of cities and helps address the social and environmental challenges associated with rapid urbanization through innovative business solutions. It does so by providing concrete examples of start-ups and small businesses that have developed organically within their urban environment. The purpose is to inspire more business-led solutions for resilient and sustainable cities of the future.

Today, around 56% of the global population resides in cities, growing to 68% - 7 out of 10 people, in 2050.<sup>1</sup> There will be an increase of 2.2 billion urban residents, living mostly in Africa and Asia.<sup>2</sup> With 10 cities the size of New York (a population of roughly 8,9 million people)<sup>3</sup> coming into being in the developing world every year, opportunities and challenges will follow in equal measure.<sup>4</sup>

Many cities around the world are struggling to meet the needs of the masses, such as increased demand for quality jobs, affordable housing, well-connected transport systems and other basic infrastructure services.

This makes cities a fertile ground for entrepreneurs who bring along innovation, job creation opportunities and delivery of products and services through new business models and technology platforms; all of which contributing to the future of a city.

Thanks to the availability of resources, access to infrastructure, talent, data, finance, information and market, cities attract entrepreneurs. Emerging trends in digitalization and the shaping of cities offer opportunities for entrepreneurs to engage in urban development and smart city economies. They act in a conducive and networked business ecosystem, in close collaboration with local governments, education institutions, civil society, fellow businesses and their clients.

As a result, entrepreneurs accelerate urbanization, which in turn provides a fertile ground for them, thereby creating a virtuous circle.<sup>5</sup>

To deliver quality services, modern cities rely on effective supply chains and information flows among all residents of the city ecosystem. Here, information and communication technologies (ICTs) and big data have become key elements to improve city operations as municipalities engage in the philosophy of smart city design.

Entrepreneurs are at the forefront of revolutionizing the flows and changes that we see in modern urban settlements. The need for city-level sustainable solutions is merging with the shift to the new global economic setting and societal divides deepened by the COVID-19 pandemic. The smart city economy is such an example. Linked to the urbanization and development of 22<sup>nd</sup> century cities, residents become connected and networked thanks to an increased use of technology.<sup>6</sup>

The emerging economic model is based on the principle of collaboration and an improved utilization of resources in which innovation and new technologies are key components. It promises to support the ability of cities to accommodate an increasing number of people

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<sup>1</sup>World Bank, Urban Development, 2020.

<sup>2</sup>UN Habitat, World Cities Report, 2022.

<sup>3</sup>New York City, New York population 2022. <https://worldpopulationreview.com/us-cities/new-york-city-ny-population>

<sup>4</sup>Naude W. Bangkok Post, 2016, <https://www.bangkokpost.com/opinion/opinion/1109265/entrepreneurship-is-shaping-the-worlds-megacities>

<sup>5</sup>Naude, W. Entrepreneurship is shaping the world's megacities, 2016.

<https://www.bangkokpost.com/opinion/opinion/1109265/entrepreneurship-is-shaping-the-worlds-megacities>

<sup>6</sup>Seubers, A. 22<sup>nd</sup> century citizens – changing cities around them, 2013. <https://atos.net/en/blog/22nd-century-citizens-changing-cities-around-them-2>

migrating to existing urban centers, as well as emerging rural cities. However, as urban populations grow, so do the challenges affecting the quality of life. And with more than one billion youth from the developing world expected to enter the labor market over the next ten years,<sup>7</sup> it is all the more important to invest in job creation initiatives.

Urbanization, if properly harnessed, has a transformative power to mitigate the rise of inequalities between countries,<sup>8</sup> led by the fourth industrial revolution and exacerbated by the pandemic. As most developing cities witness a deepening of social and economic divides and struggle to meet the demands of the population, the urbanization phenomenon has given rise to a new breed of innovator – *urbanpreneurs*,<sup>9</sup> who collaborate and tap into the available pool of urban resources to solve city-level challenges and improve the quality of life of residents.

The urban business sphere increasingly carries Corporate Social Responsibility to include environmentally conscious practices into its business operations in support of sustainable city development.<sup>10</sup> Where public systems are slow to provide, entrepreneurs, through their businesses and initiatives, are filling the gaps.

These key transformations are incentives for entrepreneurial endeavors and help attract talent while also driving continuous local-level growth.

Fostering entrepreneurship and innovation for urban development is important and can inspire more business-led innovations for resilient and sustainable cities of the future. It relates to Sustainable Development Goals 8 on decent work and economic growth, 9 on among others innovation and 11 on urbanization.

The United Nations formally recognizes entrepreneurship as a key ingredient in development through a series of General Assembly resolutions on entrepreneurship for sustainable development since 2012. The UN's body on trade and development (UNCTAD) provides continued support to micro, small and medium-sized enterprises (MSMEs) and start-ups,<sup>11</sup> in line with the 2030 Agenda for Sustainable Development.

## Urban entrepreneurship and city development

Entrepreneurs today have a tremendous opportunity to provide solutions to urban challenges. Businesses, in particular start-ups, are in a unique position to influence the development of sustainable and competitive cities to meet the needs of their citizens through technological innovation. The fast digital onboarding can be observed in developing countries, where now more than half of the population uses the Internet.<sup>12</sup> Increasing connectivity facilitates greater interaction and access to information which gives rise to networked ecosystems where entrepreneurs more easily innovate, scale-up and expand to new markets. In low-income countries, it is expected that new entrepreneurs will make an increased use of digital technologies in the future when selling their products or services.<sup>13</sup> These trends reveal that entrepreneurs across industries are getting prepared for a digital future, allowing businesses to leapfrog beyond the realms of the current status quo.

The idea of technology being the great equalizer is not new. Thanks to stronger Internet connectivity on a global scale, democratization of new technologies is making innovation tools readily available to more entrepreneurs. They can now tap into artificial intelligence (AI) and other new technologies (open source software, online learning programs, Internet of Things

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<sup>7</sup> Youth unemployment: The Facts, 2020. <https://gdc.unicef.org/resource/youth-unemployment-facts>

<sup>8</sup> Harness “transformative potential” for people and planet, 2020. <https://news.un.org/en/story/2020/10/1074632>

<sup>9</sup> Cohen, B. and Munoz, P. The Emergence of the Urban Entrepreneur, 2016.

<sup>10</sup> Murphy, D. and Ng’ombe, A. 2009. Corporate Social Responsibility. [Corporate Social Responsibility | SpringerLink](#)

<sup>11</sup> The Bridgetown Covenant, paragraph 127r, October 2021, United Nations Conference on Trade and Development. [https://unctad.org/system/files/official-document/td541add2\\_en.pdf](https://unctad.org/system/files/official-document/td541add2_en.pdf)

<sup>12</sup> SDG Pulse, Digitalization helps mitigate pandemic impacts, but digital and data-related divides affect ability to recover. <https://sdgpulse.unctad.org/ict-development/#9-c-1>

<sup>13</sup> Global Entrepreneurship Monitor 2021/2022.

(IoT) powered platforms) to scale-up, go digital with free e-commerce platforms and connect with fellow entrepreneurs at online meetups or even launch businesses with the help of virtual ideas marketplaces.<sup>14</sup> New concepts such as Fintech, crowdfunding and crowdlending enable potential entrepreneurs to test, develop and launch business ideas while making them less reliant on traditional funding mechanisms.

Another key ingredient of urban development is an effective knowledge circulation that relies on an agile smart city ecosystem where information is readily accessible and flows between municipalities, entrepreneurs, academic institutions, and citizens. Accelerated urbanism has placed the need for open information systems and data technology at its center, and entrepreneurs and businesses are seizing this moment to create new services and products in this area.

### Smart ecosystems as a bedrock for urban development

The building of robust and resilient cities needs the collaboration of and innovation from multiple stakeholders if they are to meet the demands of changing city landscapes.

A collaborative smart city ecosystem encompasses partnerships from a myriad of sources - conventional and non-conventional. Beyond local governments and established businesses, other stakeholders include universities, research facilities, entrepreneurs, start-ups and small and medium-sized businesses (SMEs) fully exploiting opinions, knowledge and experience of everyone in the community as can be seen through examples given in box 1.<sup>15</sup> Integrated technology-led solutions spearheaded by technology-driven enterprises pave the way for new-found paths of development, for example collaboration alliances with citizens and open data ventures with entrepreneurs.<sup>16</sup>

#### Box 1 – Multistakeholder-driven smart city ecosystems

A strong smart city ecosystem based on public-private initiatives can be found in Barcelona, Spain where, for example, the Starlab initiative was developed by the Council of Barcelona and businesses to reduce water usage and improve public areas for inhabitants.<sup>17</sup> A new irrigation management system for the city was put in place that is based on an open software platform and sensor technology and collects live data on the temperature, humidity, sunlight and wind velocity.<sup>18</sup>

New Songdo City in the Republic of Korea is listed among the smartest cities in the world. Its infrastructure<sup>19</sup> contains sensors that monitor temperature, energy use and traffic flows and help authorities to respond to problems.<sup>20</sup> This project was co-designed by the local government and IT companies to craft a new way of living through the use of smart technology solutions.<sup>21</sup> Nestled in the Incheon Free Economic Zone, the city plans to attract more international entrepreneurs and talent with financial incentives, sustainability credentials and investments in top-tier education centres.<sup>22</sup> Such entrepreneurship-led additions to modern cities lead to increased quality of life for residents, which in turn becomes a magnet attracting 'creative class' and highly educated individuals.

<sup>14</sup> The Urbanpreneur spiral: 3 converging forces driving entrepreneurship in cities, 2016.

<sup>15</sup> Smart cities and the promise of innovation in public services, 2019. <https://hub.beesmart.city/en/strategy/smart-government/smart-cities-and-the-promise-of-innovative-public-services>

<sup>16</sup> Ibid.

<sup>17</sup> Saving water with Smart irrigation system in Barcelona. <https://www.libelium.com/libeliumworld/success-stories/saving-water-with-smart-irrigation-system-in-barcelona/>

<sup>18</sup> Laursen, L. Barcelona's Smart city ecosystem, 2014. <https://www.technologyreview.com/2014/11/18/12190/barcelonas-smart-city-ecosystem/>

<sup>19</sup> Overstreet, K. Building a city from scratch: The Story of Songdo, Korea. <https://www.archdaily.com/962924/building-a-city-from-scratch-the-story-of-songdo-korea>

<sup>20</sup> S. Shresta. Big data application in smart cities. <https://www.cs.helsinki.fi/u/jilu/paper/SmartCity.pdf>

<sup>21</sup> Benedikt, O. The Valuable Citizens of Smart Cities: The Case Study of Songdo City.

[https://gjss.org/sites/default/files/issues/chapters/papers/GJSS%20Vol%2012-2%201%20Benedikt\\_0.pdf](https://gjss.org/sites/default/files/issues/chapters/papers/GJSS%20Vol%2012-2%201%20Benedikt_0.pdf)

<sup>22</sup> Lobo, R. Could Songdo be the world's smartest city? 2014. <https://www.worldfinance.com/inward-investment/could-songdo-be-the-worlds-smartest-city>

In the United Arab Emirates, Dubai is known as a hub for entrepreneurship and start-ups thanks to its digital infrastructure and that SMEs can avail the services of various government projects, public-private partnerships, incubators, accelerators and venture capitals.<sup>23</sup> It has a range of business-friendly policies and initiatives targeting at attracting entrepreneurs to set up shop. All of this resulting in 95% of the country's firms to be SMEs or start-ups, employing 42% of its workers and accounting for more than 40% of its gross domestic product.<sup>24</sup> As a growing business-friendly city ecosystem, it relies on collaboration between the public and private sphere, which encourages and promotes innovation across different sectors. Smart Dubai Platform is one such project, a so called "nerve centre" that unifies ongoing government initiatives toward digitalization. Created with Du Telecom company to unite the city's infrastructure with IoT, big data and cloud services, the goal is to make Dubai a liveable city and promote a smart lifestyle among the growing number of residents.<sup>25</sup>

As one of the fastest growing economies in the world, Vietnam is on track to become the 20<sup>th</sup> largest global economy by 2050.<sup>26</sup> Two main entrepreneurship hotspots are located in the capital of Hanoi and Ho Chi Minh City, both known for strong entrepreneurial spirit and focus on using technology to address local problems. The rapidly growing city of Hanoi is looking to transform itself into a smart city with an effective local e-government by 2025, enlisting help from IT companies to build large data centers to effectively roll out e-services and digitalize urban transport and infrastructure.<sup>27</sup> The property developer Sunshine Group pioneers smart living ecosystems by integrating smart technologies into its products to build intelligent infrastructure such as Smart Home App.<sup>28</sup>

### Entrepreneurs and the smart city model

A smart city, powered by innovation, data and IoT is built on the basis of improving quality of life, enhancing business competitiveness and ensuring environmental sustainability.<sup>29</sup> New technologies are poised to have a strong impact on sustainable urban development in the coming years, with the private sector leading digital innovation and leveraging emerging technologies to deliver more efficient and inclusive urban services.<sup>30</sup>

City infrastructures must meet the current needs of residents while also looking to the future to sustain a growing population. The approach requires to be two-fold as aging infrastructure requires to be maintained and new, modern solutions need to be built in tandem.<sup>31</sup> Infrastructure and resources like energy provision, electricity, waste management, health services and traffic management are integral to how urban cities cater to their citizens, and ultimately to their productivity. For instance, in São Paulo, Brazil, traffic jams alone were estimated to cost \$17.8 billion a year in lost productivity, wasted fuel and adverse health effects from vehicle emissions.<sup>32</sup> Advanced technologies brought by the fourth industrial

<sup>23</sup> Dubai: a city that incubates the entrepreneurship culture, 2022.

<https://economictimes.indiatimes.com/news/international/uae/dubai-the-city-that-incubates-a-culture-of-entrepreneurship/articleshow/89826131.cms?from=mdr>

<sup>24</sup> The UAE's entrepreneurial ecosystem and how to be a part of it, 2022. <https://seedgroup.com/2022/01/the-uaes-entrepreneurial-ecosystem-and-how-to-be-a-part-of-it/>

<sup>25</sup> International Telecommunication Union. Dubai Pulse – Smart Dubai Platform.

<https://www.itu.int/net4/wsis/archive/stocktaking/Project/Details?projectId=1514437355>

<sup>26</sup> Egusa, C. An entrepreneur's guide to Vietnam's startup scene, 2018. [An entrepreneur's guide to Vietnam's startup scene \(thenextweb.com\)](https://thenextweb.com)

<sup>27</sup> Sagar, M. Hanoi works with international smart cities and businesses to build e-government and smart city by 2025, 2019.

[Hanoi works with international smart cities and business to build e-government and smart city by 2025 – OpenGov Asia](https://www.opengovasia.com/news/hanoi-works-with-international-smart-cities-and-business-to-build-e-government-and-smart-city-by-2025)

<sup>28</sup> Asia IoT Business Platform, The Race of Building Smart Cities in Vietnam, 2019. <https://iotbusiness-platform.com/insights/the-race-of-building-smart-cities-in-vietnam/>

<sup>29</sup> Ismail, N. Why do businesses and societies need smart cities? To survive..., 2018. <https://www.information-age.com/businesses-and-smart-cities-123473679/>

<sup>30</sup> OECD, Enhancing the contribution of digitalization to the smart cities of the future, 2019.

<https://www.oecd.org/cfe/regionaldevelopment/Smart-Cities-FINAL.pdf>

<sup>31</sup> Urban infrastructure: Keeping economies and people healthy. <https://theonebrief.com/urban-infrastructure-keeping-economies-and-people-healthy/>

<sup>32</sup> Urban infrastructure: Keeping economies and people healthy. <https://theonebrief.com/urban-infrastructure-keeping-economies-and-people-healthy/>

revolution enable cities to redesign their infrastructure and deliver public services in a smarter and more efficient way.

Digitalization can help this cause by providing a framework that not only delivers better services, but also monitors the changing needs with big data, allowing for fast adaption. They are fundamental to the smart city model with the ability to collect and report on trends, which is vital to a smart city's ongoing success.<sup>33</sup> Cities need to design a good and truly agile plan on how they will ensure that adequate resources are available for innovation, including estimates of smart city benefits versus costs, and agile contingency measures in the event of disruptive trends or ecosystem gaps.<sup>34</sup>

Embracing data technologies will help to deal with the social transformation of handling population growth and change, migration, healthcare challenges and resource depletion of which some initiatives taken are presented in box 2.<sup>35</sup>

### Box 2 - The impact of new data technologies in cities

With the support of private sector investment, Rwanda is developing a center of excellence as a pioneering Pan-African digital hub to drive economic growth through digital transformation. Kigali Innovation City (KIC) will be a networked ecosystem where transformative start-ups and other innovative companies, investors and academia interact and offer support services that build a community and facilitate new ideas.<sup>36</sup> Designing a hub of this nature incentivizes potential entrepreneurs to gather where resources and information sharing is abundant. These specific features in turn, make up the urban ecosystem.

The African Geospatial-Intelligence Agency (AGIA) leverages the power of geospatial technologies to improve urban planning, among others. The aerospace research and development company that is based in Togo uses satellite remote sensing, drones and data analytics<sup>37</sup> to address city-level challenges such as public health, natural resources management, as well as designing digital platform to collect climate and hydrological data to improve climate resilience.

Another important consideration for effective resource distribution and liveability is spatial planning. Cities with high population density and limited geographical space, such as Amsterdam and Copenhagen are based on the compact city model. Its principles include “compactness, density, diversity, mixed uses, sustainable modes of transportation and green spaces”.<sup>38</sup> All of these features should work together to form an integrated spatial planning approach to cities of the future, as can be seen through the example of Neom city in box 3.

### Box 3 – Smart city planning – a visit to the future

The Line at Neom project in Saudi Arabia, presents a radical revisit at urban planning, factoring in livability and environmental crises as the central problems it is finding solutions for. By using a planning system called 'Zero Gravity Urbanism' the city is designed with vertical layering allowing people to move in three dimensions, up, down and across.<sup>39</sup> It is envisaged that everything will run on renewable energy, and due to its vertical nature, the impact and footprint on the surrounding environment to be minimal. Livability within The Line is expected to be of the highest quality as all

<sup>33</sup> Wechsler, J. Why smart cities are a golden opportunity for entrepreneurs, 2018.

<https://www.entrepreneur.com/article/320199>

<sup>34</sup> <https://hub.beesmart.city/en/strategy/smart-government/smart-cities-and-the-promise-of-innovative-public-services>

<sup>35</sup> Ismail, N. Why do businesses and societies need smart cities? To survive..., 2018. <https://www.information-age.com/businesses-and-smart-cities-123473679/>

<sup>36</sup> Kigali Innovation City. <https://www.africa.engineering.cmu.edu/about/living-in-rwanda/kigali-innovation-city.html>

<sup>37</sup> VC4A, African Geospatial-Intelligence Agency (AGIA). <https://vc4a.com/ventures/african-geospatial-intelligence-agency-agia/>

<sup>38</sup> Sanches P et al, Green and Compact: A Spatial Planning Model for Knowledge-Based Urban Development in Peri-Urban Areas, 2021

<sup>39</sup> The Line: The city of the future in Neom, 2022. <https://www.tradelinkmedia.biz/publications/7/news/3946>

amenities will be within five minutes of travel. All transport will be provided by electric rail and pods. There will be no vehicles and thus no pollution. Water will be provided by a desalination process and green spaces take center stage within the city. Entrepreneurs and business leaders alike are already looking to Neom as an innovation hub, where it will be possible to tap into world-leading networks, technology and research to commercialize cutting-edge ideas.<sup>40</sup> It ultimately redefines the concept of urban development and what cities of the future could look like.<sup>41</sup>

The way cities are shaped in their expansion and development not only depends on a careful planning but also on their ability to nurture entrepreneurs. Entrepreneurs are the ones who can spot market opportunities and meet the needs of growing cities and populations as can be seen through the example of a start-up in Lagos in box 4. This promotes competitiveness, not only of businesses, but also of cities themselves.

#### Box 4 – Innovative start-up counters a city problem

Start-up Shuttlers, based in Lagos, Nigeria entered the bus-sharing and mass transit space. It aims to alleviate the traffic congestion problem by providing a forward-thinking tech-led alternative to public transport. Lagos has one of the highest number of commuters of all the megacities worldwide with a daily record of approximately 227 cars per kilometer. With Shuttlers, professionals can share rides in corporate busses to work, which reduces the number of vehicles in the heavily congested city. The company also uses big data analytics to observe customer behavior metrics and real time engagement on the app as well as for social media following, which helps to identify its target audience. It also uses big data for marketing analytics and optimal routing to effectively predetermine bus routes and reduce carbon footprint on the city environment by offering an easy ride-sharing alternative to public transport.<sup>42</sup>

### Driving community development

Community based entrepreneurship, also called social entrepreneurship, aims at addressing the needs of underserved, marginalized groups. As most of the rapid urbanization is concentrated in developing countries and markets, small scale entrepreneurship is viewed to have a complementary role to engineering growth<sup>43</sup> by providing jobs and other livelihood opportunities to local people and thus, feeds into the larger scale development of urbanization in this part of the world, as a Brazilian business showcases in box 5.

Community-oriented enterprises act as agents of change to improve the livelihoods of people, while simultaneously inspiring others to pursue business ideas. However, in developing countries a lot of emphasis is placed on creating relief and charity, rather than empowering institutions and systems and local people. Overlooking the strength of informal or rudimentary markets may be a serious economic oversight.

#### Box 5 – A human-centered business model determining the future of a city

The town of Juruia in Brazil is an example where Ouseuse, a woman-led micro-business contributed to build the foundations for an undergarment production hub, leading to the creation of the capital of lingerie.<sup>44</sup> This was done through an innovative business model combining latest fashion trends in lingerie with latest technology in fabrics and empowering the sales team consisting of women to sell the products in their own time so as to not infringe on other jobs and family responsibilities.

<sup>40</sup> Abdul Latif Jameel Machinery prepares the ground for a new future at Neom, 2021. <https://alj.com/en/news/abdul-latif-jameel-machinery-prepares-the-ground-for-the-new-future-at-neom/>

<sup>41</sup> The Line: The city of the future in Neom, 2022. <https://www.tradelinkmedia.biz/publications/7/news/3946>

<sup>42</sup> Damilola Olokesusi, Shuttler CEO.

<sup>43</sup> UNCTAD, The Least Developed Countries Report 2018: Entrepreneurship for Structural Transformation, 2018. [https://unctad.org/system/files/official-document/lcr2018\\_en.pdf](https://unctad.org/system/files/official-document/lcr2018_en.pdf)

<sup>44</sup> Empretec WIB Awards 2022-5Aug2022-v2.pdf



These urban micro ecosystems with enterprises at their core bring together people and resources and mobilize action where it may otherwise have been stagnant. They identify problems and offer concrete solutions to social and economic challenges within communities at scale.

It is therefore key that local governments and entrepreneurs work hand in hand to identify challenges, provide incentives and effective frameworks for entrepreneurs to address social and economic challenges faced by vulnerable communities in the urban context.

### Driven by purpose, guided by vision

Urban areas where vibrant economic activity may not be expected, are slums or informal settlements. Here residents lack basic services such as water, electricity or adequate sanitation - some of the major challenges of urbanization. More than a billion and a half of the world's population live in slums.<sup>45</sup> Yet, informal settlements such as Dharwi in India, Neza-Chalco-Itza in Mexico or Makoko in Nigeria are vibrant communities that exist in the shadow of megacities and offer economic opportunities to entrepreneurs, presenting a symbiosis between the informal and circular world,<sup>46</sup> of which an example is given in box 6.

For example, informal waste pickers may play a role in greening the economy, often being the only ones to provide waste collection services. In Brazil, the surge of *catadors* (informal waste pickers) that contribute to a recycling trade<sup>47</sup> spurred the government to integrate them into the municipal waste management network and recognize waste pickers cooperatives through the National Solid Waste Policy.<sup>48</sup>

Entrepreneurship has even become one of the defining factors of favelas, where “slum entrepreneurs” run unique businesses borne out of creativity to fulfill communities’ needs. There are approximately 6 million of such microbusinesses, making up 27% of Brazilian GDP.<sup>49</sup>

By setting up a ‘community-oriented franchise-based’ business model with members of the community, not only are jobs created, but a community can bring about the change needed and lead the transformation as it already knows what needs to be done. Small-scale businesses act as community-builders by facilitating information flow, enhancing relationships, diffusing technologies and ideas.<sup>50</sup>

#### Box 6 – How disruptive start-ups help the underserved in a favela

An example of a business that places community well-being at the center of its efforts is Banco de Paraisópolis which drives financial inclusion in the Paraisópolis favela,<sup>51</sup> enabling its residents and small business-owners to take out microcredit with low-interest rates. Profits from operations’ fees get reinvested into community development, such as social projects, commerce and job creation.

Environmental sustainability is the underpinning of most smart city goals as it promotes greater quality of life and mitigates a city’s ecological footprint as can be seen with an urban farming initiative launched in Johannesburg in box 7. The emergence of urbanization as a global megatrend is intertwined with the existential challenges that the world has faced over the last

<sup>45</sup> UN-Habitat, Adequate Housing and Slum Upgrading, p.4.

<sup>46</sup> Marino, G. The slum economy: the alliance between circular and informal, 2021.

<https://www.renewablematter.eu/articles/article/the-slum-economy-an-alliance-between-circular-and-informal>

<sup>47</sup> Global Alliance of waste pickers. Law report:Brazil. <https://globalrec.org/law-report/brazil/>

<sup>48</sup> Ibid.

<sup>49</sup> The Borgen Magazine. New Boom of Entrepreneurship in Brazil’s Favelas, 2018.

<https://www.borgenmagazine.com/entrepreneurship-in-brazils-favelas/>

<sup>50</sup> Parwez, S.Community-based entrepreneurship: evidences from a retail case study, 2017. <https://innovation-entrepreneurship.springeropen.com/articles/10.1186/s13731-017-0074-z>

<sup>51</sup> Borgen Magazine, New boom of entrepreneurship in Brazil’s favelas, 2018.

50 years, including climate change, rising inequality and the rise in zoonotic viruses with the latest being the COVID-19 pandemic.<sup>52</sup> The resilience of cities to deal with these existential threats is of paramount importance for future planning. Just with the pandemic we have seen massive disruption to supply chains, pressure on public systems, including health systems, societal transformation and more.

### Box 7 – Urban agripreneurs with an ecological touch

Urban farming is to be one of the most innovative areas for green infrastructure in Sub-Saharan Africa. Johannesburg in South Africa launched the Urban Agriculture initiative in partnership with the Small Enterprise Development Agency to expand the urban food ecosystem with the aim to create employment opportunities and empower urban agripreneurs.<sup>53</sup> As a result, farms are sprouting on the city rooftops, effectively meeting demand for locally sourced food, capturing carbon and creating green jobs to counter unemployment within the local community.<sup>54</sup> The optimization of urban spaces through vertical farming is one of the sustainable elements of the smart city economy.

### Redesigning the future of store experience

Today's world is seeing a convergence of physical stores and the digital world, as more retailers, including mom and pop shops begin offering their products online.

Thanks to the rise of online shopping, malls or large shopping centers find themselves competing with digital stores to attract and retain visitors. Historically, their role in the community has been more than just a place to shop as they also offer a place for people to meet and spend time together. To stay relevant in an increasingly digitized world, shopping centers are becoming destinations in their own right, offering different experiences such as arcade, theatre, cinema or other.<sup>55</sup>

China has been at the forefront of redesigning the shopping experience by uplifting local community-based retailers and helping them go digital. The extensive use and adoption of advanced technologies start to play a key role in shaping new approaches to retail management and shopping experiences. In particular, the application of digital solutions and data analytics holds potential to open up a window of opportunities to help transform the old form of retail, the mom-and-pop shops.

They are called duka in East Africa, spaza in South Africa, sari-sari in the Philippines or kirana in India.<sup>56</sup> These micro-merchants and family-owned stores are often the lifeblood of communities, selling more than just products, as they also serve as venues for gatherings or even distribution of consumer goods. As a result of more people shopping online from the onset of the COVID-19 pandemic, these small stores are slowly being integrated into the digital ecosystem, which is set to enhance their operations, deepen connections with the community and thus upgrade their role to serve a digitally conscious consumer. In this scenario, the idea of smartness goes beyond just upgrading small stores and plug them into the digital world; they elevate communities' and consumers' experience dimensions as part of their renewal.

Tech-savvy enterprises are at the forefront of redesigning the shops' floor, employing different strategies to create thriving cities and retail hubs as can be seen in examples in Malaysia and South Africa presented in box 8. This includes creating digital solutions to modernize businesses and help them become more efficient, competitive, agile, and customer focused.

<sup>52</sup> UN Habitat, World Cities Report, 2022

<sup>53</sup> Urban Agriculture Initiative, 2018. <https://www.jicp.org.za/urban-agriculture-initiative/>

<sup>54</sup> Sustainable farming is about meeting the needs of communities today and in the future. <https://urbanagriculture.co.za>

<sup>55</sup> Turning shopping centres into destinations using experience lighting. <https://www.mk-illumination.com/article/turning-shopping-centers-into-destinations-using-experience-lighting/>

<sup>56</sup> Tung, H. A glimpse into the future of retail with mom and pop shops, 2019. <https://www.techinasia.com/glimpse-future-retail-mom-and-pop>

The future of retail is not going to be the competition between physical stores versus online shopping, but a mixture between the two, experts predict.<sup>57</sup> New retail also includes customers' participation in the marketing process as more shops and shopping malls get redesigned to become a sort of content studio,<sup>58</sup> where employees broadcast new products or run tutorials.

#### Box 8 – How mom and pop stores embrace digitalization

In Malaysia, where mom and pop stores can be found on almost every street, start-ups like Dropee offer small shops a B2B eCommerce platform to source the right products from verified suppliers and bring their businesses online. In addition to its retail services, Dropee plans to expand its value proposition and start offering financing support to small businesses by extending up to 60 days credit terms, effectively increasing the longevity of small shops and helping them adapt to the new normal.<sup>59</sup>

Start-up Shopit in South Africa digitizes informal mom and pop stores in cities that serve millions of customers<sup>60</sup> and helps them connect to the formal economy.<sup>61</sup> Due to their informal nature, these stores have difficulties accessing affordable stocks and financial solutions. Oftentimes, the grocery store owners order at gut feels when the products run out. However, because of the widespread smartphone use, Shopit developed a mobile app that enables store owners to compare prices at wholesalers and buy products at the best price, effectively making them smarter and integrating them into a central logistics system. At the same time, Shopit offers wifi hotspots at the stores for the locals to use free of charge.

In the age of big malls and widespread online shopping, mom and pop shops can remain true to their roots while seizing the benefit of digital tools to expand their businesses, offer customers new experiences and serve as agents of change for the wider community.

### Urban development through multi-stakeholder collaboration

Modern cities embrace collaboration as a fundamental principle for growth. New technologies like IoT and big data are built to connect a large number of people, buildings and devices found only in urban settings. This allows a networked ecosystem to emerge, where people can easily interact and do business and communities work together to solve problems, effectively creating collaborative ecosystems that define a smart city economy.

The concept of a smart city economy emerged from the widespread adoption of digital technologies, democratization of resources and growing concerns for the environment. Sharing as a more sustainable way of utilizing resources is being integrated in new city economies today, mostly by start-ups and innovative problem solving SMEs.

For example, new technologies enable collaboration between people or enterprises and sharing of resources as a mass phenomenon - think about software and apps in daily use, shared workspaces and so on. Even more so, sharing apps and platforms have changed the way people consume and experience products, and how businesses operate - now being able to outsource small-sized tasks like delivery and marketing to third parties. Entrepreneurs have

<sup>57</sup> Deloitte, The future of the mall. <https://www2.deloitte.com/content/dam/Deloitte/ca/Documents/consumer-industrial-products/ca-future-of-the-mall-en-AODA.pdf>

<sup>58</sup> Moore, K. When Instagram Meets Real Life: Transforming Stores into Content Studios, 2021.

<https://www.shopify.com/in/retail/stores-becoming-content-creation-studios>

<sup>59</sup> Singh, K. Malaysia's Dropee Raises US\$7 mil Series A to increase digitalization of SMEs, 2022.

<https://www.digitalnewsasia.com/business/malaysias-dropee-raises-us-7-mil-series-increase-digitalisation-smes>

<sup>60</sup> MIT Initiative on the Digital Economy, Shopit – 2019 MIT IIC Global Finalist, Africa, 2019.

[https://www.youtube.com/watch?v=ih6i-PtJga8&ab\\_channel=MITInitiativeontheDigitalEconomy](https://www.youtube.com/watch?v=ih6i-PtJga8&ab_channel=MITInitiativeontheDigitalEconomy)

<sup>61</sup> ORIBI Village, Shopit And They'll Drop It, 2022. <https://www.oribi.org.za/post/shopit-and-they-ll-drop-it>

adopted these concepts across several industries, launching e-companies in traditional markets such as real estate, supply chain to waste management.

As economic powerhouses, cities are responsible for 70% of greenhouse emissions and are becoming hotbeds for disease outbreaks and, with their expansion, threaten natural habitats. Increasing migration flows into cities are also making urban populations more vulnerable to the climate change impacts.<sup>62</sup> Hence, it has become critical for enterprises across all sectors and continents to take into account environmental and social concerns and help build climate resilience. In the upcoming decades, hundreds of millions of citizens are expected to be affected by rising sea levels, unpredictable rainfall patterns and potential disease outbreaks as a result of temperature increase. The populations most at risk, however, are the urban poor, the slum-dwellers in the developing world.<sup>63</sup> Going forward, businesses are increasingly expected to incorporate sustainable practices into operations by the market demand, driven by the 21<sup>st</sup> century value-conscious consumer.

### Driving the collaborative economy

Sustainable and collaborative elements within the economy have infiltrated many sectors with entrepreneurs finding ways to share and pool resources and assets instead of them lying idle or going to waste. Small start-ups have spawned industry-wide changes at a systemic level and grown into some of the largest companies in the world. More and more of these are emerging. Some of the sectors are mobility and transportation (Uber, Lyft), spaces (Airbnb, Wework, Makespace), skills and talent (Upwork, Fiverr), Financing (Prosper, GoFundMe), health (Doctor on Call), utilities, food and learning (Coursera, Udemy).<sup>64</sup>

Businesses that are part of a smart city economy are expected to generate a positive impact on the environment by reducing atmospheric emissions, increasing the share of renewable energy and recyclable resources, as well as reducing the use of raw materials, water, land and energy. Projections show that shifting from a linear approach of “take, make and dispose” to a circular system is estimated to have as much as \$4.5 trillion potential for economic growth by 2030.<sup>65</sup> Some examples of circular economy initiatives are presented in box 9.

When looking at the SDGs, goal 13 on climate action cuts across many of the other goals, including clean water (SDG 6), clean energy (SDG 7), sustainable industry, innovation and infrastructure (SDG 9) and sustainable cities and communities (SDG 11), hence asking for a multistakeholder approach, including in the area of investments.

#### Box 9 – Circular economy’s impact on urban areas

Colombian based food tech startup EatCloud aims to reduce hunger and waste. Launched in 2019, it uses technology to manage food that cannot be sold and brings it to those who need it the most.<sup>66</sup> The company expanded its services from 2 to 230 cities during the COVID-19 crises, mobilizing 6.500 tonnes of food and linking up farmers, brands, supermarkets, small stores, bakeries, restaurants with those in need, reinforcing their purpose “serve on scale”.<sup>67</sup>

<sup>62</sup> United Nations Climate Change. Rapid Urbanization Increases Risk for Billions of People, 2017.

<https://unfccc.int/news/rapid-urbanization-increases-climate-risk-for-billions-of-people>

<sup>63</sup> UN Habitat. Climate Change. <https://unhabitat.org/topic/climate-change>

<sup>64</sup> World Economic Forum, Collaboration in cities: from sharing to “sharing economy”, 2017.

[https://www3.weforum.org/docs/White\\_Paper\\_Collaboration\\_in\\_Cities\\_report\\_2017.pdf](https://www3.weforum.org/docs/White_Paper_Collaboration_in_Cities_report_2017.pdf)

<sup>65</sup> Organisation for Economic Co-operation and Development, The circular economy in cities and regions: Synthesis Report.

<https://www.oecd-ilibrary.org/sites/bf67b33c-en/index.html?itemId=/content/component/bf67b33c-en>

<sup>66</sup> EatCloud. <https://www.eatcloud.com/>

<sup>67</sup> Albormoz, C. M. EatCloud: A Startup that Leverages Technology to Minimize Food Waste and Reduce Hunger in Colombia, 2020. <https://www.seedstars.com/content-hub/life/eat-cloud-startup-leverages-technology-minimize-food-waste-and-reduce-hunger-colombia/>

Local app Mr. Green Africa works with multiple stakeholders to collect waste and recycle in Kenya. It not only creates jobs but also incentivizes people to recycle by giving them points which can be redeemed at service stations. Mr. Green Africa also turns waste into high-quality reusable products. With only 4% of Africa's waste being recycled, this initiative is at the heart of a sustainable practice.<sup>68</sup> On top of tackling environmental concerns, the business works directly with waste-pickers to raise their income with technologically enabled transactions, thereby further formalizing the sector.<sup>69</sup>

At a time when people's needs are increasing and resources are diminishing, a smart city economy bodes well for a sustainable approach but getting to grips with the pitfalls and potential of the sharing economy is critical. If managed well, the sharing economy can have a transformative impact on cities. It can boost the economy, nurture a sense of community and improve the environment by making the most efficient use of resources.

### Cities creating clusters

In order to attract investment, four categories that city policy can focus on can be outlined. These are the fiscal environment, the investment and credit environment, the regulation, legal and policy environment and the institutional environment. These frameworks should be underpinned by strategic vision and planning from the city which should include a pipeline of investable projects that are economically, socially and environmentally sustainable.<sup>70</sup>

Attracting this sort of investment in growing cities, means a spill-over effect for the inhabitants. Job creation, wealth creation, added resources and more, means that the city directly benefits. Similar attracts similar, and with a city attracting development and investment more businesses and entrepreneurs will follow. The more competitive a city, the more attractive and thus lucrative it becomes as can be seen through examples in box 10.

#### Box 10 – The innovative power of city clusters

Canada's city of Toronto offers an example of a supply chain of innovation delivery. In the past five years, the city has emerged as a global center for start-up creation.<sup>71</sup> Matching entrepreneurs and start-ups to the infrastructure, mentorship and finance needed to create booming businesses provides sustainable jobs and contributes to a sustainable economy. To date, a network of innovation hubs, including accelerators and incubators has connected over 30,000 start-ups and gained over 70,000 tech-related jobs.<sup>72</sup>

The Tecnológico de Monterrey System in Mexico is an education institution spread over 33 urban locations. It boasts corporate universities and technology parks, where businesses and universities collaborate on joint projects, especially in the scientific research area of biotechnology and engineering<sup>73</sup>. This has led to the development of a strong entrepreneurial culture among students as well as emerging businesses. The public-private institutes that are part of the Tecnológico de Monterrey System also promote skill-building of workers and enable talent and creativity to circulate around the business ecosystem. The city of Monterrey views it as the leading private institution with

<sup>68</sup> A Kenyan App is Transforming Africa's Plastic Pollution Problem, 2022. <https://www.weforum.org/videos/a-kenyan-app-is-transforming-africa-s-plastic-pollution-problem>

<sup>69</sup> All Africa, Kenyan-Based Recycling Company Disrupting and Exploitative Sector. <https://allafrica.com/view/group/main/main/id/00082532.html>

<sup>70</sup> Increasing private sector investment into sustainable city infrastructure, 2020. <https://www.pwc.com/gx/en/industries/assets/pwc-increasing-private-sector-investment-into-sustainable-city-infrastructure.pdf>

<sup>71</sup> Building a supply chain of innovation, 2021. <https://www.toronto.ca/wp-content/uploads/2021/06/90c1-CityofEntrepreneurs.pdf>

<sup>72</sup> Building a supply chain of innovation, 2021. <https://www.toronto.ca/wp-content/uploads/2021/06/90c1-CityofEntrepreneurs.pdf>

<sup>73</sup> McKinsey Global Institute, Building globally competitive cities: the key to Latin American growth, 2011. [https://www.mckinsey.com/~media/mckinsey/featured%20insights/urbanization/building%20competitive%20cities%20key%20to%20latin%20american%20growth/mgi\\_building\\_competitive\\_cities\\_full\\_report.ashx](https://www.mckinsey.com/~media/mckinsey/featured%20insights/urbanization/building%20competitive%20cities%20key%20to%20latin%20american%20growth/mgi_building_competitive_cities_full_report.ashx)

the capacity to catalyze greater entrepreneurship and innovation to improve the fabric of the city, attract investment and improve lives of the residents.<sup>74</sup>

Metro Cebu in the Philippines is undergoing rapid urbanization with the population expected to grow by 5 million people by 2050. In order to address this in a structured way, the city metro, along with the Metro Cebu Development and Coordinating Board, enlisted the collaboration of the Japan International Cooperation Agency and the City of Yokohama to develop a long-term sustainable urban development vision for the city and engaged the private sector and civil society in joint consultation, policy planning and technical inputs. The continuous urbanization requires the city to become more innovative, creative and thus, competitive. Businesses, both national and international are looking at Metro Cebu as an emerging economic hotspot thanks to its highly-skilled and educated labour force, strong infrastructure and strategic location.<sup>75</sup> The collaboration with the private sector resulted in a city development plan that incorporates urban sustainability, including cultural, economic, social and environmental aspects which informs and empowers 13 local governments on the ground while incorporating stakeholder participation from another country.<sup>76</sup>

Cities as innovation hubs can positively impact special economic zones (SEZs) which, if properly managed, can be a vehicle for economic growth and development. The success of the Tanger Med Zones (TMZ) located south of the city of Tangier, a free-trade zone situated on the Street of Gibraltar can be attributed to a variety of factors. Serving as one of the most important integrated industrial platforms on the continent, it hosts 900 export-based companies thanks to its top-notch infrastructure and services.<sup>77</sup> TMZ services specific industries, most notably automotive, electronics and aerospace. It was developed in collaboration with the private sector to attract qualified labour and grow industrial and logistics activities.<sup>78</sup>

Smaller community-oriented cities can also take up the agent of change role themselves and create innovative and efficient city ecosystems. For instance, Leyden and Zwolle in the Netherlands are emerging as economic hotspots for regional innovation thanks to unique cooperation links between education institutions, private sector and local governments. Collaboration and community spirit is the underpinning element of their success stories. Universities in these cities enjoy a high-level of governmental support and are part of the networked ecosystem alongside businesses. In the case of Zwolle, the healthcare sector received a boost thanks to innovative companies and education institutions teaming up. A similar approach was applied to the upcycling of plastics. Local government-led public programmes such as Leyden's "Knowledge through the districts" further incentivize cross-pollination of ideas to strengthen the city as an emerging innovation district with close ties to science.<sup>79</sup>

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<sup>74</sup> Regeneracion. A vision plan for the distrito tec and the Monterrey campus of the Instituto Tecnológico y De Estudios superiores de Monterrey, 2016. [https://issuu.com/sasaki\\_associates/docs/mtv\\_main\\_report\\_final\\_spreads](https://issuu.com/sasaki_associates/docs/mtv_main_report_final_spreads)

<sup>75</sup> The Roadmap Study for Sustainable Urban Development in Metro Cebu, 2015. <https://openjicareport.jica.go.jp/pdf/12235529.pdf>

<sup>76</sup> Increasing private sector investment into sustainable city infrastructure, 2020. <https://www.pwc.com/gx/en/industries/assets/pwc-increasing-private-sector-investment-into-sustainable-city-infrastructure.pdf>

<sup>77</sup> Tanger Med Zones, The number one integrated industrial platform in Africa and Mediterranean. <https://www.tangermedzones.com/en/tanger-med-zones/>

<sup>78</sup> UN-Habitat and UNCTAD, Special Economic Zones and Urbanization, 2020. [https://unctad.org/system/files/official-document/UNCTAD-UNHabitat\\_discussion\\_paper\\_en.pdf](https://unctad.org/system/files/official-document/UNCTAD-UNHabitat_discussion_paper_en.pdf)

<sup>79</sup> Elsevier Weekblad magazine, 3 December 2021.

## What next

Through inspiring examples of entrepreneurial initiatives taken at urban levels that can be replicated elsewhere, possible ways forward for the creation of smart, connected city economies of the future that are both resilient and sustainable have been presented in this paper.

Due to rapid urbanization, there is an increased pressure on city planning to incorporate solutions to social and environmental challenges and address the needs of citizens, including those of vulnerable communities.

A strong link exists between urbanization and cities operating as economic powerhouses on the one hand and on the other networked business ecosystems that are innovative and optimize the use new technologies to deliver on the Sustainable Development Goals.

Successful ingredients for a synergistic development of urbanization and entrepreneurship are for the public sector to attract entrepreneurs by nurturing talent, making resources available and providing access to infrastructure, data, finance, information and a market, the recognition of urbanpreneurs as partners in solving city problems and the creation of a collaborative multistakeholders' city ecosystem in the design of the future of urbanization.



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