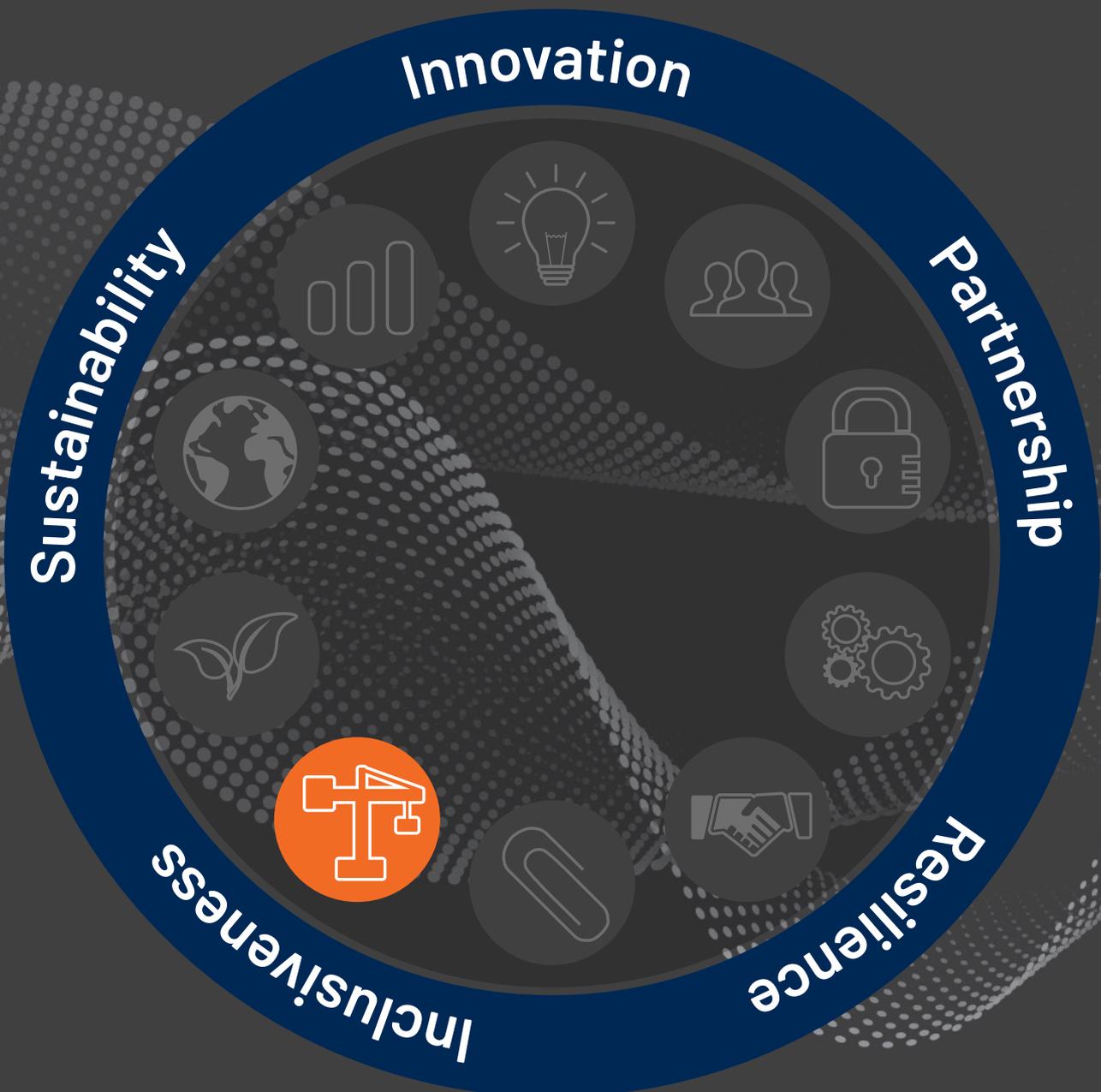


Frame the Future Local Development



Local Development

Introduction

Cities are where talent and resources are concentrated, and investing in local development provides citizens with services and businesses, infrastructure, connections, and knowledge essential for innovation. This is the reason why cities are responsible for 80 percent of the global economic output. At the same time, cities are responsible for 65 percent of the production of solid waste, 65 percent of energy consumption, 70 percent of carbon emissions, and 75 percent of the use of natural resources.

As society moves forward, cities will need to dissociate their growth from energy consumption, regulate their emissions, and use the available resources discerningly in the years to come. Innovation can drive these changes and guide cities to reduce their footprints and create positive economic and environmental impacts. These challenges can drive entrepreneurs into new opportunities for growth, investment, and local innovation systems.

Cities have traditionally been places where innovation, people, and money come together, but the COVID-19 pandemic has caused uncertainty. COVID-19 has ushered in a time of remote work, giving workers the flexibility to relocate away from centralized urban business districts. This trend raises the question: Will there be a move away from relying on city centers as hubs for culture, jobs, and innovation?

Elements for Regional Development

The backbone of local development rests on the available infrastructure, talent, investment, regulation, and communication. These are central components of a thriving city or region, and without a strong presence of all five, a region's local development can be slowed.

Infrastructure enables trade, powers businesses, connects workers to their jobs, creates opportunities for struggling communities, and protects regions from an increasingly unpredictable natural environment. With the concentration of globalization happening in cities, but a shift of people living outside of city centers, infrastructure will need to grow and adapt as populations move. Investment in infrastructure locally has a high correlation to economic development and therefore local development. Local resource-based infrastructure generates income that remains within the locality and can create long-term effects. Infrastructure projects also create jobs for all low-skilled, mid-skilled, and high-skilled workers.

Cities are a place where companies find a variety of skilled workers, and people move to cities because of the many social opportunities, amenities, and well-paying jobs that urban life offers. Cities act as an accelerator for innovation and ingenuity, as most of society's brightest minds congregate in such locations.¹ Local governments' and businesses' success hinges on talent development, attraction, and retention – if a region does not focus on creating a high quality of life and investing in local development, people will not be inclined to stay. Local and regional economic growth requires investment in talent development and retention. Possessing a well-trained workforce is a condition for investment attraction and growth.

Developing infrastructure, creating jobs, and promoting startups cannot happen without investment in a region. Capital investments need to reach all areas of a region, including city outskirts and nearby rural areas. Investments provide community wealth building by providing capital to local businesses, preserving local jobs, supporting local suppliers and providers, and helping attract other investors to the area. Community investment includes, but is not limited to, transportation infrastructure, electricity and telecommunications, and education investment. When these areas are well invested in and taken

¹ https://www.wipo.int/wipo_magazine/en/2019/06/article_0001.html.

good care of, it attracts more people, more business, and more development from different industries and different areas.

The government and other authorities can help cities become innovation hotspots and enhance economic development by providing support through regulations and policies that promote economic and innovation growth. Across the globe, city, county and state governments provide incentives and support to companies and entrepreneurs. Even in Singapore, the well-known and highly competitive city-state, the government provides support in the form of subsidies to encourage entrepreneurs to expand their businesses. The Productivity and Innovation Credit (PIC) allows businesses to benefit from tax deductions or cash incentives for investments in innovation and productivity improvements.²

For all elements of local development to function, there needs to be communication between industries, different government agencies, the government and citizens, and the government and the private sector. When there is less friction between different industries and government agencies, society can smoothly address changes. Communication holds a community together and helps educate everyone in society on developing changes, and any economic or social development projects need to be effectively communicated to have any impact. It is a tool to bring together people, ideas, activities, and products by sharing information for all interested parties; all members of the community must be active participants and feel involved with a wide range of community activities and developments.

Cities and Regions as Innovation Hotspots

Advancements in technology have now created a world that is continuously changing to be more highly connected and digital. In a hyperconnected world, physical location still matters to entrepreneurs, investors, and talent.³ Some cities are capitalizing on this and positioning themselves as globally-connected innovation hotspots. To do that, multiple organizations and entities – such as academic institutions, major companies, startups, investors, industry leaders, and government offices – must collaborate and, in many cases, implement flagship innovation districts and hubs that serve as focal points for the local innovation community and global partners.⁴

Innovation hotspots serve many purposes to different entities.⁵ Startups benefit from establishing their headquarters in an innovation hotspot through the availability of talent from academic institutions, various government support programs, and an existing ecosystem that helps new businesses to grow. Major companies in an innovation hotspot can boost their networking and relationship building with other organizations. Academic institutions are then able to attract the talent that will contribute to these startups and major companies. The city itself can spark further local economic growth, as well as diversification.

A prime example of a region as an innovation hotspot is Silicon Valley, the home to dozens of major technology companies. New York, Barcelona, London, Paris, Toronto, Tel-Aviv, and Berlin are also widely recognized to be innovation powerhouses.⁶ San Diego provides a great example of how a city and a region were transformed via investments in science, technology, and innovation, and a purposeful effort to create the local innovation ecosystem. But shifts in the world scenario are giving rise to a new innovation geography, with the emergence of cities such as Shanghai, Shenzhen and others in China; Sao Paulo (Brazil); Santiago (Chile); Seoul and Incheon (Korea); Kuala Lumpur (Malaysia); Dubai and Abu Dhabi (UAE); Mumbai and Bangalore (India); and Nairobi (Kenya) as global innovation hotspots.

Investments in the development of innovation ecosystems benefit both developed and developing countries. Almost twice as many global company leaders believe that hotspots are still important in driving technology innovation.⁷ This is because these emerging hotspots act as incubators for new ideas and collaboration, resulting in innovation and ultimately, local development.

Factors that are needed for a city or region to emerge as an innovation hotspot include producing specialist talent, a concentration of financial resources and investment, good communications and physical infrastructure, and public policies that promote local innovation and entrepreneurship.⁸

In a survey of more than 800 global leaders in the technology industry that evaluated what factors are necessary for the long-term viability of an innovation hotspot, 44 percent said an urban locale that attracts young professionals, 34 percent said a pipeline of skilled talent, 31 percent said a modern infrastructure including high-speed bandwidth, and 26 percent said the city needed to have at least one research-intensive university for the best chances of sustained success.⁹

2 <https://www.weforum.org/agenda/2018/02/5-hotspots-for-tech-innovation-outside-of-the-us/>.

3 <https://www.weforum.org/agenda/2018/02/5-hotspots-for-tech-innovation-outside-of-the-us/>.

4 <https://www.seedsprint.com/culture-collaboration-and-the-rise-of-technology-innovation-districts/>.

5 Ibid.

6 <https://innovationmatters.economist.com/pdf/tomorrowsinnovationhotspots.pdf>.

7 <https://www.kpmg.us/content/dam/global/pdfs/2021/tech-innovation-hubs-2021.pdf>.

8 <https://innovationmatters.economist.com/pdf/tomorrowsinnovationhotspots.pdf>.

9 <https://www.kpmg.us/content/dam/global/pdfs/2021/tech-innovation-hubs-2021.pdf>.

Industries of the Future

Technology areas such as artificial intelligence (AI), advanced manufacturing, robotics, biosciences, advanced materials, quantum, energy generation and storage, food science, and semiconductors are among those poised to grow and drive industry change in the years and decades to come. These are areas that can create opportunities for multi-sector innovation hubs across the world and play a large role in local development through their ability to transform economies.

Cities that already are or are becoming innovation hotspots identify biotech as a key area for advancing society and the betterment of human life. Biotech is a rapidly growing sector of the global economy, with biotechnology jobs increasing 28 percent¹⁰ during the last decade, and the global market value is expected to reach \$2.44 trillion by 2028.¹¹

Information and communications technology (ICT) serves as the backbone of modern living and modern technology and has seen exponential growth in the last decade. The ICT industry is a leading source of new jobs and economic growth. In New York City, the ICT sector has increased jobs faster than other sectors; in Bangkok, 3,000 direct jobs a year are being added to the ICT community; and in Barcelona, ICT is recognized as a key industry accounting for about a third of all companies.¹²

The medical science industry plays an active role in society by trying to improve lives through the prevention and treatment of diseases and other health issues. Major advances in the industry include targeted therapies for cancer, advancements in combination drug therapy for HIV survival, minimally invasive and robotic techniques for surgery, and many more. Among others, the Singaporean government has been an active investor in medical sciences, spending around \$6 billion between 2000 and 2005, including the formation of Biopolis, a biomedical research and development hub.¹³ Medical science plays a key role in innovation hotspots due to its mission to generate advancements in human health and its ability to collaborate closely with other fields like ICT and biotech.

Nanotechnology allows for the creation of advanced materials that have unique properties, such as optical, electronic, mechanical, and magnetic properties, with applications across several areas, including information technology, medicine, transportation, energy, and environmental science. Singapore, Daejeon, and Lyon are three cities that lead research on nanotechnology and are positioning themselves as global innovation hubs in the field.

The global pharmaceutical manufacturing market size was valued at \$405.52 billion in 2020 and is expected to grow at a compound annual growth rate (CAGR) of 11.34 percent from 2021 to 2028.¹⁴ The pharmaceutical industry has gone through modernization as it adopts and utilizes technologies such as artificial intelligence (AI), additive manufacturing, blockchain, and other Industry 4.0 technologies.

The examples above illustrate how different cities and regions have focused on emergent industries and technologies to build their global profiles. With the impacts of climate change and environmental damage becoming more pronounced, many cities have shifted investments to sustainable technologies, such as renewable energy production and storage, carbon-free urban mobility, and local food production. These new areas have driven innovation and created new economic opportunities for businesses and local populations. Sustainable industries can be a win-win asset, providing future economic growth, improved quality of living, and resilient systems at the local and regional levels. The success of these initiatives will depend on managing local stakeholders and advancing plans to build new capabilities, workforce, and infrastructures.

¹⁰ <https://seedscientific.com/biotechnology-statistics/>.

¹¹ <https://www.grandviewresearch.com/press-release/global-biotechnology-market>.

¹² <https://documents1.worldbank.org/curated/en/623971467998460024/pdf/100899-REVISED-WP-PUBLIC-Box393259B-Tech-Innovation-Ecosystems.pdf>.

¹³ <https://destinationinnovation.economist.com/part-3/>.

¹⁴ <https://www.grandviewresearch.com/industry-analysis/pharmaceutical-manufacturing-market>.

Trends

- Cities and regions are gaining more political and economic importance over national states.
- New innovation hotspots are emerging everywhere across the world.
- There is an increased focus on solving urban and peri-urban problems to drive innovation and entrepreneurship.
- Urban Agriculture, also known as Urban Food Production, is gaining more attention.
- There is growing recognition around nurturing local innovation ecosystems and connecting these ecosystems globally.
- Advancements in clean technology are gaining attention as a vehicle to display innovation in local development.
- It is increasingly common for innovation hubs that combine shared infrastructure to develop connections between different companies and industries.
- Local development is increasingly involving partnerships between universities, industries, and the government.

Issues

- To develop the local workforce, a focus on the future needs of specific skills has to be taken into account.
- Attracting world-class talent is vital for a city to emerge as an innovation hotspot.
- There is a need to position cities in the global innovation landscape, particularly for newcomers.
- All relevant local stakeholders need to have a uniform agreement about future visions.
- There is a lack of infrastructure, capital, and world-class talent at scale in emerging nations.
- Complex regulations result in the obstruction of public-private collaboration, as well as increased costs for industries and entrepreneurs.

This material was prepared by Rylie Pope and Karina Shafira.

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900 17th Street, NW, Suite 700, Washington, D.C. 20006

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