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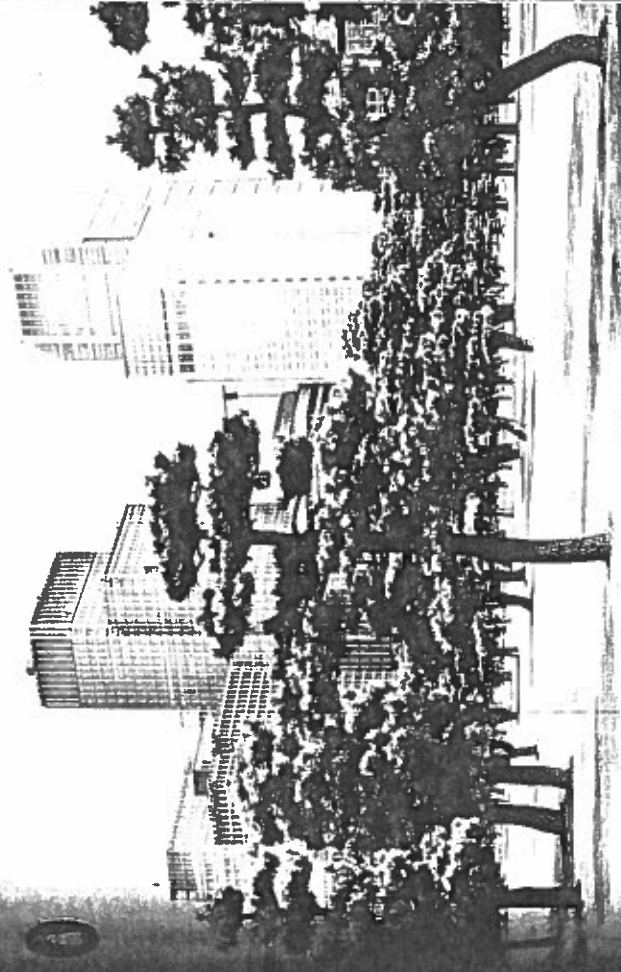


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TRIUMPH OF THE CITY

How Our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier, and Happier



masterpiece." —Steven D. Levitt,
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"Bursting with insights."
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EDWARD GLAESER

TRUMPH of the CITY

ABOUT THE AUTHOR

Edward Glaeser is the Fred and Eleanor Glimp Professor of Economics at Harvard University, where he directs the Taubman Center for State and Local Government and the Rappaport Institute for Greater Boston. He is also a senior fellow at the Manhattan Institute and a contributing editor to *City Journal*. He studies the economics of cities, housing, segregation, obesity, crime, innovation, and other subjects, and writes about many of these issues as a columnist for Bloomberg View.

How Our Greatest Invention Makes Us Richer,
Smarter, Greener, Healthier, and Happier

Edward Glaeser

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PENGUIN BOOKS

INTRODUCTION:

Our Urban Species

Two hundred forty-three million Americans crowd together in the 3 percent of the country that is urban. Thirty-six million people live in and around Tokyo, the most productive metropolitan area in the world. Twelve million people reside in central Mumbai, and Shanghai is almost as large. On a planet with vast amounts of space (all of humanity could fit in Texas—each of us with a personal townhouse), we choose cities. Although it has become cheaper to travel long distances, or to telecommute from the Ozarks to Azerbaijan, more and more people are clustering closer and closer together in large metropolitan areas. Five million more people every month live in the cities of the developing world, and in 2011, more than half the world's population is urban.

Cities, the dense agglomerations that dot the globe, have been engines of innovation since Plato and Socrates bickered in an Athenian marketplace. The streets of Florence gave us the Renaissance, and the streets of Birmingham gave us the Industrial Revolution. The great prosperity of contemporary London and Bangalore and Tokyo comes from their ability to produce new thinking. Wandering these cities—whether down cobblestone sidewalks or grid-cutting cross streets, around roundabouts or under freeways—is to study nothing less than human progress.

In the richer countries of the West, cities have survived the tumultuous end of the industrial age and are now wealthier, healthier, and more alluring than ever. In the world's poorer places, cities are expanding enormously because urban density provides the clearest path from poverty to prosperity. Despite

the technological breakthroughs that have caused the death of distance, it turns out that the world isn't flat; it's paved.

The city has triumphed. But as many of us know from personal experience, sometimes city roads are paved to hell. The city may win, but too often its citizens seem to lose. Every urban childhood is shaped by an onrush of extraordinary people and experiences—some delicious, like the sense of power that comes from a preteen's first subway trip alone; some less so, like a first exposure to urban gunfire (an unforgettable part of my childhood education in New York City thirty-five years ago). For every Fifth Avenue, there's a *Mumbai slum*; for every Sorbonne, there's a D.C. high school guarded by metal detectors.

Indeed, for many Americans, the latter half of the twentieth century—the end of the industrial age—was an education not in urban splendor but in urban squalor. How well we learn from the lessons our cities teach us will determine whether our urban species will flourish in what can be a new golden age of the city.

My passion for the urban world began with the New York of Ed Koch, Thurman Munson, and Leonard Bernstein. Inspired by my metropolitan childhood, I've spent my life trying to understand cities. That quest has been rooted in economic theory and data, but it has also meandered through the streets of Moscow and São Paulo and Mumbai, through the histories of bustling metropolises and the everyday stories of those who live and work in them.

I find studying cities so engrossing because they pose fascinating, important, and often troubling questions. Why do the richest and poorest people in the world so often live cheek by jowl? How do once-mighty cities fall into disrepair? Why do some stage dramatic comebacks? Why do so many artistic movements arise so quickly in particular cities at particular moments? Why do so many smart people enact so many foolish urban policies?

There's no better place to ponder these questions than what many consider to be the archetypal city—New York. Native New Yorkers, like myself, may occasionally have a slightly exaggerated view of their city's importance, but New York is still a paradigm of urbanity and therefore an appropriate place to start our journey to cities across the world. Its story encapsulates the past, present, and future of our urban centers, and provides a springboard for many of the themes that will emerge from the pages and places ahead.

If you stand on Forty-seventh Street and Fifth Avenue this Wednesday afternoon, you'll be surrounded by a torrent of people. Some are rushing uptown for a meeting or downtown to grab a drink. Others are walking east to enter the great subterranean caverns of Grand Central Terminal, which has more platforms than any other train station in the world. Some people may be trying to buy an engagement ring—after all, Forty-seventh Street is the nation's premier market for gems. There will be visitors gazing upward—something New Yorkers never do—on their way from one landmark to another. If you imitate a tourist and look up, you'll see two great ridges of skyscrapers framing the shimmering valley that is Fifth Avenue.

Thirty years ago, New York City's future looked far less bright. Like almost every colder, older city, Gotham seemed to be a dinosaur. The city's subways and buses felt archaic in a world being rebuilt around the car. The city's port, once the glory of the Eastern seaboard, had sunk into irrelevance. Under the leadership of John Lindsay and Abe Beame, the city's government had come near default despite having some of the highest taxes in the nation. Not just Jerry Ford, but history itself seemed to be telling New York City to drop dead.

New York, or more properly New Amsterdam, was founded during an earlier era of globalization as a distant outpost of the Dutch West India Company. It was a trading village where a hodgepodge of adventurers came to make fortunes swapping beads for furs. Those mercantile Dutch settlers clustered together because proximity made it easier to exchange goods and ideas and because there was safety behind the town's protective wall (now Wall Street).

In the eighteenth century, New York passed Boston to become the English colonies' most important port; it specialized in shipping wheat and flour south to feed the sugar and tobacco colonies. During the first half of the nineteenth century, with business booming, New York's population grew from sixty thousand to eight hundred thousand, and the city became America's urban colossus.

That population explosion was partly due to changes in transportation technology. At the start of the nineteenth century, ships were generally small—three hundred tons was a normal size—and, like smaller airplanes today, ideal

better lives with a more moderate increase in energy use. Yet fuel efficiency is unlikely to be the only answer, because Jevons's paradox reminds us that as engines and appliances get more efficient, they will also be used more.

If the future is going to be greener, then it must be more urban. Dense cities offer a means of living that involves less driving and smaller homes to heat and cool. Maybe someday we'll be able to drive and cool our homes with almost no carbon emissions, but until then, there is nothing greener than blacktop.

For the sake of humanity and our planet, cities are—and must be—the wave of the future. There are several models of urban success that will carry us into that future. The next chapter discusses the types of cities that will thrive in this century and beyond.

CHAPTER 9

How Do Cities Succeed?

Tolstoy may have been right that “Happy families are all alike; every unhappy family is unhappy in its own way,” but among cities, failures seem similar while successes feel unique. Someone wandering through Leipzig's boarded-up neighborhoods could very well think she was in Detroit. Empty houses give off a similarly depressing feeling whether they're in England or Ohio. But no one could ever confuse Bangalore with Boston or Tokyo with Chicago. Successful cities always have a wealth of human energy that expresses itself in different ways and defines its own idiosyncratic space.

The air-conditioned skyways that connect the shimmering towers of downtown Hong Kong are full of the kinds of chain stores that can be found on several continents, and yet few people would think they were anywhere other than Hong Kong. Tokyo and Singapore also boast tall towers and chain stores, but they bear no resemblance to either Hong Kong or each other. While Hong Kong is decidedly multicultural, Tokyo is profoundly Japanese, with special sensibilities that are so hard for outsiders to understand. Singapore is, if anything, even more open to Westerners than Hong Kong, but its streets are less crowded, and its rules are far stricter. All three cities have great food, but the cuisines are also quite different. No one would confuse raw tuna with Cantonese duck or the multiethnic mixture that makes eating in Singapore such a delight.

But all successful cities do have something in common. To thrive, cities must attract smart people and enable them to work collaboratively. There is no such thing as a successful city without human capital. Today, especially in the developed world, skilled people have usually been well educated in tradi-

tional schools—although their most important knowledge is usually acquired after graduation. At other times, and in poorer places today, human capital is more likely to come in the form of intelligent, energetic entrepreneurs who, like Henry Ford or James Watt, received little formal education. The best cities have a mix of skills and provide pathways for those who start with less to end with more.

But different cities have found different ways to attract talent. In some cases, either raw political power or sensible probusiness policies attract skilled people. Tokyo became one of the largest cities in the world in the seventeenth century when the Tokugawa shogunate made it Japan's de facto capital. Three hundred years later, it continues to attract that country's best and brightest. Hong Kong and Singapore have thrived by establishing themselves as bastions of economic freedom and the rule of law in an often disorderly part of the world.

In other cities, like Boston, a long tradition of higher education continues to bear rewards. In Minneapolis and Atlanta, local universities also serve as anchors for their urban economies. In other areas, skilled people come for the quality of life—the pleasures that define Paris and that a sheikh hopes will boost Dubai. Finally, a city with enough other attractions can, as Chicago has, gain an advantage by lowering barriers to new construction so that it becomes a cheaper place to live than its competition.

In this chapter, I review the paths that different cities have taken to success. Not only is there no one formula toward urban eminence, but also the sources of success are often highly nation specific. Certainly Detroit could do very well if it—like Tokyo—became the capital of a highly centralized country with an abundance of nationally funded universities, but how exactly can that unsurprising piece of information help Mayor Bing? The Rust Belt can benefit more by a nuanced understanding of the idiosyncratic sources of Tokyo's or Singapore's strength, so as to guard against blind imitation and draw the locally appropriate lessons from fat-flung urban success stories.

The Imperial City: Tokyo

In 1590, the warlord Hideyoshi unified Japan. When he died, his ally Tokugawa Ieyasu replaced him as master of Japan, and his new castle home, Edo, became the country's effective capital. The powerless emperor continued to live amid

the cherry blossoms of Kyoto, but the real business of government went on in the city that came to surround the Tokugawa shoguns.

The shoguns' power over Japan was much greater than that wielded by contemporary European monarchs in their own countries. As much as half of Japan's rice revenue ran through the shoguns' hands. The more centralized a nation's government, the larger its capital city, because people are attracted to power as ants are to picnics. Well-functioning democracies manage to provide political rights even to people who live far away from the corridors of power; dictatorships generally do not. As a result, the largest cities in dictatorships, which are almost invariably the capitals, contain, on average, 35 percent of their countries' urban population. The largest cities in stable democracies contain only about 23 percent of their countries' urban population. By the end of the eighteenth century, Edo had a million people, making it one of the two or three largest cities in the world.

The Tokugawa shoguns were ousted in 1868 as the Meiji Restoration re-established imperial power, but that did little to reduce Edo's size. The Meiji emperor moved his court from Kyoto to Edo, renaming it Tokyo, or Eastern Capital. The ancient shogun's castle became the imperial palace, as it remains today. From 1868 onward, Tokyo has been the political center of a successful, politically centralized country, and that ensures the city's success.

After the restoration, Japan grew as it opened itself to trade with the West. Even before Meiji, Japan seems to have been well educated, and that helped make its transition to industrialization fast and effective. Since 1945, Japan has been one of the world's great economic success stories, even when taking into account its "lost decade" of economic stagnation in the 1990s.

Even in 1960, when Japan was still poor, its people were remarkably well educated. At that time, the average income in Japan was lower than in Argentina or Chile and about half the average income in France. But the average Japanese male had 7.4 years of schooling, substantially more than in France, the Netherlands, or Spain. That education was the springboard for the country's economic takeoff, and it ensured that Tokyo would be a skilled city. The powerful capital was bound to attract more than its share of Japan's stars.

In the 1980s, when Japan seemed endowed with perpetual economic growth, experts attributed its success to any and all of its idiosyncrasies, including the government's aggressive support for particular companies and entire indus-

tries, like electronics and automobiles. Japan's Ministry of International Trade and Industry (MITI) had long financed and otherwise supported many firms. But despite the fact that MITI employed far more experts than any city or state economic development agency could hope to hire, it usually picked losers rather than winners. Industrial policy is not always a mistake—I'll discuss Singapore's success later—but MITI's failures stand as a warning to urban leaders who want to play venture capitalist. Japan's economic strength reflects the skill of its workers and entrepreneurs, not the expertise of its government's economic planners.

However, the power of the government's Tokyo-centered bureaucracies helps explain why the nation's capital became so large. It was useful for firms to be physically close to MITI if they wanted the agency's support. It's still valuable to be near the Japanese Diet and the vast bureaucracy. As in other highly centralized nations, like France, the most talented young Japanese often start their careers working for a government agency like MITI, gaining contacts that serve them well throughout their lives. Talent clusters around power, and Tokyo became a vast agglomeration of politics, business, and pleasure.

Tokyo's physical structure reflects this reality. At the very center of the city lies the emperor's palace, which is surrounded by acres of land inaccessible to lesser mortals for all but one day each year. Outside the palace grounds are vast governmental buildings—the brains of the nation's sizable public sector. The business districts and Tokyo's urban playgrounds, like the Ginza shopping sector, are a little farther out. The city is Washington and New York rolled into one.

But Tokyo's size is manageable, and in many ways it provides a model for many of Asia's growing megacities. Japan's bureaucrats may not be able to beat private venture capitalists, but they wisely allowed Tokyo to grow tall, and they built a superb public transit system. The streets are clean and safe. The silk curtain of Japan's insular culture remains relatively difficult for outsiders to part, which ensures that the city will never rival New York or London as a mecca for worldwide talent, but Japan has an abundance of smart, well-educated people. As long as they keep coming to Tokyo for proximity to each other and the nation's government, Tokyo will remain one model of a successful city.

The Well-Managed City: Singapore and Gaborone

Much of the world suffers under awful governments, and that provides an edge for those cities that are administered well. Some of the most prominent examples of that fact are the former outposts of the British East India Company, Hong Kong and Singapore. While Tokyo grew great because it was the center of a growing country, Hong Kong and Singapore have been successful because they were places apart, politically separate from the large nations next to them. They succeeded by offering businesses a better government than nearby states, with fairly applied rules that favored investment. Their political institutions attracted the human capital that made them great.

The success of the British East India Company also owed much to its ability to attract and empower talent, like Thomas Stamford Raffles. Raffles was the son of a slave trader who was born at sea off the coast of Jamaica. His father died bankrupt when Raffles was fourteen, and Raffles joined the East India Company as a clerk. Ten years later, he went to Malaysia as assistant secretary to the company's local governor, and he immersed himself in all things Malay. After helping lead the British conquest of Java during the Napoleonic wars, Raffles was given authority in Indonesia, where he displayed an odd but quintessentially English combination of impressive amateur scholarship, moral mission, and buccaneering ambition.

Raffles's *History of Java*, written in 1817, still reads well. He was passionate about flora and fauna, keeping a sun bear cub as a pet. He later became the first president of the London Zoo. Despite his father's occupation, Raffles banned trading slaves, as well as opium. Most important, he negotiated the deal that gave his employer the right to build a trading post on an island named Singapore, or Lion City, off the tip of the Malay Peninsula.

Over the next 140 years, except for its occupation by the Japanese during World War II, Singapore was a shiny sapphire in Great Britain's crown. The island's location, in the straits between Malaysia and Sumatra, made it an ideal port at the center of Asia's sea lanes. That port and the rule of law enforced by England attracted tradesmen of the Chinese diaspora who had fled their own country's chaos.

In 1850, China's Guangdong province exploded in rebellion, and 25 million

people may have died in the bloody conflagration that followed. Twelve years later, while the war was still ongoing, Lee Bok Boon left Guangdong for the safety of the British-managed Straits Settlements, which included Singapore. His family prospered, and his great grandson Lee Kuan Yew was educated at Raffles College in Singapore and then Cambridge. When the Japanese occupied Singapore, Lee became a teenage entrepreneur selling tapioca-based glue. After World War II, he worked as a lawyer and became a leader in the fight for independence from Britain. Initially, Singapore separated from England to become part of Malaysia, but in 1965, irreconcilable differences between the puritanical, intellectually ferocious Lee and the pleasure-loving, aristocratic leader of Malaysia led Singapore to become an independent city-state.

As the island's first prime minister, Lee faced vast challenges. His 217-square-mile domain had a population of 1.9 million but no natural sources of food or water, and it was surrounded by two hostile giants: Malaysia and Indonesia. If Raffles himself had been betting on the success of the tiny city, he would have demanded long odds. But it turns out that a city on its own without any rural hinterland can not only survive but thrive.

In 1965, incomes in Singapore were about one fifth of those in the United States. Yet over the next forty years, the city-state's economy averaged more than 8 percent growth per year, among the highest rates in the world. In the 1960s, Singapore was a poor shantytown where indoor toilets were a rarity. Today, Singapore is a glistening First World city with one of the highest per capita gross domestic products on earth.

Singapore's success reflects the remarkable ability of a dense agglomeration of smart people to innovate and thrive when blessed with a remarkably competent public sector. Lee followed an incongruous but extremely successful combination of free-market capitalism and state-led industrialization. He inherited Raffles's penchant for paternalism, subsidizing savings, fining people for misbehavior like spitting, and heavily taxing alcohol. Singapore is happy to profit by attracting foreign gamblers to a massive new casino complex, but it doesn't encourage its own citizens to bet. They must pay more than \$70 just to enter the casino.

Singapore—like Japan—invested in education. In 1960, the average adult in Singapore had only three years of schooling, less than the average adult in

Lesotho or Paraguay and less than half the Japanese figure. By 1995, Singapore's thirteen-year-olds led the world in the Test of International Math and Science, and Singapore has routinely been a top performer since then. Those test scores reflect a national commitment to home-grown human capital, but Singapore's skills also reflect an influx of foreign talent drawn by sensible policies and reliable legal institutions.

Singapore's industrial policy seems to have been more successful than that of Japan, probably because Lee Kuan Yew was playing educator more than venture capitalist. By moving his population into garment manufacturing, then electronics, and then biomedical production, Lee pushed them to acquire new skills.

In places like Ireland and Israel, factions have wasted decades fighting over land. Singapore's success illustrates the irrelevance of acreage. The city-state grew wealthy not just despite its lack of land, but probably even because it had so little space. Precisely because Singapore had so few natural resources, Lee had to adopt sensible policies that would attract international capital. A large literature now documents the perverse tendency of natural resource windfalls to harm countries by allowing corrupt, inept, or destructive politicians and policies to endure.

Much of the Third World has long been mired in corruption. Lee understood that First World investors wanted rule of law, not backroom bribery, and he lifted Singapore out of the Third World by giving them just that. Lee protected judicial independence. To keep his bureaucrats honest, he gave them high salaries and even higher penalties for malfeasance. Inspector Clouseau in *The Pink Panther* implausibly explains his larcenous wife's expensive furs by saying that she is very frugal with the housekeeping. In Singapore, Madame Clouseau's spending would be enough to convict the inspector, for an extravagant lifestyle is sufficient to prove a public official's guilt. "Clubber" Williams, the New York police officer with the yacht and country home, would never have been able to get off by claiming to be a successful speculator in Japanese real estate.

Singapore's rule of law has long been complemented by excellent infrastructure, particularly its port. The World Bank rates Singapore as having the world's best logistics for trade and transport. Good infrastructure and the rule

of law helped lure foreigners who brought their skills to the island, and Singapore makes it especially easy for them to come by maintaining a superb airport and national airline.

Singapore attracts expatriates, in part, with a quality of life that is remarkably high, given its minute land area, absence of natural resources, and sweltering location right on the equator. While New York City could readily import water from upstate via the Croton Aqueduct, Singapore has no hinterland and inherently lacks water. Until recently, it had to import much of its water from Malaysia, but it has overcome this problem by building desalination plants and a \$3.65 billion Deep Tunnel Sewerage System, which was named Water Project of the Year in 2009 because of its “contribution to water technology and environmental protection.” The system runs for thirty miles, sixty-six feet or more below ground, removing sewage and then recycling the wastewater.

You might expect traffic jams in the world’s second most densely populated nation, but Singapore’s streets are fluid because it adopted congestion pricing in 1975. Lee Kwan Yew’s initially simple system has constantly evolved, and today toll-collecting arches electronically charge cars throughout the city. Every car must have a transponder attached to a source of funds, and as a result, driving around this dense Asian city is easy. Buses move quickly on the uncongested roads. For longer distances, the city’s rail network is safe and fast. Commute times run around thirty-five minutes, despite the fact that housing is often far away from the city center.

Singapore’s streets are safe, clean, and often tree lined. Lee Kwan Yew understood that the Lion City could keep its green space only by building up, and as of 2009, forty-two of its buildings rise above 490 feet, more than triple the number in either London or Paris. Americans visiting Singapore can be forgiven for wistfully wondering why our own cities don’t seem so well managed.

The success of Botswana’s capital, Gaborone, in southern Africa, is less extreme than Singapore’s, but it may be even more remarkable, given the troubles that have afflicted so many of its neighbors. The two cities have both relied upon rigorous management to rise above the squalor and corruption that typify so many cities in the developing world. When Botswana became independent from Great Britain in 1966, it was one of the poorest places on

earth. Over the next thirty-five years, it may have experienced the second-fastest GDP growth of any country, and it is now one of the two or three most prosperous nations in sub-Saharan Africa. Gaborone was founded in 1965, but it now has around two hundred thousand people, about a tenth of the country’s population.

Botswana’s success rests on good governance and natural resources. The country’s first president, Seretse Khama, who led the country for fourteen years, was a traditional tribal chief and an Oxford-trained lawyer. Like Lee Kwan Yew, Khama fought corruption, kept taxes low, and protected property rights. In much of Africa, gifts of nature like Botswana’s diamonds have led to civil war, but Botswana has used its natural resources to fund investments in physical and human capital. Between 1965 and 2000, the average years of schooling in Botswana increased from 1.34 to 5.4 years, which makes it one of the best-educated places in sub-Saharan Africa.

Gaborone’s growth has paralleled Botswana’s, increasing more than tenfold between 1971 and 2001. Its modest, modernist skyline was built at the country’s edge, next to the railway line that leads to Pretoria. Its public transportation functions well, and it is well linked to the outside world. And Gaborone is home to two of the campuses of the University of Botswana, the country’s primary source of higher education.

Like much of Africa, Gaborone has suffered terribly from AIDS, but the government’s response to the plague—delivering free antiretroviral drugs to everyone—has been humane and moderately effective, raising the life expectancy substantially for those with HIV. No one is going to confuse Gaborone with Paris, but it is a striking success among African cities, primarily because its government is effective. In the world’s poorest places, success above all reflects decent political institutions and investment in education, and that’s what has made Gaborone a well-functioning city.

The Smart City: Boston, Minneapolis, and Milan

Singapore and Gaborone are imperfect models for cities that are neither independent states nor national capitals. They also can’t serve as examples for places in regions where decent economic policies are the norm. Singapore succeeded, in part, by investing in education and by choosing economic policies that would



positively differentiate itself from its neighbors. No American, European, Indian, or Chinese city has that much control. In larger countries, economic policies are determined mostly at the national level, not the municipal level. Generally speaking, America and Europe have a relatively well-established rule of law, so no one place is going to stand out too much in that arena. The ability of any city within a large country to determine its education level is also more limited, for migrants will generally be educated elsewhere.

Indeed, historical accident plays a large role in determining which American cities are the best educated, and in many cases, the most successful. Most of the differences in college achievement in 2000 can be explained, in a statistical sense, by education levels in 1940. If less than 5 percent of an area's adult population had a college degree in 1940, then, on average, less than 19 percent of that area's population had a college degree in 2000. If more than 5 percent of an area's population had a college degree in 1940, then, on average, 29 percent had a college degree in 2000. We can see such effects even if we look much further back into history. Boston, like New York, has staged a remarkable comeback since the 1970s, a rebirth that owes as much to decisions made in the 1630s as to any recent policies.

Boston was founded by John Winthrop and his friends for largely religious motives. Winthrop came to the New World because "It will be a service to the Church of great consequence to carry the Gospel into those parts of the world, to help on the coming of the fullness of the Gentiles, & to raise a Bulwark against the kingdom of AntiChrist which the Jesuits labour to rear up in those parts." The anti-Jesuit hysteria of Winthrop and his companions does them no credit, but their fear-filled competition with Rome was the starting point for Boston's success in education.

Like many Protestants, the early Bostonians believed that reading the Bible was the surest means of knowing God's will. They saw education as a key brick in that "Bulwark against the kingdom of AntiChrist" and founded the Boston Latin School in 1635. The next year, they allocated £400, more than half of the colony's tax revenues in 1635, for a college. Another £375 and four hundred books came from the estate of John Harvard, a Cambridge-educated Puritan minister. These investments made Massachusetts "a federation of parishes made up of laity who were devotees of the religion of the book: possibly the most literate society then existing in the world."

Boston's human capital mattered because the city and its region had little worth exporting. New England's climate is very similar to that of old England, so Boston couldn't send much overseas that the English couldn't get more cheaply closer to home. Yet Bostonians wanted to buy European manufactured goods, like guns and Bibles. In its early years, Boston operated as a sort of colonial-era Ponzi scheme: the first wave of immigrants sold basic survival items, like food and clothing, to the next wave of immigrants, who, like John Harvard himself, came over with money.

The problem with Ponzi schemes is that they require eternal exponential growth, and Boston's growth stalled when the English Civil War established a Protestant commonwealth in the old country. Boston's citizenry then tried a lot of different moneymaking experiments, like ironworks and printing presses, but its first reinvention owes more to luck than skill. In 1647, a famine hit the rich sugar colonies of the West Indies. The planters sent boats north looking for food, and one found its way into Boston harbor. It started the triangle trade that made Boston's fortune during the Colonial era. The city exported basic commodities south to the cash colonies, where land and slaves were too valuable to waste on producing food and wood. Those colonies exported sugar and tobacco to the Old World. Manufactured goods were exported to Boston, which could buy them with the money made from selling food and wood to the Caribbean.

Boston's first-mover advantage in this triangle trade didn't last forever. New York had a better river and was closer to the South; Philadelphia was surrounded by richer farmland. Boston faltered again, and then reinvented itself again in the early nineteenth century. The same improvements in ship technology that established New York as the hub of transatlantic travel made it possible for Bostonian mariners to create a global trade network. Faster trips and longer journeys decreased the relative cost of starting in Boston and increased the value of the city's oceangoing human capital, built up over centuries of seafaring. The city had top-notch sailors and merchants, who set up trading networks in places as far away as China and South Africa.

But all that sail-specific human capital lost its value with the rise of steamships, and in the midnineteenth century, Boston had to reinvent itself yet again, this time around manufacturing. A Harvard-educated scion of a shipping family, Francis Cabot Lowell, had traveled to England in 1810 and

brought an understanding of Manchester's power looms back to the Boston area. Lowell's mills were powered by rivers outside the city, but as engines got smaller, factories moved within city limits.

In the nineteenth century, the area's intellectual establishment flourished alongside its resurgent economy, and various elements in Boston's vibrant religious mosaic founded new colleges: Tufts by Universalists in 1852, Boston College by Jesuits in 1863, Boston University by Methodists in 1871, and Wellesley by a lawyer-turned-lay-preacher in 1875. Even more portentous, new institutions like the Lawrence Scientific School, at Harvard, and MIT, a land-grant college, were being formed to transmit technical knowledge.

In the twentieth century, the advantages of rail and urban factories evaporated in many cities, and by the 1970s, Boston was a hollowed-out hull. Real estate was priced far below construction costs. Ethnic strife, epitomized by an epic battle over school busing, tore the city apart. Yet Boston, like New York, managed to reinvent itself again, and this time the reinvention relied heavily on educational institutions built up over centuries.

Boston's postindustrial success has been built on engineering, computers, financial services, management consulting, and biotechnology—all education-oriented industries. A young MIT engineer, Vannevar Bush, partnered with his college roommate to create the American Appliance Company, which became Raytheon, which has spent the last eighty-five years working on the commercial applications of cutting-edge science, especially missiles. Raytheon's current headquarters in the old watch town of Waltham looks across the Cambridge Reservoir to Route 128, a technology corridor that once rivaled Silicon Valley as a computer hub. In the 1950s and 1960s, engineers from MIT and Harvard created companies like Wang Laboratories and Digital Equipment Corporation (DEC), which located throughout greater Boston and competed with IBM for a share of the growing computer industry. At their height, Wang had 30,000 employees and DEC had over 120,000. Even before Wang and DEC went out of business, economist AnnaLee Saxenian at Berkeley foretold the decline of Boston's computer industry, arguing that its firms in their isolated office parks had lost the edge that comes from urban density.

Luckily, Boston was generating plenty of new technologies to offset the demise of the computer industry. Like New York, Boston has long been an

innovator in financial services, establishing the first business trusts in 1827 and the first investment trusts, or closed-end mutual funds, as early as the 1890s. The most successful of all the Boston funds, Fidelity Investments, was long led by Edward C. Johnson II, a bow-tied product of Exeter, Harvard College, and Harvard Law School. His vision for Fidelity included risky investments, selling funds to a mass market, and above all, making a fetish out of serious stock research, all of which have become hallmarks of America's finance industry.

Boston also saw the birth of management consulting in 1886 when an MIT chemist, Arthur D. Little, started his own firm to do freelance scientific research. Over the past 120 years, the firm can boast of many innovations, from high-altitude oxygen masks to computerized technologies for inventory control and American Airlines' pioneering SABRE reservation system. Even more important, Arthur D. Little was a training ground for smart people like Jack Treynor and Fischer Black, and it created spin-offs, like the Boston Consulting Group, which then spawned its own spin-offs like Bain and Company.

The Boston region has long been a hotbed of biomedical research. Harvard Medical School teachers were performing autopsies in a small chapel in Harvard Yard, where I often teach, before America had a constitution. But treating a city's own citizens generally can't generate enough revenue to fund future innovations, so for medical knowledge to create urban success, the city had to figure out ways to "export" health. Boston exports its skills by drawing non-Bostonians to its hospitals for treatment, just as non-Bostonians flock to the region's universities. Boston also exports its biomedical expertise more directly, by creating and selling new health technologies.

Boston Scientific, which started in Watertown, was an early pioneer in tiny medical devices, and the region has since spawned a slew of biomedical research companies, like Biogen and Genzyme, which take advantage of the area's human capital. Foreign firms, like Novartis, have also come to Cambridge for its skilled workers. Novartis's Cambridge office is located in the former home of the New England Confectionary Company, maker of Necco Wafers. There was a time when urban economists thought that Cambridge could never survive the decline of its candy industry. They underestimated the ability of skilled cities to reinvent themselves.

teenth century, Empress Maria Theresa initiated a series of school reforms (paid for with confiscated Jesuit wealth) that reinvigorated education around Milan and the nearby University of Pavia, which then trained two mathematicians who went on to lead education in Italy at the time of reunification. They then founded advanced schools, such as Milan's Polytechnic Institute, or Politecnico, and the academy that would later become the University of Milan. The Politecnico was worldly, modeled on German industrial schools, and became an incubator for entrepreneurs, like the rubber baron Giovanni Battista Pirelli.

Pirelli was among the first graduates of the Politecnico. His stellar performance won him a 3,000 lire prize, which paid for a tour of Europe to learn about a "new or scarcely diffused industry in Italy"—the use of rubber. Pirelli visited European factories, inspecting machinery and learning modern management practices, using his education to import ideas into Italy. Today Pirelli may be best known for its tires, but the company was also an information technology pioneer. Before it made its first tire, Pirelli was making telegraph cables insulated with rubber, starting in 1879. This high-tech business induced Pirelli to set up its own research team, populated with engineers hired from the Politecnico.

While Michelin linked itself with good food, Pirelli established a link between its products and design. Lots of tire companies give away cheesecake calendars, but Pirelli's pulchritudinous calendar aspires to be art. Goodyear's corporate headquarters in Akron is a nondescript office building. Pirelli's Milan headquarters is an architectural icon, built in the 1950s by Gio Ponti, another graduate of the Politecnico. Ponti founded and edited two design magazines, one of which (*Domus*) is still in print. He was a professor at the Politecnico who designed ceramics, bottles, and chairs, including the featherweight modernist classic, the Super Leggera. Ponti reminds us that education occasionally improves aesthetics, which proved to be another element in Milanese endurance.

Industry enabled Italy and Milan to come back after World War II, but the same forces of globalization and technological change that caused manufacturing to decline in the American Rust Belt also made Milan's population plummet after 1970. Yet as in Boston and Minneapolis, human capital enabled Milan to reinvent itself for our age, when ideas are more valuable than machin-

Many might also have written off Minneapolis, which lost 30 percent of its population between 1950 and 1980 and hardly seemed like a natural candidate for urban renaissance. The city's winters make Boston seem balmy, and the advantages that once came from its riverside location became largely irrelevant after World War II. But Minneapolis, like Boston and New York, has come back. In 2009, per capita personal income in the Minneapolis metropolitan area was \$45,750, making it the highest-earning metropolitan area in the Midwest and the twenty-fifth highest in the country.

The secret of the city's success is education: 47.4 percent of the city's adults have a college degree, and 37.5 percent of the Minneapolis area's adults have a college degree, making it the seventh-best-educated metropolitan area with more than a million people in America. The Scandinavian Lutherans who originally settled the region brought with them a belief in learning, but most of all, Minneapolis's highly educated population reflects its land-grant college, the University of Minnesota. The city's most striking economic success stories have some link to that school.

Medtronic, which earns \$14.6 billion in annual revenues and has thirty-eight thousand employees, was formed in 1949 when a graduate student in electrical engineering at the University of Minnesota partnered with his brother-in-law to make medical devices in a garage. The company's early success reflected, in part, connections with people like Walt Lillehei, a University of Minnesota professor and a pioneer in open-heart surgery, who saw the need for a small, battery-powered pacemaker and turned to Medtronic to whip one up. Minneapolis's megaretailer, Target, owes much of its success to Bob Ulrich, another University of Minnesota graduate, who helped create the chain's blend of logistics and style. Target's slightly more highbrow alternative to big-box competitors like Walmart and Kmart seems natural for the sophisticated Ulrich, a collector of African art who has spent a fortune endowing a Museum of Musical Instruments.

Milan is another former manufacturing giant that has come roaring back in the postindustrial age, and education has been part of its success. In the eight-

ery. The city's population increased between 2000 and 2008, and as of 2008, Milan's per capita productivity is the highest of any geographic area in Italy, a solid 54 percent above the nation as a whole. Today, three quarters of Milan's workers are in services, and finance is a major occupation, just as it is in New York and London. Also like those cities, Milan is a hub of fashion.

Miuuccia Prada and Patrizio Bertelli are a well-educated couple. She holds a PhD from the University of Milan; her husband studied engineering at the University of Bologna, two hours away from Milan. Bertelli brings an engineer's rigor to the management and marketing of the brand. Prada's fabrics, like the waterproofed nylon called Pocone, are often cutting-edge, and Prada stores were early adopters of radio frequency identification, which provides instantaneous inventory information. When a handbag is scanned by a high-tech wand, images of the bag start streaming from abundant screens. While Prada and Bertelli surely learned more from doing than from studying, their success and style still bear the imprint of formal education.

The Versaces represent the opposite side of human capital in Milanese fashion. While Gianni Versace did study architecture, he left school at twenty-one, and much of his learning seems to have come from working in his mother's dress shop. His style was not the international cool of Prada and Armani, but a local lushness, borrowed heavily from Italy's Baroque past. The head of Medusa, which adorns so many Versace products, was also used by the Milanese armorer Filippo Negroli for his emperor's parade shield. European human capital reflects millennia of culture, and that can also provide the education that creates comparative advantage for both a company and a city. In Milan's case, all that designing talent does more than make the city a dynamic exporter of clothes and handbags; it also makes the city more fun and exciting to inhabit, a place to consume as well as produce, and that is another road to urban success.

The Consumer City: Vancouver

Vancouver also attracts talent by being one of the world's more pleasant places to live. A quarter of the Vancouver area's residents over the age of fifteen have at least a college degree, as opposed to 18 percent in Canada as a whole. It

regularly lands at the very top of global quality-of-life rankings, and that helps it attract thousands of talented migrants each year.

Of course, Vancouver enjoys natural advantages that are denied to Boston or Minneapolis or, for that matter, Singapore. Its Januaries average 37 degrees, far warmer than Boston or Minneapolis, and its Julys average 63 degrees, which is cooler than the other two cities. Add in Vancouver's abundant coastline, beautiful mountains, and lovely countryside, and nobody could deny that the city has been extravagantly blessed by nature. But Vancouver has taken canny advantage of those blessings.

Vancouver was a logging town with a natural harbor that became important as the western terminus of the Canadian Pacific Railway's intercontinental line in 1886. A fire that wiped away the town's older structures that year gave Vancouver, and its largest property owner, the Canadian Pacific Railway, the opportunity to start fresh with good sewers, trolley cars, and sturdy, safer new buildings. The City Council requested that a thousand acres, then part of a military base, be set aside as a park, which remains one of the city's many pleasant green spaces. In 1915, the University of British Columbia was founded there, giving the city a source of well-educated citizens.

Vancouver's trajectory during the twentieth century followed a familiar pattern. Its population stagnated during the Great Depression and then fell during the heyday of suburbanization between the 1960s and the early 1980s. But since then, the city has expanded from 415,000 to 610,000 people, an increase of almost 50 percent. Vancouver's boom has been fueled by a passionate attention to quality of life, a willingness to build up, and a flow of talented Asian immigrants.

In many areas, Vancouver is typical of prosperous non-American cities, with clean streets, a generous safety net, and high taxes. Vancouver's more distinctive features are its physical bones and the remarkably diverse set of people who make its structures come alive. There is even an urban planning philosophy, called Vancouverism, which is defined by open spaces, tall slender skyscrapers that afford ample views, and plenty of public transportation.

Arthur Erickson is often called the father of Vancouverism. He was born in Vancouver but left to fight with the British army in World War II. After the war, inspired by Frank Lloyd Wright, he studied architecture at McGill Uni-

versity in Montreal and earned a fellowship to study buildings around the world. After his wanderings, he returned to Vancouver, started teaching at the University of British Columbia, and began an architectural partnership with the well-connected Geoffrey Massey, whose father, Raymond, was a famous Canadian actor and whose uncle was Canada's governor general.

As early as 1955, when Vancouver was still a modest town on Canada's edge, Erickson had a vision of a soaring skyline. His Plan 56 remains a stunning vision of a high-rise city, where buildings are not massed together as in New York, but elegantly arranged in an undulating cascade that complements the city's natural beauty. Erickson did more than just dream. In 1963, he won the competition to build British Columbia's Simon Fraser University—now one of Canada's best. Two years later, Erickson got the chance to actually change Vancouver's skyline when he was picked by forestry giant MacMillan Bloedel to build its new office building, a twenty-seven-story, half-million-square-foot “concrete waffle,” which has since become an architectural icon. In the 1970s, Erickson designed Robson Square, the 1.3-million-square-foot civic center that brought together law courts, UBC's downtown campus, and plenty of open space.

Erickson became a national icon, described by the *Toronto Globe and Mail* in his obituary as “the greatest architect we ever produced.” Following his vision, Vancouver has built up and generally built well. A Chinese immigrant, James Cheng, who came to Vancouver to learn from Erickson, has designed more than twenty structures with more than twenty stories in Vancouver since 1995. Cheng is known for his combination of green glass and concrete, which has helped give Vancouver its distinctive look. Good planning has meant that many of these structures, like Cheng's Living Shangri-La, Vancouver's tallest building, are mixed-use, which helps to cut commutes and ensure that the city's downtown doesn't become deserted at night. Good planning also places these buildings far enough apart to let in light and views and provide plenty of open spaces.

And good urban planning, along with Canada's eminently sensible immigration policy, has helped Vancouver attract human capital. A full 40 percent of the city's population is foreign-born, and a quarter of its citizens were born in Asia. Moreover, its immigrants are disproportionately skilled, like those in Canada as a whole. More than half of the people who came to the country

in 2006 have a college degree, making them far better educated than native Canadians. Also, nearly half of the Canadians with a PhD were born somewhere else.

Canada has an abundance of land, and fertility levels among its native-born people are well below replacement rates. The more than two hundred thousand immigrants who arrive during a typical year help keep the country growing. Like the United States, Canada gives some preference to relatives of the native-born, but the bulk of visas are granted to so-called independent immigrants, who are admitted based on a points system that, according to the Canadian government, rewards “education, language ability, employment experience, age, arranged employment, and adaptability.” Canada has proven particularly attractive to Asians, like the many Hong Kong residents who fled that city before it became part of the People's Republic of China. Vancouver has drawn those immigrants because it is a tolerant city on the Pacific Ocean with well-established Asian communities. A fifth of its residents are ethnic Chinese—only slightly less than the 26 percent who describe themselves as being of English extraction.

Those immigrants have helped make the city culturally interesting and economically vital. James Cheng is responsible for much of the city's skyline. Members of the Chan family, also from Hong Kong, rank among Vancouver's most generous philanthropists. From restaurants to skyscrapers to investment houses, Vancouver's immigrants have helped turn a picturesque logging town into a global city.

The Growing City: Chicago and Atlanta

One of the morals of chapter 2 of this book, on urban failure, was that building in declining cities with little housing demand does no good and that it was a fallacy to think that soaring skylines could bring back declining cities. One of the morals of chapter 7, on sprawl, was that Houston has attracted so many Americans with the abundance of affordable housing that results from unrestricted building in places with sufficient demand. Building can allow a place to expand and attract exciting people not just in the Sunbelt sprawl, but also in older cities, if they have enough else going for them.

When I moved to the South Side of Chicago in 1988, the city was splendid

but grim. Great stone structures, like the Beaux Arts-style Museum of Science and Industry, which greets drivers on their way to the University of Chicago's campus, served as reminders of a more glorious urban past. Neighborhoods near the university had grand mansions, like those that once housed Chicago's beef magnates and Muhammad Ali, but they were selling for a fraction of construction cost because of the area's high crime rate.

Chicago lost almost 18 percent of its population between 1970 and 1990, a lot less than Cleveland or Detroit but far more than New York or Boston. In the twelve years after the death of longtime mayor Richard J. Daley in 1976, Chicago had five mayors, none of whom was able to consolidate power or reduce the crime rate. But since 1990, Chicago has been one of the few large Midwestern cities that has grown, despite the facts that its population is not as well educated as that of Minneapolis or Boston and that its weather can be brutal.

Chicago succeeds by offering the benefits of density while still remaining affordable and pleasant. The city's economy depends on information-intensive industries, like finance and business services, that seem to particularly value density. Financial entrepreneurs, like the billionaire hedge-fund manager Kenneth Griffin, choose Chicago because it has the size and the well-educated workforce to provide the professionals and services that their organizations need, while still maintaining a strong quality of life and a family-friendly, wholesome Midwestern feel, as compared with Manhattan.

The city's longtime mayor, Richard M. Daley (son of the other longtime Mayor Daley), has proven himself to be one of America's most effective urban leaders. He knows that the city can succeed only by providing a business-friendly environment and a decent quality of life. When he took office, he made a fetish of tree planting. He built the city's Millennium Park by generating substantial private donations. He took over and improved the public schools. He has also fervently supported construction. Numerous new buildings have made Chicago a far more affordable alternative to New York or San Francisco.

Chicago's construction has given it plenty of high-quality, attractive real estate that appeals to the type of people who work for Ken Griffin. Between 2002 and 2008, Chicago issued 68,000 housing permits, equal to about 6 percent of its year-2000 housing stock. In the same period, Boston issued 8,500 housing permits, equal to only 3.3 percent of its 2000 housing stock. Chicago

issued more than three times as many housing permits as San Jose, California, a city that is almost as large and far less dense. Among Chicagoans, 10.8 percent live in housing built since 1990, which is significantly higher than the 7.6 percent figure for New Yorkers or the 8.3 percent figure for Bostonians. Moreover, Chicago has allowed plenty of building along its long, beautiful lakefront, while New York has decided to "preserve" almost all of the best blocks facing Central Park.

Chicago's real estate is both newer and cheaper than either Boston's or New York's. Census data shows that median rents are 30 percent higher in Boston than in Chicago, and housing prices are about 39 percent higher. According to the National Association of Realtors, the median sales price of a condominium in the Chicago metropolitan area in the second quarter of 2010 was \$186,000, as opposed to \$290,000 in the Boston area and \$405,000 in the San Francisco area. In downtown Chicago, \$650,000 can get you a three-bedroom condominium with 1,650 square feet in a new glassy tower. An equivalent unit in New York City would cost at least twice as much.

Chicago also builds plenty of offices—almost 40 million new square feet of office space was built in the metropolitan area between 1990 and 2009. That new space keeps the cost of doing business down. Office rents in Chicago have, for many years, been about 30 percent cheaper than rents in Boston or San Francisco.

In other cities, like Boston and San Jose, preservationists and fans of lower density have pushed city leaders to restrict new construction, but Daley lets them build. Why? All those cranes create structures that house highly skilled workers. Lower housing costs allow employers to pay lower wages, which helps keep Chicago economically competitive. The mayor knows that and also knows that Chicago won't survive unless its costs are lower than those in coastal America. Building can't save places like Buffalo or Detroit, where demand is just too low, but in places that are more attractive, reducing the barriers to new construction can provide a major comparative advantage.

Unfettered construction has also been a critical part of the success of many Sunbelt cities, like Houston and Miami, but only one of those cities has managed to both expand rapidly and become highly educated. The Atlanta metropolitan area added 1.12 million people between 2000 and 2008, more than any area in the United States except Dallas. All that growth would have been

impossible without plenty of construction, both in the sprawling suburbs and in glossy downtown skyscrapers that house offices and condominiums. Atlanta's office space has grown by more than 50 percent since 1990, and as a result, its business space is typically 20 percent cheaper than even Chicago's.

As Atlanta has grown, it has also become remarkably well educated. The central city has about the same share of adults with college degrees as Minneapolis and more than Boston, the self-proclaimed Athens of America. More than 47 percent of Fulton County's adults have a bachelor's degree, making them better educated than those in Westchester County, New York, or Fairfield County, Connecticut, or Santa Clara County, California, and almost as well educated as adults in Middlesex County, Massachusetts. Atlanta's education reflects history, proeducation policies, and also housing.

Atlanta has a wealth of older colleges and universities. It was a center for the Union Army after the Civil War, and its remarkable roster of historically black colleges generally formed during that era. Emory and Georgia Tech, the latter explicitly modeled on Massachusetts schools, also opened their doors in the decades after the Civil War.

More recently, Georgia decided to use its state lottery earnings to fund the Hope Scholarship program, which provides generous financial aid to any academically successful student who attends college in state. As a means of righting social inequities, the policy is a flop, for its largesse flows disproportionately to the prosperous. But as a means of attracting talented parents who care about educating their children, and as a tool for keeping talented scholars in state, the program is clearly a success.

Atlanta, like Houston, has a powerful business community that has long pushed the region's growth. That community sees the value of education and the value of building up. As a result, Atlanta offers educated people remarkably cheap housing, which has helped attract more educated people to an already highly educated metropolis. Between 2000 and 2008, Fulton County's share of college graduates has grown two thirds faster than that of the country at large.

Too Much of a Good Thing in Dubai

Dubai never had the chance to be an imperial city, but it seems to have tried almost every other strategy we've discussed here. Historically, Dubai suc-

ceeded, like Hong Kong or Singapore, by having a good location and good economic institutions. Dubai came under British protection in 1892, and early in the twentieth century, the city's proximity to India made it a natural connector between the subcontinent and the Middle East. Dubai has some oil itself, but the city's real growth is due to its port, which is a conduit for the vast flow of black gold from other countries, like Saudi Arabia.

Dubai's ports, however, handle more than just oil. The city competes effectively for international trade by offering good, modern infrastructure and business-friendly institutions. Just as Hong Kong thrived by being an oasis of economic freedom next to once highly restrictive Communist China, Dubai succeeds by offering better economic institutions than its neighbors. The Jebel Ali Free Zone attracts businesses by giving them freedom from both taxes and regulations. Dubai isn't just more business-friendly than its Middle Eastern neighbors; its good legal institutions and excellent infrastructure also make it an easier place to do business than overregulated India, making it a natural commercial hub for the entire region. In Mumbai, you can meet plenty of businesspeople who work in Dubai but come back home on weekends.

While those Indians see Dubai as a place to work, not play, Dubai's leadership has decided to transform it from an oil-shipping port into a consumer city, which attracts financiers and entrepreneurs. The two urban functions are intimately linked. Dubai can succeed as a business center if it convinces people throughout the Middle East that they'd rather be there than somewhere else, like Kuwait or Cairo. If Dubai becomes the most exciting place to live in the Middle East, the thinking goes, it will also attract businessmen who'll make sure that the city is more than a mere tourist destination.

Just as Las Vegas grew by offering pleasures outlawed in more restrictive states, Dubai could grow because it's relatively free from the religious restrictions that bind so much of the region. Sheikh Mohammed's personal faith doesn't seem to prevent him from building a city that is almost as free-spirited as any wandering businessperson might want.

Dubai could have easily succeeded as a midsize center of fun and commerce, but Sheikh Mohammed's ambitions go far beyond that. In 2008, Dubai was one of the largest construction sites on earth. The Burj Al Arab, built on an artificial island, was the tallest hotel in the world when it was built, at 1,027 feet. It has only 202 oversize suites—the smallest of which is eighteen hundred square feet.

A 2,684-foot mixed-use building opened in 2010; it is now the tallest man-made structure in the world. The Dubai Mall contains 5.9 million square feet of internal space, 12 million in all, making it one of the biggest in the world. Sheikh Mohammed had envisioned an artificial three-hundred-island archipelago, modestly called the World, and a 230-building central business district called Business Bay, and an entertainment complex, Dubailand, to be larger than Disney World.

In principle, the combination of construction and quality of life is sensible, but the extraordinary extent of the sheikh's building far exceeds the level needed to satisfy current demand for his city. Mayor Daley is only allowing private developers to build; construction in Chicago reflects their independent assessments that prices there will cover their costs. Sheikh Mohammed is investing huge amounts of public funds, so Dubai's construction reflects to a large extent his own judgment that a vastly larger city will thrive. But the market seems to have found his exuberance somewhat irrational, and Dubai defaulted on its loans in 2009. Only with the financial help of neighboring Abu Dhabi was Dubai spared the pain of an even more dramatic failure.

The sheikh's general vision of history is correct. Cities like Dubai must move beyond a purely economic model of success by embracing quality of life. Cities must build to succeed. But that doesn't mean that any place can become New York or Shanghai. City builders must be visionaries, but also realists.

CONCLUSION:

Flat World, Tall City

There is little that you own or use or know that wasn't created by someone else. Humans are an intensely social species that excels, like ants or gibbons, in producing things together. Just as ant colonies do things that are far beyond the abilities of isolated insects, cities achieve much more than isolated humans. Cities enable collaboration, especially the joint production of knowledge that is mankind's most important creation. Ideas flow readily from person to person in the dense corridors of Bangalore and London, and people are willing to put up with high urban prices just to be around talented people, some of whose knowledge will rub off.

Rousseau famously wrote, "Cities are the abyss of the human species," but he had things completely backward. Cities enable the collaboration that makes humanity shine most brightly. Because humans learn so much from other humans, we learn more when there are more people around us. Urban density creates a constant flow of new information that comes from observing others' successes and failures. In a big city, people can choose peers who share their interests, just as Monet and Cézanne found each other in nineteenth-century Paris, or Belushi and Aykroyd found each other in twentieth-century Chicago. Cities make it easier to watch and listen and learn. Because the essential characteristic of humanity is our ability to learn from each other, cities make us more human.

No matter how mundane a city's origins, urban concentrations can have magical consequences. Roman soldiers settled on an island in the Seine because it was a good spot to defend themselves against unfriendly Gauls. From that humble start, over the past two thousand years, Parisians have produced