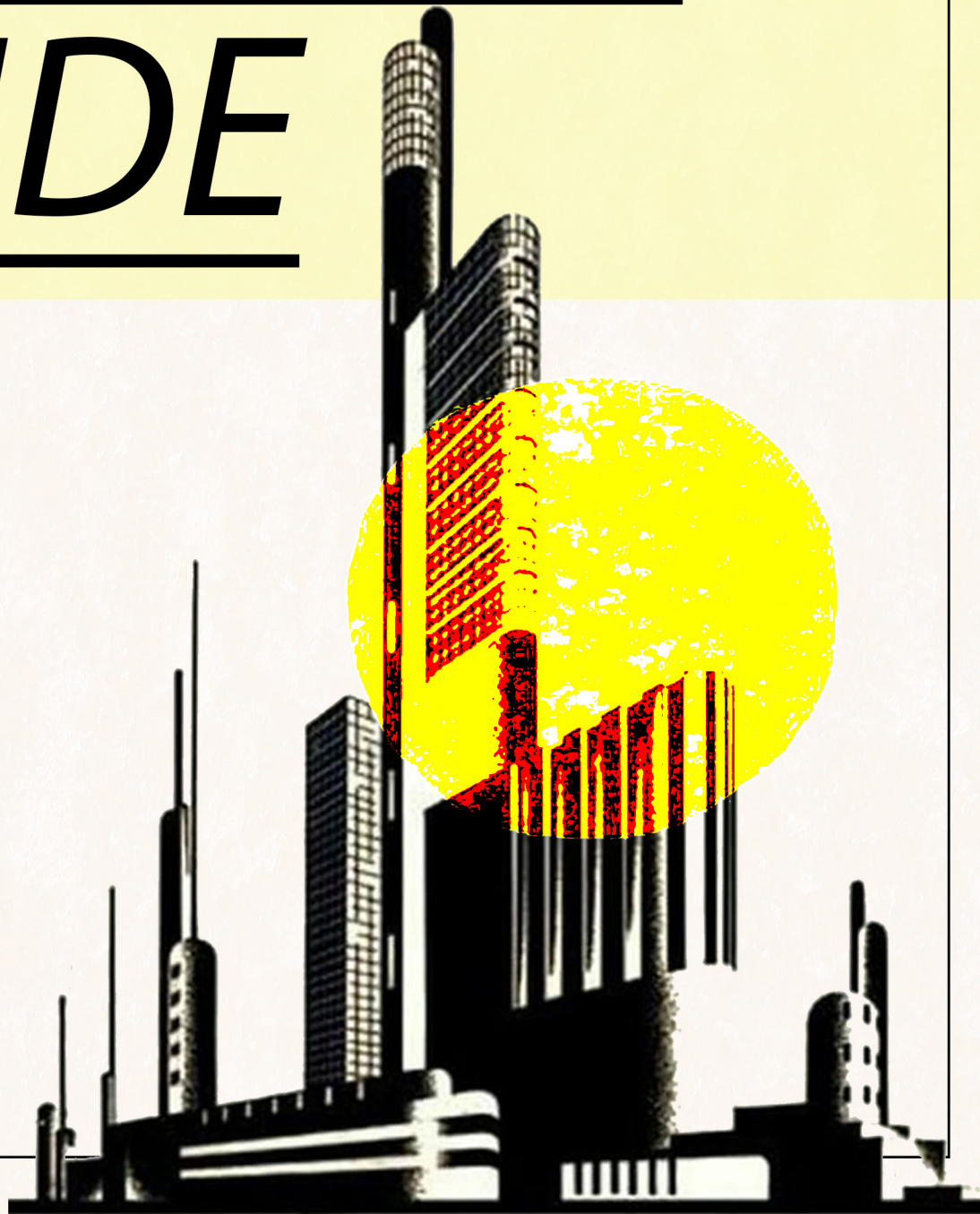


INDUSTRIAL STRATEGY GUIDE





The Future of Development

Empowering new cities with better governance to lift tens of millions of people out of poverty.

The Charter Cities Institute is a non-profit organization dedicated to building the ecosystem for charter cities by:

- Creating legal, regulatory, and planning frameworks;
- Advising and convening key stakeholders including governments, new city developers, and multilateral institutions;
- Influencing the global agenda through research, engagement, and partnerships.

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EXECUTIVE SUMMARY

The goal of charter cities is to generate inclusive and sustained economic growth. To support this growth, a strategy to guide a city's industrialization is needed. While most charter cities will begin at relatively low-income levels, over time incomes will grow as skills transfer, productivity improves, and investments are made. A charter city must plan its industrial development so that it can attract and sustain a sufficient economic base to bolster its long-run economic growth.

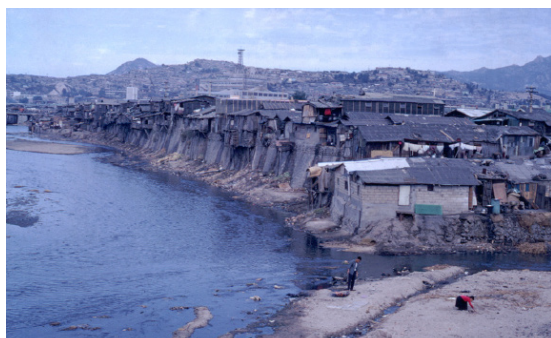
To initiate a diversified industrial strategy, a charter city will typically begin with anchor tenants for each industry it decides to develop based on the city's level of economic development and potential for economic linkages. Anchor tenants are also the first large employers in the city that can help attract the critical mass of residents necessary to justify additional amenities, schools, restaurants, grocery stores, and other ancillary activities. Industry-specific anchor tenants are crucial for the long-run success of a charter city. The workers anchor tenants attract form the labor market of the city, and the supply chains they depend upon become the industrial base and job creators for the city. Attracting anchor tenants in the right industries can plant the seed for future economic success.

A charter city's industrial strategy should evolve with its growth and should be aimed to foster integration and linkages with other businesses both within the local region and across the globe. Sustained economic growth will be more easily attained if (i) the charter city's firms establish themselves within global value chains, and (ii) if the same firms exploit dynamic knowledge transfers and opportunities for "learning by doing" embedded in global trade. Doing so will allow firms and industries to move up these value chains to take on higher value-added activities.

This guide gives an overview of what an industrial strategy is and why it matters. It also briefly explores four industry options to foster a city's economic growth, the evolution of an industrial strategy and its limitations.

INTRODUCTION TO INDUSTRIAL STRATEGY AND CHARTER CITIES

The practice of industrial strategy can be traced back as far as medieval-era Italian city-states and late medieval England. It gradually became prominent in development research and policy analysis after the end of the Second World War.¹ Historically, advanced economies such as the US and UK have implemented industrial strategies to supplement their economic development, although these efforts have not been explicitly advertised in mainstream literature. For instance, the post-war UK focused its efforts on building its maritime industry cluster by training workers and providing fiscal and financial assistance until the 1980s.² The US has been subsuming industrial strategy initiatives under its energy or defense policies. For instance, since 2009, the US Department of Energy has been running a profitable program to offer low-interest loans to encourage the development of alternative and efficient energy solutions.³ Today, however, almost all advanced economies are explicitly announcing their industrial strategies with a focus on pivoting to the “Fourth Industrial Revolution” and battling the challenges of climate change. Developing and executing industrial strategies is also increasingly being encouraged by the international community in low and middle-income countries in Africa and Asia.



The Cheonggyecheon area of Seoul has undergone significant transformation over the past 70 years, from postwar slum in the 1950s and 60s, to urban highway in the 1970s, and finally to public recreation space in the 21st century.

The remarkable economic performances of the “East Asian Tigers” such as South Korea, Taiwan, and Singapore in the post-war era are widely known cases of effective implementation of an industrial strategy. These countries managed to optimize their land, labor, and capital to generate sustained economic growth by adopting a guided strategy for industrialization. Each utilized their geographical location, human capital, technocratic governance, and natural resources to boost their economic development. For instance, after its separation from Malaysia in 1965, resource-constrained Singapore took advantage of its central location along the East-West trade route by developing its maritime and logistics industries. South Korea in the 1960s and 1970s introduced tax reforms and generous export financing schemes for strategic industries such as steel, petrochemical processing, and shipbuilding to promote exports, create forward and backward linkages, and contribute to economic growth and foreign exchange earnings.⁴ Both of these countries today bear the fruits of their path dependence created decades ago.

¹ The Oxford Handbook of Industrial Policy. (2020). Oxford University Press.

² Gardner, B.M., Pettit, S.J., Thanopoulou, H.A. (1996). Shifting challenges for British maritime policy. *Marine Policy*, Vol. 20, No. 6, pp. 517-524.

³ The Oxford Handbook of Industrial Policy. (2020). Oxford University Press.

⁴ Mah, J.S. (2007). Industrial Policy and Economic Development: Korea's Experience. *Journal of Economic Issues*, Vol. 41, No. 1, pp. 77-92.

An industrial strategy is a range of implicit and explicit policy actions to develop the productive and technological capabilities of domestic industries, including selective interventions to encourage the dynamic efficiency of industrial activity over time.⁵ In other words, it involves actively shaping industrial clusters through attracting context-relevant industries, honing industry-relevant talent, grooming ecosystem-supporting industries, and adopting business-friendly policies. A successful strategy relies on strong institutions and high-quality infrastructure, and constantly evolves in tandem with the dynamism of industrial sectors.

CHARTER CITIES⁶

Charter cities—new cities with new rules—are one of the best tools to ensure urbanization brings about rapid and sustained economic development. Governance is a key determinant of economic performance. By improving governance through deep regulatory and administrative reforms, charter cities can create a competitive business environment that enables the entrepreneurship and investment needed to spur sustained economic growth.

Building a new city on greenfield land allows charter cities to establish a streamlined and high-capacity administration largely autonomous from the pre-existing political institutions of the host country. Such high capacity will in turn allow the charter city administration to provide both the rule of law and the public goods necessary to support well-functioning markets—differentiating it from the low state capacity that pervades the Global South. Through this blank slate approach to governance reform, charter cities can overcome the political barriers that commonly stifle reform efforts in pre-existing jurisdictions.

This Industrial Strategy Guide is a component piece of a larger set of Reference Guides created by the Charter Cities Institute (CCI) for use by charter city developers and administrators. CCI's Reference Guides – which also include the Governance Handbook, Planning Guidelines, and Model Laws, among other publications – have been created to establish an initial set of best practices for charter cities to kick-start their development and facilitate their economic growth. The Industrial Strategy Guide is best utilized in coordination with these other Reference Guides, as land-use planning, regulatory, and other administrative decisions will all have implications for a charter city's industrial strategy.

⁵ Chang, Ha-Joon. (1994). *The Political Economy of Industrial Policy*. London: Macmillan.

⁶ Mason, J. & Lutter, M. (2020, June 22). Introduction to Charter Cities. Retrieved July 10, 2020, from <https://www.chartercitiesinstitute.org/post/introduction-to-charter-cities>.

ADOPTING AN INDUSTRIAL STRATEGY



Garment workers at a factory in Gazipur, Bangladesh.

An industrial strategy is a mission-oriented approach ⁷ to coordinating economic policy in terms of market information, factor inputs and basic infrastructure to support the growth of industrial sectors.⁸ It helps align the charter city's industrial focus with the state and/or nation's political economy to benefit the region's economic development. For instance, since 1974, the ready-made garment industry in Bangladesh has been aligned with the regional and national-level objectives of driving the country's employment and economic growth.⁹ To ensure its success, it received both regional- and national-level support in terms of financing, bonded warehousing services¹⁰, reduced taxes and import quotas.¹¹ As the industry now accounts for about 84% of the country's exports and plays a key role in its economic development, it will remain a key focus of Bangladesh's industrial strategy and continue to receive policy support.¹²

The case for adopting an industrial strategy is also created by the economic benefits of agglomeration. The geographic concentration of firms that belong to the same industry and that complement each other's value chains generates positive externalities, including economies of specialization, scale, and network effects. By being co-located, firms gain access to common suppliers, shared physical infrastructure, reduction in transportation costs, access to specialized talent, and knowledge spillovers. These in turn contribute to increased productivity and economic growth. An industrial strategy is designed to set the economic policy direction to spur agglomeration within industries.

⁷ Refer to the work on mission-oriented innovation by the UCL Institute for Innovation and Public Purpose

⁸ The Oxford Handbook of Industrial Policy. (2020). Oxford University Press.

⁹ Islam, M.S. (2020). Ready-made garments exports earning and its contribution to economic growth in Bangladesh. GeoJournal.

¹⁰ Like a standard warehouse, bonded warehouses let businesses store their imported goods or goods for exporting with the advantage of pushing out the payment of custom duties until the goods are released from the bonded warehouse. They are often built and managed by governments to ease cash flow constraints of businesses.

¹¹ Khanna, P. (2011). Making Labour Voices Heard During an Industrial Crisis: Workers' struggles in the Bangladesh garment industry. Labour, Capital and Society, Vol. 44, No. 2, pp. 106-129.

¹² Berg, A., Chhaparia, H., Hedrich, S., & Magnus, K. (2021, March 21). What's next for Bangladesh's garment industry, after a decade of growth? McKinsey & Company.

The goal of an industrial strategy is to promote the charter city's economic development. It achieves its objective by attracting and nurturing industries, providing employment opportunities, and creating the potential for skills upgrading and knowledge transfers. It focuses on industrial sectors which create the most jobs, establish forward and backward linkages with regional and global suppliers and buyers, and possess the potential to organically evolve from low value-added to high value-added manufactures over time.

For instance, Singapore's manufacturing share of GDP rose from under 15% in the early 1960s to over 25% in the 2000s.¹³ The country's industrial strategy for manufacturing in the 1960s focused on labor-intensive industries like textiles but gradually progressed to higher value-add capital- and technology-intensive industries such as semiconductors and electronics. Concurrently, to complement its evolving manufacturing sector and diversify its economy, sectors like financial services, IT services, and legal services were developed.

A lack of natural resources also forced Singapore to focus on human capital development since the 1960s. To provide an employable workforce, Singapore revamped its educational system in its initial years to emphasize technical and vocational education. It established specialized industrial training institutes to train qualified technicians and craftsmen, and made English the language of instruction in schools and universities.¹⁴ English was also made the common language of government and business, facilitating the operations of foreign multinationals in Singapore and linking Singapore effectively with the global economy. Adopting a manufacturing- and trade-led approach to industrialization complemented by services allowed the country's real GDP per capita to grow from about \$4,000 in 1965 to about \$59,000 today.¹⁵



Singapore in 1972 and Singapore today.

¹³ Chia, S.Y. (2005). The Singapore Model of Industrial Policy: Past Evolution and Current Thinking. Singapore Institute of International Affairs. LAEBA 2005, Second Annual Meeting, Latin America & Asia: Strategic Policies for Global Competition.

¹⁴ The World Bank. (2021). GDP per capita (constant 2010 US\$) – Singapore.

¹⁵ Arraiz et al. (2011). Impact of the Chilean Supplier Development Program on the performance of SME and their large firm customers. Working paper: OVE/WP-04/11. Inter-American Development Bank.

IMPLEMENTING AN INDUSTRIAL STRATEGY

Planning and implementing an industrial strategy for a charter city requires coordination among industry participants, policy experts, and charter city administrators. As coordinators, city administrators need to maintain a balance between nurturing local talent and industries and encouraging foreign industrial investments. This is to encourage knowledge transfer and promote complementarity between the capabilities and value-chains of firms. A diversified strategy should be created by attracting and grooming a mix of industries that will be suitable to the city's level of development and evolve in tandem with its economic growth trajectory. The strategy should be aligned with national and state-level economic objectives.

There are, however, common obstacles that foreign investors and local entrepreneurs face. These include (i) compliance requirements, (ii) quality of infrastructure in the city, (iii) identifying local or regional suppliers that meet requisite quality standards to support their value-chain, and (iv) availability of skilled workers. To address these barriers, countries set up one-stop agencies that coordinate foreign industrial investments, promote local entrepreneurship, facilitate local compliance, provide basic infrastructure, and ensure quality standards. These agencies also play an instrumental role in charting the city's economic future by catalyzing industry-specific job training so that local talent and firms are equipped with the know-how to meet the job requirements and quality standards of foreign investors.¹⁶

For instance, Singapore's Economic Development Board was created in 1961 with the sole intent of planning and implementing Singapore's industrial strategy. It served as a one-stop agency for investors to meet their infrastructure and compliance requirements. It comprised of enthusiastic, educated English-speaking public officers and industry experts determined to attract global foreign direct investments into the country. They proactively pitched the idea of investing in Singapore to multinationals across the world by guaranteeing stable governance, basic infrastructure, and industry-specific talent. Even today, the Economic Development Board has several missions across the world and continues to play the role of leading the city-state's economic development journey into the future.

Similarly, the charter city administrator should create an economic development department to oversee the charter city's industrialization. As ensuring high-quality infrastructure and business-friendly compliance requirements are inherent in the design of charter cities, this department, comprising of industry experts and practitioners, should primarily focus on planning the city's industrial future. The implementation should be managed by a separate team of mission-driven and experienced city development professionals who possess the ability to effectively pitch the benefits of the city to investors across the globe.

ANCHOR TENANTS

A key first step to implementing an industrial strategy is to start with anchor tenants for each industry. Anchor tenants serve as a springboard for industrialization by generating the initial spurt of large-scale employment and validating the economic viability of a city. The concept originates from shopping malls. Malls typically offer incentives like lower rent to large retailers like department stores because those retailers drive significant foot traffic to the mall, incentivizing smaller businesses to rent space in the mall.¹⁷ Anchor tenants for a charter city serve a similar purpose. Attracting large firms to the city creates an incentive for small firms and suppliers to co-locate within the city to reduce transportation costs and improve knowledge spillovers, thus creating economic activity through network effects.

CHOOSING ANCHOR TENANTS

Selecting appropriate anchor tenants is key to a charter city's success. The economic development department should select anchor tenants for the city based on an understanding of regional market needs, human capital capabilities, and industry development objectives. To improve attractiveness and chances of success, the economic development department also needs to consider the region's political

¹⁶ Arraiz et al. (2011). Impact of the Chilean Supplier Development Program on the performance of SME and their large firm customers. Working paper: OVE/WP-04/11. Inter-American Development Bank.

¹⁷ Pashigian, B.P., & Gould, E. (1998). Internalizing Externalities: The Pricing of Space in Shopping Malls. *Journal of Law and Economics*, Vol. 41, No.1.

landscape and identify sectors that will have the support of state and/or national-level policy actors. Ideally, anchor tenants should have a ready market for their products and services within the country or region and can compete with established regional players on either high-value or low-cost production. The key considerations for selecting industry-specific anchor tenants include:

- **Scope for Economic Development:** The objective of anchor tenants should be to create many jobs, establish forward and backward linkages with regional and global suppliers and buyers, and possess the potential to organically propel industries from low value-added to high value-added over time. Identifying anchor tenants in sectors such as labor-intensive manufacturing must be considered as they provide employment, knowledge transfers, and potential for moving up the value chain. The growth experience of Shenzhen is a testament to the promise of labor-intensive manufacturing. In Shenzhen, over the span of just 40 years, the population grew from around 100,000 in 1979 to over 12.5 million today. This astonishing growth was underpinned by an initial specialization in low-level, labor-intensive manufacturing. The opportunity for skills upgrading and knowledge transfers implicit in manufacturing is evident in Shenzhen's rapid productivity growth over a short period of time, with residents' disposable income rising 12 times from about \$649 in 1985 to \$7,831 in 2017 (a period of just 32 years).¹⁸



Pre-special economic zone Shenzhen in 1964 compared to Shenzhen in 2015.

- A charter city's economic development department should carefully scrutinize several key economic characteristics when identifying anchor tenants to co-locate within the city. Evaluating the sustainability of an anchor tenant's business plan, the number of workers they intend to hire, the wages of the workers and their economic value-add in terms of future profitability is vital. This is to ensure the economic quality of the firms forming the charter city's industrial ecosystem. The idea is not to 'cherry pick' firms within industries but to proactively pay attention and support those firms that have the greatest potential to propel the city's economic development.
- **Potential for Integration with the Regional Economy & Global Value Chains:** Like charter cities, anchor tenants must not exist in isolation. Integrating anchor tenants with the local region is vital for both business growth and sustained political buy-in. For instance, if anchor tenants are integrated with the region's economy, it is easier for them to get regulatory support from the state or national governments as they are recognized as key economic partners. Linkages to the local region are often required for raw materials serving as production inputs, labor and markets for the sale of finished goods/services. Anchor tenants can also serve as the gateway to trading within global value chains and serving markets outside of the local region. Ghana's Tema Free Trade Zone provides an illustrative example of the positive effect of promoting regional linkages with local suppliers. In 2005, the Ghana Free Zones Board

¹⁸ World Bank (2018). Democratic Republic of Congo Urbanization Review: Productive and Inclusive Cities for an Emerging Democratic Republic of Congo. World Bank Group: Washington, DC.

adopted a cluster-based approach to developing the Tema Zone by providing basic soft and hard infrastructure. The aim was to attract businesses to set up their value chains for exports. Being known for its neighboring cocoa plantations, the zone managed to attract leading agro-processing firms and chocolate manufacturers such as Cargill and Barry Callebaut. These foreign firms then built out this chocolate processing value chain in conjunction with local Ghanaian firms co-located within the zone. Co-production of both foreign and domestic firms not only significantly boosted the region's exports, but also generated significant knowledge transfers and 'learning by exporting' for Ghanaian firms.¹⁹



A Bunge Lodgers Crockaan shea butter processing facility under construction in the Tema Free Trade Zone.

Attracting Foreign Direct Investment (FDI): Anchor tenants should be of a significant size to create buyer-supplier relationships with local firms or foreign firms willing to relocate or expand into the charter city to serve anchor tenants. Successful special economic zones (SEZs) around the world highlight the benefits industrial development-focused FDI can generate. First, the presence of foreign firms allows domestic suppliers to improve their operational efficiency and boost their sales. Second, it encourages local suppliers to meet higher quality standards for export which in turn can indirectly benefit domestic firms downstream which tap on the same suppliers. Third, foreign firms tend to use better management practices and have higher productivity levels than domestic firms which can spur much-needed knowledge, skills, and technology transfers.²⁰

City administrators should adopt a targeted analytical framework for FDI attraction that is aligned with its industrial strategy.²¹ Development investors should proactively prioritize investment in identified high-impact economic sectors to support the city's development through job creation and industrial innovation. Taking a focused approach to FDI attraction to boost the charter city's productivity will be critical for efficient allocation of capital.

¹⁹ Dercon, S. et al. (2019). "Can Africa Learn from the Chinese Urbanizations Story." International Growth Centre: Oxford. <https://www.theigc.org/publication/can-africa-learn-from-the-chinese-urbanisation-story/>.

²⁰ See 'Ed Glaeser & Paul Romer on Rapid Urbanization' here: <https://www.youtube.com/watch?v=nZGdyowVVzw&t=269s>.

²¹ The World Bank. (2021). Population living in slums (% of urban population) - Congo, DEM. REP. Retrieved April 15, 2021, from <https://data.worldbank.org/indicator/EN.POP.SLUM.UR.ZS?locations=CD>

It is also critical that the city creates the requisite infrastructure and business environment that enables anchor tenants to thrive. This is especially important to entice first movers to the city. Some considerations of firms when choosing a city are as follows:

- **Viability of a Market:** Without a ready and consistent off-taker, no business can survive. For instance, Royal Dutch Shell (Shell) set up Singapore's first-ever oil refinery in the 1960s.²² Crude oil was transported in bulk from Europe to Asia and directly refined and stored in tanks to serve the Asian market for the first time in history. Logistical cost savings allowed Shell to reduce the price of kerosene by nearly half, beating its competitors. Similarly, anchor tenants must be able to realize a competitive edge when supplying their product or service from a city. They may choose to target markets within the region that typically offer fewer complex logistics arrangements and shorter trade cycles. Alternatively, they may choose to supply global markets by integrating into the global value chains and benefitting from associated knowledge transfers, skills upgrading, and productivity increases that accompany foreign trade.²³ Ultimately, the decision will depend on the firm's strategy and where they position their operations in the charter city relative to the global context.
- **Low-Cost and Stable Business Environment:** Keeping compliance and business costs as minimal as possible will be critical for anchor tenants to generate the maximal level of economic activity. Low costs do not allude to sub-standard processes but emphasize the need to eliminate unnecessary and inefficient regulatory barriers for firms wherever possible. The city administration must prioritize reducing potential transaction costs by creating laws that improve the business climate and reduce bureaucratic bottlenecks. This will be largely aided by the semi-autonomous nature of charter cities and their ability to shape local commercial laws.²⁴

When making the charter city attractive to regional and global investors, charter city administrators must be cautious to deploy appropriate tactics in curating the business environment. In the case of SEZs, an over-dependence on financial benefits and tax breaks have not proven to have a direct correlation with the success of the zones. This does not imply financial incentives should not be considered. The aim should be to get firms to contribute to the charter city's economic development in return for perks. Not holding firms accountable to development objectives may encourage rent-seeking behavior among the benefiting firms.²⁵ Alternatively, a few other resource-based strategies have been proven to be largely effective in attracting firms to some SEZs. For instance, city developers can choose to sell/lease land to anchor tenants at subsidized rates (like the shopping mall example alluded to above) to lower their capital/rental costs. This is often a small cost to incur for the expected economic benefits derived in the medium to long term.

Additionally, firms consider stability, consistency, and predictability in city development policies before making long-term business investments. Although policies need to be dynamic to keep up with the city's changing socioeconomic landscape, policy reforms need to be made in an incremental manner giving sufficient time for firms to adjust their business strategies.

- **Availability of Talent:** It is costly for anchor tenants to import all their human capital to run their operations in a charter city. They often require a sufficient local labor pool to complement the specialized talent from their home countries. For this to be possible, the industrial strategy needs to proactively include industry-specific training and education as part of its objective to sustain a large enough labor pool to serve the industrial ecosystem. Planning for the charter city's human capital development should be in collaboration with industry players and experts so that the most up-to-date requirements of

²² Shell Singapore (2016). Shell Celebrates 125 Years in Singapore Driving Innovation for a Cleaner Energy Future. Retrieved from: <https://www.shell.com.sg/media/2016-media-releases/shell-celebrates-125-years-in-singapore.html?cv=1>

²³ World Bank. (2020). World Development Report 2020: Trading for Development in the Age of Global Value Chains. World Bank Group: Washington, DC.

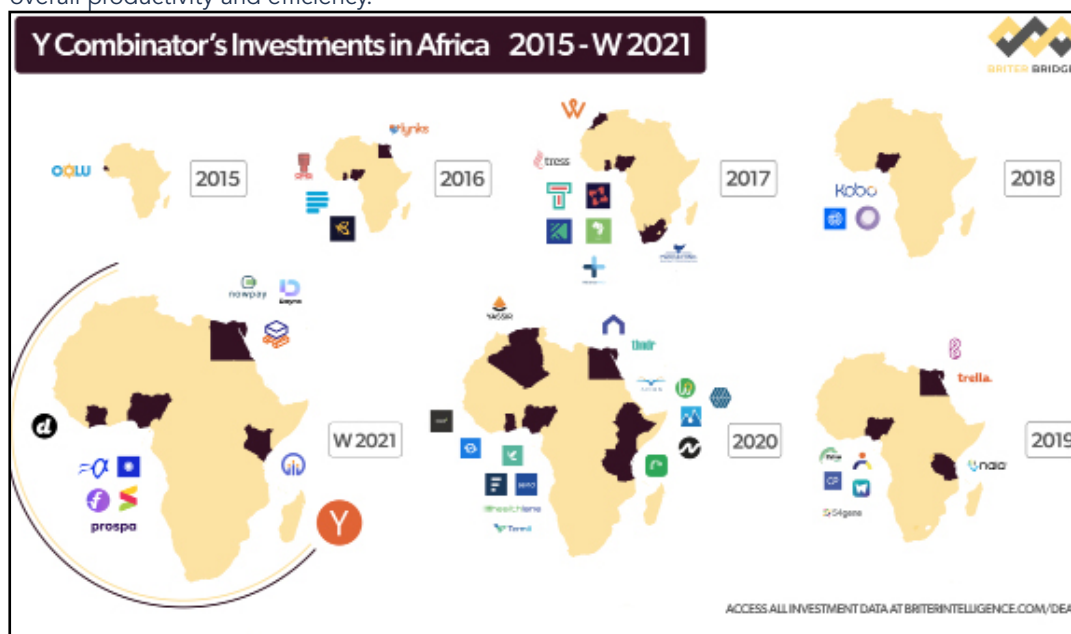
²⁴ Mason, J. & Lutter, M. (2020, June 22). Introduction to Charter Cities. Retrieved July 10, 2020, from <https://www.chartercitiesinstitute.org/post/introduction-to-charter-cities>.

²⁵ Alexianu, M., Saab, S., Teachout, M. & Khandelwal, A. (2019). Doing Special Economic Zones Right: A Policy Framework. International Growth Centre (IGC).

the industries are considered. For instance, in the early years, Singapore partnered with a German multinational called Rollei (specializing in camera manufacturing) to set up a training center to train its local workers in precision engineering and electromechanics.²⁶ The same model is used today in the biomedical and semiconductor industries. Training programs should keep in mind the baseline knowledge and skillsets of the city's workforce and capitalize on them. At the initial stages, the skillsets of the charter city's workforce should match the type of industries being attracted to the city. Gradually, with foreign to local knowledge transfer taking place, a stronger emphasis must be placed on improving the skillsets of workers to attract higher-value industries into the city.

- **Basic Infrastructure:** It is vital to foster collaboration among city administrators, industry, and private organizations to create policies that directly improve productivity, as opposed to attempting to control or distort the market through price controls or tax breaks. Focusing on interventions that promote skilled labor supply, encourage technology adoption, and improve basic infrastructure can significantly improve the productivity of firms and contribute to the success of businesses within the charter city.²⁷

A thriving industrial environment requires high-quality basic infrastructure investments to succeed. Infrastructure investments include building high-speed broadband internet infrastructure, advanced telecommunications capabilities, and, most importantly, reliable power and water. It also includes investments in facilitating the mobility of residents within the city. This can be done through an efficient and reliable bus system and/or pedestrian infrastructure, such as sheltered walkways.²⁸ Quality of basic infrastructure is a prerequisite for firms deciding to relocate or expand their operations overseas. Weak basic infrastructure makes a city less competitive to most industries as it tends to hamper their overall productivity and efficiency.



Investments in African companies from 2015 to 2021 by startup accelerator Y Combinator.

- Improved technological capacity and expanded internet access across the world have created opportunities in the remote work sector. The COVID-19 pandemic has expedited the trend of remote-working. This growth in remote work is underpinned by the wave of new firms that provide remote workers to support clients across the world, such as Andela and Codility, among others.

²⁶ WLee, K. Y. (2000). From Third World to first: The Singapore story, 1965-2000: Singapore and the Asian economic boom. New York: HarperCollins Publishers.

²⁷ Harrison A. & Rodriguez-Clare A. (2010). From Hard to Soft Industrial Policies in Developing Countries.

²⁸ Koh, P.P., & Wong, Y.D. (2013). Comparing pedestrians' needs and behaviors in different land use environments. Journal of Transport and Geography, Vol. 26, pp. 43-50.

Through high-quality infrastructure, the industrial strategy of charter cities can capitalize on this trend by serving as a base for remote workers, especially considering many low- and middle-income countries have frequent power outages which impede the efficiency of remote work. Charter cities can consider adopting a train-and-deploy business model where the city creates the appropriate training and education institutions for workers to learn the skills required to effectively perform remote jobs. Despite the potential for a remote working-led development approach, pursuing this strategy should not be the primary focus of a city as the net value add to the local economy is not as high compared to promoting and nurturing sectors such as manufacturing.

- **Connectivity:** Foreign firms give a significant amount of importance to a city's connectivity when deciding to expand or relocate their operations. Businesses require efficient access to raw materials and shipment of finished goods to regional and global markets. Infrastructure such as high-quality roads connecting to major trading hubs, seaports, and airports is a baseline requirement for most businesses. Besides, if the charter city is located close to a river or sea, then investing in a seaport facility should be strongly considered to facilitate trade and improve the city's economic attractiveness. Often, demand for high-quality connectivity infrastructure by businesses is not only limited to goods but also people. Charter cities should consider investing in an international or domestic airport for both passenger and cargo traffic to boost the city's attractiveness to foreign investments. This will improve mobility of specialized human capital from global markets and foreign firms' home countries, boost firms' overall productivity by reducing travel time, and improve trade connectivity for high-value and perishable goods.

There are additional benefits to large investments in seaport infrastructure. First, these port investments often spur countries into making necessary (and complementary) investments in other weak infrastructure 'choke points' throughout their supply chains, including roads or railways.²⁹ For example, when the Erie Canal was completed in 1825, it connected New York's Hudson River to the Great Lakes in the American interior, vastly reducing the cost of west-east transport, and as a result, several new cities and associated rail and canal networks sprang up ultimately creating a great trading arc from New Orleans to New York City via St. Louis, Chicago, Detroit, Buffalo, and other new Midwestern cities.³⁰ All of these knock-on developments were precipitated merely by connecting New York City's advantageous port with its hinterland. Second, ports and special economic zones³¹ have been shown to be complementary when implemented in tandem, particularly when it comes to stimulating light manufacturing and assembly activities, as well as logistics activities like storage and warehousing.³²



The Doraleh Multipurpose Port in Djibouti, seized by the government of Djibouti from DP World in 2018.

²⁹ Talley, W.K. (2009). *Port Economics*, pp.7-9. Routledge: New York.

³⁰ Glaeser, E. (2011). *Triumph of the City: How Our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier, and Happier*, pp. 43-45. New York: Penguin Press.

³¹ Charter cities can be thought of as the "next generation" of special economic zones. This is due to four main reasons: (i) charter cities are envisioned to be geographically larger in scope (city-scale); (ii) they have mixed industrial/residential/commercial uses (SEZs are typically restricted to one or two industries); (iii) they have devolved authority over many more regulatory domains (SEZs are often just provided tax exemptions and customs waivers); and crucially they have the ability to change their rules and regulations over time as circumstances change (whereas SEZs are required to get approvals from higher tiers of government for any alterations to their regulations).

³² Langen, P.W. (2007). *The Economic Performance of Seaport Regions*, in *Ports, Cities, and the Global Supply Chain*, pp. 202. Ashgate Publishing.

Globalization has created an ever more tightly linked and interconnected world economy. Some nations that have developed a specialization in port construction, operations, and management have begun to look for opportunities abroad to leverage this expertise. For example, using their deep know-how generated from their domestic port successes, several Dubai- and Singapore-based entities³³ have entered into long-term public-private partnerships (PPPs) to build and manage ports and free zones with countries across North and sub-Saharan Africa – including Djibouti, Algeria, Senegal, and Mozambique – and across South and Southeast Asia – including India, Vietnam, and Thailand.³⁴ Not only have these PPPs brought in hundreds of millions in infrastructure investment, lowered transport costs, and boosted trade, but port privatization has also been shown to reduce levels of corruption (another significant barrier to trade across borders).³⁵ Given the above benefits, if a charter city possesses a sufficiently desirable geographic location, then the charter city administration should give serious consideration to potential public-private partnerships with proven port builders and operators like Dubai Ports World or Singapore's PSA International. Such entities could help close large infrastructure gaps for anchor tenants and improve their global connectivity.

INDUSTRY OPTIONS

Lessons from the industrial development of different countries and cities around the world offer a variety of examples to initiate a charter city's economic development journey. Charter cities should choose industries within sectors based on their regional comparative advantage, while also taking into consideration the factors listed in the previous section. This section will focus on four industries that have been significant historical drivers of development in other cities across the globe. While this is not an exhaustive list of industries, it provides a discussion with examples on how these industries can spur economic activity. The industries include:

- Medium- & Large-Scale Manufacturing
- Natural Resource Processing
- Agro-Processing
- Services

MEDIUM- & LARGE-SCALE MANUFACTURING

The manufacturing industry is labor-intensive, employing a relatively large amount of labor for a given output when compared to other industries, and a key upstream segment of increasingly specialized and fragmented global value chains. These attributes make manufacturing a key sector choice for a new city. Additionally, the industry can span across diverse products and can be adapted to the resources and complementary industries located within a specific region. A charter city can choose to hone sub-sectors such as like textiles, electronics, or chemicals manufacturing depending on the city's location and regional context. Positive spillover effects derived from the industry's many forward and backward linkages to various types of sub-sectors and industries allows for the development of an industrial cluster.

Once a manufacturing plant by an anchor tenant has commenced operations within the charter city, it becomes important for the city administrators to groom an industrial ecosystem complementing the anchor tenant. It needs to attract firms that supply key components, provide value-added services or buy the products of anchor tenants. For manufacturing, quality assurance is particularly important to support global value chains because if final products produced by firms in charter cities do not conform to global quality standards, buyers will simply take their business elsewhere to firms that can reliably meet international standards. City administrators can impose high quality standards for manufacturing through policies around export discipline. The city's industrial strategy must intentionally foster the exportation of products to regional and global markets. In the medium- to long-term, it should also seek to attract export-focused businesses which improve the industry's technical efficiency, product quality, and overall

³³ The UAE's most notable port success story is its Jebel Ali Port managed by Dubai Ports World (DPW).

³⁴ Chorin, E. (2010). Articulating a 'Dubai Model' of Development: The Case of Djibouti, pp. 17. Dubai School of Government.

³⁵ Wang, J. & Olivier, D. (2007). Ports, Cities, and Global Supply Chains. Ashgate Publishing.

productivity. Expanding markets through exports spurs specialization, which in turn boosts productivity.³⁶ Exporting firms that consistently prove their ability to meet international quality, health and safety standards gradually develop a credible reputation in overseas markets. These benefits and expectations spillover to firms in the city's industrial cluster supporting the exporting firm's value chain. A combination of these factors helps the export-oriented industrial cluster move up the value chain, become attractive to high-skilled human talent (mainly through higher wages) and accrue the economic benefits of high value-added production over time.



Assembly-line workers at a Ford plant in Chennai, Tamil Nadu.

The Indian state of Tamil Nadu shows how its government focused its manufacturing-driven industrial policy on a few key elements.³⁷ From the 1950s to the 1980s, the government invested heavily in boosting the state's electricity generation capacity, a critical input for manufacturing. These investments attracted foreign automobile manufacturers ranging from the Standard Motor Company in the 1950s to Hyundai and Ford in the 1990s, and domestic business houses such as the TVS Group to operate from the state. The state also invested in basic infrastructure including communications, rail, road and port networks to enhance connectivity between its industrial clusters, hinterland and regional markets. For instance, investments in major ports, such as Chennai, were essential in making the state an attractive location for export industries. Concurrently, the state set up industrial clusters and SEZs to groom specific sectors such as engineering products, IT, footwear and automobiles, and focused on industry-specific education by setting up a variety of industrial training institutes and polytechnic colleges in different regions of the state. Forward-thinking policymaking enabled the state to attract significant FDI which boosted its industrial capacity.

Learning from the SEZ experience of East Asian governments, the government of Ethiopia has also been investing in manufacturing through specialized industrial parks for firms to "plug and play" and export their final goods.³⁸ For instance, the Hawassa Industrial Park is focusing on textiles and apparel, while the Kilinto Industrial Park is specializing in pharmaceutical manufacturing. These industrial parks are equipped with industry-specific physical infrastructure such as pre-built factory sheds to support production needs.

³⁶ Kneller, R., & Pisu, M. (2010). The returns to exporting: evidence from UK firms. *Canadian Journal of Economics*, Vol. 32, No. 2, pp. 494-519.

³⁷ Tony Blair Institute for Global Change. (2020, January 20). Inclusive growth in Tamil Nadu: The role of political leadership and governance.

³⁸ Tony Blair Institute for Global Change. (2020, January 20). Reflecting on the "how" of Ethiopia's industrialization push.

Through high-level commitment by the government's economic development agency, the Hawassa Industrial Park has managed to attract Phillips Van Heusen (PVH), one of the world's largest apparel firms, as an anchor tenant.³⁹ PVH has since pulled manufacturers in its supply chain into Ethiopia along with it. PVH's role as a pioneer in Ethiopia's textiles and apparel sector has generated positive spillover effects by attracting other large textiles and apparel firms to the country.



Garment manufacturing at Hawassa Industrial Park.

NATURAL RESOURCE PROCESSING

There will be charter cities built in countries or regions that have substantial deposits of natural resources. This presents opportunities for the development of processing industrial clusters. Processing firms can make for excellent anchor tenants, as they spur labor- and resource-intensive economic activity. Additionally, processing predominantly requires both low- and semi-skilled labor to operate machinery and perform other general factory functions. This offers potential for skills upgrading of the city's human capital.

Low and middle-income regions have a comparative advantage in terms of low-cost labor (relative to capital) and abundant resources. These comparative advantages give rise to the possibility of developing an industrial cluster around processing. For example, if a charter city in Zambia is in proximity to copper deposits, it should consider setting up copper processing facilities. Upstream activities will involve mining and transportation firms, midstream activities will involve processing firms, and downstream activities will involve logistics, trading, and marketing firms. Building linkages among upstream, midstream, and downstream activities often present large and costly coordination problems. As part of its industrial strategy, the charter city administration should step in to minimize these transaction costs. They can do so by facilitating macro-level coordination, working with stakeholders across the entire value chain to identify and overcome the most pressing barriers and attracting key suppliers and ancillary firms to support the development of the cluster. As the midstream and downstream activities generate the most economic value add, the focus of the industrial strategy should be on developing the midstream and downstream segments of the value chain and promoting exports of finished goods rather than the upstream segment.

³⁹ Tony Blair Institute for Global Change. (2020, January 20). Reflecting on the "how" of Ethiopia's industrialization push.

A natural-resource based industrial strategy for a charter city in the mineral-rich Democratic Republic of Congo (DRC) shows potential.⁴⁰ DRC's minerals such as cobalt, lithium, tungsten, etc. serve as critical inputs for high-tech industries⁴¹ in North America and the EU. Currently, minerals are extracted in the DRC are exported to China and Russia for refining and processing before they eventually reach firms in North America and the EU. A charter city in the DRC could attract Western high-tech industries to build refining and processing facilities in the city which would serve their production lines. Such a strategy would benefit the mining industry of the DRC by drawing in well-financed stakeholders and allowing for technology transfers and knowledge spill overs. It would also provide economic improvement to the lives of the Congolese people while establishing reliable supply chains for firms in North America and the EU.

A key factor that must be taken into consideration is the historical tendency of natural resource firms focused on mining, oil, gas, and other extractive industries to hamper economic growth. This phenomenon, typically referred to as the 'resource curse,' is because these resource firms create huge rents that are often used to bribe or pay off politicians. As such rent-seeking and illicit practices are institutionalized and normalized over time, which results in a downward spiral of increased corruption and poor governance. As such, a charter city administration should select natural resource industries with this caveat in mind and should prioritize processing over pure extraction. A reputable organization working to improve standards and governance amongst these businesses is the Extractive Industries Transparency Initiative (EITI).⁴²

AGRO-PROCESSING

The agro-processing industry adds value to a region's agriculture sector by increasing demand for farmed products, thereby stimulating economic growth and food security. It provides employment in off-farm activities and plays a critical role in transforming and distributing local agricultural and food products to regional and global markets.⁴³ These attributes make agro-processing a potential industry choice for a new charter city. In regions with an abundance of agricultural produce, positive spillover effects derived from the industry's many forward and backward linkages to various types of sub-sectors and industries allows for the development of an industrial cluster.

Ethiopia's export-led industrialization can be traced to the country's Agriculture Development-Led Industrialization (ADLI) strategy, which was developed in the mid-1990s. It aimed to enable Ethiopia to make initial gains in industrialization through exporting both unprocessed and processed agricultural commodities. Sector and policy prioritization, coordination, both across regional governments and between the government and other industrial actors, and a focus in improving capabilities to implement policy were crucial to support the country's industrialization efforts.⁴⁴ Going forward, the government of Ethiopia recognizes that the agro-processing sector will remain a major contributor to its economy and aims to boost exports in agro-processing industrial parks through sustained infrastructural investments. The focus will be on processing commodities such as coffee, sorghum, maize, sesame, horticulture, meat and dairy, and cereals, which make up a majority of Ethiopia's current agricultural exports.⁴⁵ As part of its diversification strategy, the country has also started prioritizing labor-intensive manufacturing industries to complement its agro-processing industry, contribute to job creation, and strengthen the agriculture-industry and the rural-urban linkages.

In 2015, Senegal launched its first integrated agro-pole, and an industrial and mining hub in the Kédougou region. As part of its efforts to promote industry-led economic growth, the government is constructing a large-scale industrial, commercial, and residential park at Diamniadio, 35 km southeast of the capital city, Dakar.⁴⁶ The development of the Diamniadio integrated industrial park is led by a partnership between the

⁴⁰ Peterson, C. (2021). Deconflicting Critical Minerals with Charter Cities. The Charter Cities Institute. Washington, DC.

⁴¹ High-technology industries manufacture high value-added products such as cell phones, computers, batteries used in electric cars, rocket and aircraft engines, and night vision goggles, etc.

⁴² For more details on EITI see <https://eiti.org/>.

⁴³ Food and Agriculture Organization of the United Nations. Agro-Industry Development. Retrieved from: <http://www.fao.org/3/i4281e/i4281e.pdf>.

⁴⁴ Tony Blair Institute for Global Change. (2020, January 20). Reflecting on the "how" of Ethiopia's industrialization push.

⁴⁵ International Trade Administration, USA. (2020). Ethiopia – Country Commercial Guide (Agro-processing). Retrieved from: <https://www.trade.gov/knowledge-product/ethiopia-agroprocessing>.

⁴⁶ Boye, T. (2015, April 20). Senegal Prime Minister officially launches UNIDO's Programme for Country Partnership. UNIDO.

government of Senegal, the United Nations Industrial Development Office (UNIDO), and the government of China. The goal of the agro-pole is to concentrate agro-industrial activities in the Kédougou region, to increase productivity and integrate production, processing and marketing activities.⁴⁷ It will provide support primarily to three high-potential value chains: fruits, vegetables, and cashew nuts; aquaculture and fisheries; and livestock.⁴⁸ It will provide appropriate infrastructure, technologies, and services to strengthen clustering, subcontracting, and upgrading activities of local SMEs to enhance their value-add of agricultural produce. UNIDO-supported and government-led cluster development programs to help local SMEs access market opportunities through joint facilities and services and partnerships with larger firms will also be provided. Training programs on modern agricultural practices will be offered to residents to find jobs or start their own businesses.⁴⁹



The C&H Garments Senegal factory in the Diamniadio industrial park

SERVICES

A charter city may also consider focusing on a service sector-led industrial policy to boost its economic growth. The island nation of Mauritius was able to capitalize on revenues from sugar and textile exports in the 1970-80s to facilitate service sector-led development.⁵⁰ By the 2000s, tourism and financial services became the dominant feature of the economy, contributing nearly 70% of Mauritius' GDP. Public sector efforts to expand tourism through fiscal spending and human capital development initiatives were complemented by the promotional activities of hotels and the national carrier, Air Mauritius.⁵¹ As part of its diversification strategy within the services sector, the Mauritius government also encouraged the development of financial services, business process outsourcing (BPO) and IT industries. Mauritius benefited from pragmatic macroeconomic management that was supportive of long-term growth aspirations. The revenue generated from sugar and textile exports in the 1970-80s was used to finance capital accumulation and implementing sector-specific policies rather than consumption. The real exchange rate was kept competitive, fiscal discipline was maintained, debt burdens were manageable, and there was political will keep a check on the economic imbalances when needed.

It is important to keep in mind that 'modern' services sectors may result in the creation of relatively few high-skilled jobs and even fewer low-skilled ones.⁵² Typically, in the context of manufacturing industry, more low-skilled jobs are created compared to high-skilled ones. A service-led strategy requires more attention to constantly upskilling labor to meet global standards and may lack the potential for creating domestic economic linkages to ensure economic sustainability.

⁴⁷ Tyrou, E., Soullier, G., & Ribier, V. (2019). How Do I Build My Agricultural Growth Pole? A Review of Policies in Three West African Countries. Presented at the 170th Seminar of the European Association of Agricultural Economists, Montpellier, France.

⁴⁸ UNIDO. (2021). Programme for Country Partnership: Senegal. Retrieved from: <https://www.unido.org/programme-country-partnership/senegal>.

⁴⁹ UNIDO. (2017). UNIDO Programme for Country Partnership for Senegal. Retrieved from: <https://sustainabledevelopment.un.org/partnership/?p=10889>.

⁵⁰ Zafar, A. (2006). Mauritius: An Economic Success Story. World Bank Documents.

⁵¹ Zafar, A. (2006). Mauritius: An Economic Success Story. World Bank Documents.

⁵² Behuria, P., Goodfellow, T. (2019). Leapfrogging Manufacturing? Rwanda's Attempt to Build a Services-Led 'Developmental State'. European Journal of Development Research, Vol. 31, pp. 581-603.

Learning from Rwanda, its industrial strategy between 1994 to 2015 focused on services-led developmental with a primary focus on growing tourism, MICE (meetings, incentives, conferencing, and exhibitions) and FIRE (financial services, insurance services and real estate services) sectors. The share of services contributing to GDP increased from 29% in 1994 to over 47% in 2015, while the share of manufacturing reduced from 21% to 14% in the same period.⁵³ The country prioritized building links with the global finance and international business community to achieve growth.

The Rwandan government realized that one of the key difficulties in pursuing a services-led industrial strategy has been keeping up with the increasingly globalized standards and processes of international service sectors. The dynamism of standards and processes in the MICE and FIRE industries have left little scope for local Rwandans to acquire the skills necessary for quality employment in those sectors. Government-led training initiatives for locals have also been unable to keep up.⁵⁴ Even where there is substantial job creation resulting from investments in these sectors, many jobs are not filled by Rwandans. Aware of the shortcomings, the government is now pivoting its industrial strategy to build a balance between services and manufacturing. To achieve sustained industrial growth, the country has started diversifying into textile manufacturing and is even considering looking into the horticulture industry while addressing its binding constraints for export-led growth.⁵⁵ The country has significantly improved in the Doing Business rankings over the past decade. However, there is still room to address binding constraints such as the transport costs, barriers to entry or lack of affordable finance that hamper sectors with the potential to drive export and job growth.⁵⁶

COMPLEMENTARY ECONOMIC POLICIES

To complement its industrial strategy, charter cities should also create economic policies that improve the city's attractiveness and support the growth of industrial clusters. These may include time-limited tax incentives, reducing the number and cost of trade licenses and permits required, co-financing or direct credit for projects, improving access to foreign exchanges, creating business incubation programs, improving quality assurance, and others. These policies can be applied to any industrial cluster and must be part of the economic planning department's tool kit to negotiate when attracting investments into the city and growing existing industrial clusters.

Time-limited tax incentives are a policy instrument meant to attract anchor tenants and/or key supporting firms to grow the industrial cluster. They are typically granted in the form of corporate tax holidays for a period of 2-3 years while firms set up their operations in a city. The time and degree of tax incentive should be decided on a case-by-case basis and should be conditional on the value of investments a firm intends to make to develop its operations in the charter city. It can also be designed based on a firm's economic value-add potential in terms of its forecasted profitability and job creation. This instrument should be used tactfully to boost the city's attractiveness while protecting its revenue interest. Excessive use of this instrument can set a wrong precedence in the market as it may encourage all firms to demand these benefits without adequately contributing in return to the city's economic development.

⁵³ Behuria, P., Goodfellow, T. (2019). Leapfrogging Manufacturing? Rwanda's Attempt to Build a Services-Led 'Developmental State'. *European Journal of Development Research*, Vol. 31, pp. 581-603.

⁵⁴ Behuria, P., Goodfellow, T. (2019). Leapfrogging Manufacturing? Rwanda's Attempt to Build a Services-Led 'Developmental State'. *European Journal of Development Research*, Vol. 31, pp. 581-603.

⁵⁵ Shepherd, B., Twum, A. (2018, November). Review of industrial policy in Rwanda. Reference No. F-38426-RWA-1. International Growth Centre.

⁵⁶ Redifer, L., et.al. (2020). The Development Path Less Traveled: The experience of Rwanda. African Department, IMF.

At a charter city-level, the charter city administration must play its part in reducing the regulatory requirements and minimizing the setup costs for firms to boost the city's ease of doing business. By using the city's budget and aligning with its industrial strategy, it can also create sector-specific incubation programs, co-finance industrial projects with the private sector, and regulate internationally recognized quality assurance standards within its jurisdiction. However, easing state and national-level regulatory requirements and gaining access to foreign exchange will require the support of the state and national-level governments. This can be possible if the charter city administration builds strong relationships with its regional counterparts and crafts its industrial strategy in alignment with the region's economic objectives.

To promote industrialization in low- and middle-income regions, import substitution economic policies gained attention in the 1960s.⁵⁷ The goal was to restrict imports of manufactured goods and grow domestic industries through state-led incentives and protectionist policies. Advocates of the policy never discussed the specific tools that would best accomplish industrial development objectives, such as the support of infant industries, although they seemed to highlight the use of import licensing, duties, multiple exchange rates, and government allocation of foreign exchange.⁵⁸ The policies were implemented in Latin America, particularly Mexico, Brazil, and Argentina, and in some parts of Asia and Africa. Although the impacts varied from country to country, general trends showed that production growth did not extend beyond industries manufacturing consumer goods and there was slow and minimal employment and overall productivity growth. It prevented countries from benefitting from their comparative advantage in trade and improving their technology and production inefficiency due to lack of global competition.⁵⁹ As it was largely deemed a failure, pursuing import substitution as an industrial strategy tool may not be appropriate to guide a charter city's industrialization.

⁵⁷ Irwin, D.A. (2021, March). The Rise and Fall of Import Substitution. *World Development*, Vol. 139.

⁵⁸ Irwin, D.A. (2020, July). Working Paper: The Rise and Fall of Import Substitution. Peterson Institute for International Economics.

⁵⁹ Bussell, J. (2017, October 12). Import substitution industrialization. *Britannica*.

EVOLUTION OF AN INDUSTRIAL STRATEGY

The evolution of an industrial strategy will largely depend on the receptiveness of the charter city in the regional or global arena in its initial few years. If it is regarded as an attractive investment destination, the pace of industrial development can be exponential. However, there is still a need to take a pragmatic perspective when it comes to industrial development. Considering the economy of a charter city develops gradually, its industrial strategy should evolve as below:

YEARS 1-5

In the first few years of the new city development, when the city is deploying basic infrastructure and setting its policies in place, the focus should be on identifying value-adding and context-relevant anchor tenants to set up their operations in the city. The objective should be to pitch the city as a destination of choice for established foreign firms seeking to relocate or expand their business, and by doing so spurring significant job creation for the city's residents.

YEARS 5-15

In the next decade, it is important to divert attention to nurturing industrial clusters and making them regionally competitive. The focus should be on encouraging local and foreign firms that complement the activities of the anchor tenants to co-locate within the city. Concurrently, efforts to improve productivity of human capital to support industrial clusters should continue. There should also be resources diverted to creating a services sector especially in finance, IT, and legal to support global operations of anchor tenants and easing their potential logistical challenges by improving roadways, building an airport, and/or a seaport.

During this period, the economic planning department should continue to scan developments in the global economy and identify (i) 'risky' industries with a high value add to complement the existing portfolio of relatively low value add industrial clusters, and (ii) new industrial clusters. For instance, relatively 'risky' industrial clusters such as robotics and advanced manufacturing can be promoted alongside existing industrial clusters such as agro-processing and textile manufacturing. The intention here should be to create a diversified portfolio while gradually progressing up the value chain to boost the city's economic growth.

YEARS 15-30

In the next fifteen years, the city should focus on moving up its value chain. Regardless of the region's level of economic progress, the city's effective institutions, its high-quality infrastructure, and its proactive industrial strategy should give it an advantage to lead the region into its next stage of industrialization.

The challenge at this stage of development becomes sustaining the reasonably high growth levels

achieved in the first fifteen years. The city should pursue similar strategy considerations as its previous decade, but it should do so more aggressively. It is important to note that the level of competition would have increased with neighboring regions becoming more attractive to regional and global investors. Succumbing to complacency instead of forging ahead in the city's drive to ever higher value-addition would be detrimental to the city's overall success.

It is important to note that the timeline above is an estimation of how a charter city's industrial strategy could progress. The timeline could vary across industrial sectors and regional contexts and could be influenced by geopolitical challenges. Using city-level economic indicators such as the GDP growth rate and employment rate could provide a broad understanding of the effectiveness of the industrial strategy at each milestone. Concurrently, seeking qualitative feedback from incumbents on their experience and assessing their firm-level performance could also provide a reflection on the city's industrial progress.

LIMITATIONS

Pursuing an industrial strategy has its challenges. Most challenges tend to be context-specific, but some of the generalizable ones include:

- **Diversification:** It is vital for industrial strategies to build the city's economic resilience by taking a diversified approach. Over-reliance on one or two sectors makes the city vulnerable to global economic downturns which can impact the city's long-term growth trajectory. The challenge for city administrators is to actively scan for global developments in new industries and nurture those sectors that have the most potential to contribute to the city's economic development in the medium to long term. The portfolio of sectors to be promoted should comprise industries that fit the local context in terms of its human capital profile, geographical location or availability of natural resources, and industries that are perceived 'risky' in the region's context. 'Risky' industries should be high value-add industries that may tend to have a low likelihood of success given the city's level of economic development but are still worth pursuing, as they have a huge pay-off in terms of moving up the value-chain if successful. For instance, a new charter city located in an agrarian part of Africa should not only focus on developing its agro-processing sector but also diverting resources in promoting its services, manufacturing, and IT sectors, which may be considered risky considering the context.
- **Moving up the Global Value-Chain:** A charter city can plan a strategy to move up the value-chain by upskilling workers and attracting higher value-added industries but implementing it can be a challenge. The primary reason is overcoming the built-up inertia in industrial clusters. Over time, industries invest significantly to optimize their processes and increase their output within their value-chains. Despite availability of higher-skilled workers and affordable innovative technologies, industrial supply chains find it a challenge to envision an overhaul of their operations to move up the value chain.

As seen in China, industrial clusters still compete globally and within the country mainly on low-cost manufacturing, based on cheap labor and low-tech, labor-intensive sectors (i.e., at the low end of the global value chain), although some high-tech clusters have begun to emerge.⁶⁰ Due to the low technical capacity and the difficulty in protecting intellectual property rights in clusters, thousands of firms compete fiercely on price. Such cut-throat competition has been pushing firms to resort to illegal means, such as using fake or cheap materials, pirating, etc. In the long run, such a situation will adversely affect the future development of these clusters and could even cause them to simply wither away.⁶¹ Considering economic competitiveness increasingly hinges on knowledge, technology, and innovation, moving China's industries to high value-added sectors remains a real challenge.

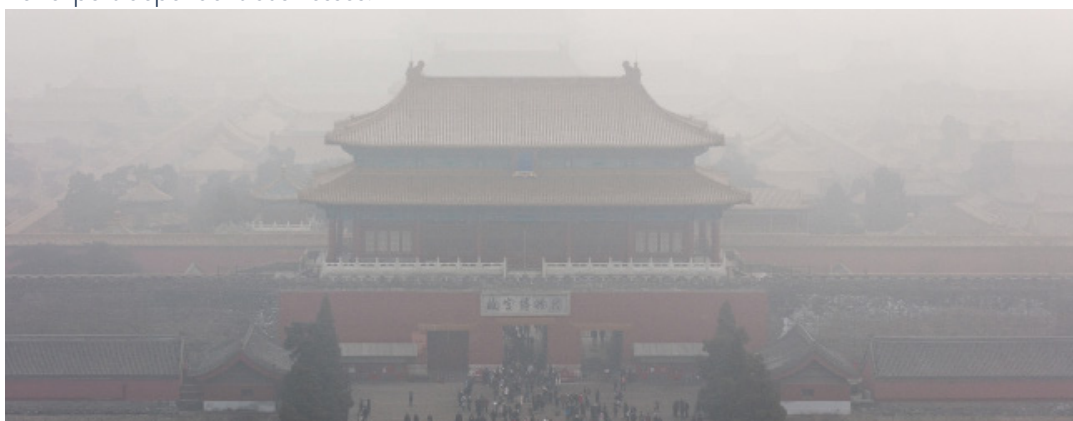
- To overcome this challenge in charter cities, industrial strategies over time should be designed

⁶⁰ Zheng, D.Z. (2010). Building Engines for Growth and Competitiveness in China: Experience with Special Economic Zones and Industrial Clusters. The World Bank.

⁶¹ A circular economy is a systemic approach waste management designed to benefit the economy and the environment. In contrast to the 'take-make-waste' linear model, a circular economy

in collaboration with the local industry. Conducting frequent engagements with industry players to understand their concerns, raising awareness within the industry of the latest technological advancements, and providing financial incentives for incremental upgrades to supply chains can play a crucial role. The focus should be on guiding firms to foresee their future and make them internalize the perceived benefits in moving towards higher value-added activities. Simultaneously, a city's industrial strategy should remain focused on attracting foreign firms belonging to higher value-added sectors to the city to promote knowledge transfer and human capital development.

- **Overcoming Environmental and Resource Constraints:** Industrial clusters in cities need to constantly keep up with the changing natural environment. Ensuring sustainable development and addressing climate change should be at the heart of industrial strategies. The challenge for strategies is to continue being innovative and finding solutions that not only boost economic growth but also protect environmental needs. Promoting a circular economy,⁶² paying attention to the quality of factor inputs used by industries and raising environmental awareness among workers and industrialists should be a focus from the inception of industrial development. Learning from China's growth story, heavy reliance on low technology and labor- and resource-intensive manufacturing without accounting for harmful externalities can result in environmental challenges. China has evidently learned from its decades of high industrial growth at the expense of large-scale environmental degradation because it recently pledged to become carbon neutral by 2060.⁶³ Aligned with an increasing global emphasis on climate change, it seeks to realign its industrial strategy for the sake of sustainability but also because compliance with tougher eco-standards set by advanced economies is turning out to be a challenge for export-dependent businesses.



The Forbidden Palace in Beijing obscured by smog.

- **Institutional Reforms:** To sustain an industrial strategy, institutions of the city need to constantly evolve to meet the demands of the market economy. Over time, institutional reforms need to be incremental rather than radical to ensure the city's economic stability. City administrators need to be mindful that a politicized industrial strategy will tend to favor elites who might not pursue goals aligned with the city's long-term economic development, instead engaging in short-termism. The challenge for administrators is to take an objective approach to industrial strategy and align their vision with those of industries.

Apart from the challenges, the domain of industrial strategy has its limitations. Some key limitations include:

- **Knowledge Constraints:** Oftentimes, economic planners in the charter city administration lack industrial knowledge and experience to make informed decisions on resource allocation and promotion of certain kinds of industrial activities.⁶⁴ Due to information asymmetry and bounded rationality, it is

⁶² A circular economy is a systemic approach for waste management designed to benefit the economy and the environment. In contrast to the 'take-make-waste' linear model, a circular economy is regenerative by design and aims to gradually decouple growth from the consumption of finite resources i.e., one industry/firm's waste becomes another industry/firm's input.

⁶³ McGrath, M. (2020, September 22). Climate change: China aims for 'carbon neutrality by 2060'. BBC News.

⁶⁴ Dirkmaat, O.A. (2020, January 21). Hayek versus Harvard: The Case Against Industrial Policy. Francisco Marroquin University.

⁶⁵ Gregg, S. (2020, August 03). The Trouble with Industrial Policy. Online Journal of the Witherspoon Institute: Public Discourse.

industrialization, industrial strategies themselves could create developmental failures. Taking a top-down approach may lead to interventions which create perverse incentives and distort markets. To minimize this risk, it is crucial for planners to always collaborate⁶⁶ with industrialists and involve their pragmatic views in decision making.⁶⁷ Purely relying on academic theory and best practices and not paying attention to the local context's market behavior could result in a breakdown of industrial strategy.

- **Land Planning and Infrastructure Management:** Management and allocation of scarce city land for industrial use is beyond the scope of industrial strategies. The city's urban planners need to ensure sufficient land is assigned for industrial purposes, and all leases or sales of land to firms and industries should be aligned with the city's industrial strategy. There needs to be a synergetic collaboration between the urban planning and economic planning departments within the city administration to ensure land is allocated towards the most productive purposes.

Similarly, provision and maintenance of basic high-quality infrastructure facilities such as water, power, and transportation for industries within cities should not fall under a city's industrial strategy. Although basic infrastructure is a necessary condition for a successful industrial strategy, the planning and management of it should be done at a city level. Inputs from the economic planning department should be taken into consideration to ensure the capacity of infrastructure is sufficient to meet the dynamic demands of industries. For instance, the data center industry requires significant amount of power relative to the average industrial demand to run their operations. The charter city's industrial infrastructure should be flexible to accommodate these variations in infrastructure specifications.

- **Human Capital Development:** The scope for industrial strategies is limited to the identification of inadequate industry-specific talent in a city and encouraging firms to train the city's workforce. The design and implementation of the training programs to upskill workers should be managed by industry associations or an independent human capital development department falling under the city administration. This is to allow the economic planning department to remain focused on its core objective: guiding the charter city's industrial journey through an industrial strategy.
- **Anti-Competition:** Policing anti-competitive behavior is not under an industrial strategy's purview. Formation of industrial clusters could result in the concentration of market power by a few dominant firms. Attracting these players to the charter city is vital for its economic development as they serve as credible anchor tenants. However, these firms could have high bargaining power relative to their suppliers and buyers and may therefore decide to take unfair advantage of their position. Legislation within the charter city should be responsible for identifying and remedying such practices. City administrators can carry out consultations with these firms to change their practices or even consider punitive action if necessary.
- **Expenditure Autonomy:** Developing and managing an industrial strategy requires funding from the charter city's budget. The economic development department within the city administration should be granted an autonomous budget to carry out its activities. In the initial years of the city, the budget devoted to industrial strategy should be significant to properly lay the path dependency for the charter city's industrialization on the right track. Gradually, once the city reaches a certain milestone in its economic development, the budget allocated to industrial strategy can be relatively balanced. It is important to keep in mind that over-reliance on funding from the private sector solely for industrial strategy could bias decision-making as decisions could favor the interests of the investors.

⁶⁶ This blog post recommends a collaborative approach: <https://www.chartercitiesinstitute.org/post/network-governance-a-potential-model-for-a-citys-industrial-strategy>.

⁶⁷ Ostrom, E. (2010, June). Beyond Markets and States: Polycentric Governance of Complex Economic Systems. *The American Economic Review*, Vol. 100, No. 3, pp. 641-672.

CONCLUSION

An industrial strategy for a charter city is not a panacea for industrialization and economic development. It is supposed to be an effective tool to support a charter city's economic growth. The success of an industrial strategy lies in its implementation, which requires visionary leadership, a competent and driven core team, and strong collaborations with industries. The industrial strategy successes of South Korea, Taiwan, and Singapore were tailor-made to fit their respective geopolitical and socioeconomic contexts. Although their strategies offer learning points, it is important to note that a charter city needs to craft its own industrial strategy from scratch. A transformational industrial strategy needs to be developed in a holistic sense. It needs to appraise the charter city's regional, national, and global position before guiding skills development, access to resources, industrial clustering, and innovation. Ultimately, a diversified and dynamic strategy creating an intersection between the expertise of foreign firms and the entrepreneurial spirit of local firms should be the underlying focus to sustain the charter city's long-term economic development.

CONTACT DETAILS

DR. MARK LUTTER

CCI Founder

mark@cci.city

KURTIS LOCKHART

Executive Director &

Head of Research

kurtis@cci.city

Jeffrey Mason

Researcher

jeffrey@cci.city

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