



CORRIDORS AND TECH REGIONS: INTERNATIONAL CASE STUDIES



NEW YORK CITY METRO AREA

NEW YORK CITY METRO AREA: GLOBAL SERVICES AND TECH CENTRE PIONEERING NEW DEVOLVED APPROACHES TO ECONOMIC DEVELOPMENT

The New York Metropolitan Area is the most populous urban agglomeration and largest economy in the United States, with 20.1 million residents in 2014, accounting for 1 in 16 Americans. The metropolitan area includes New York City; Long Island and the Mid- and Lower Hudson Valley; the five largest cities in New Jersey (Newark, Jersey City, Paterson, Elizabeth, and Edison) and their vicinities; six of the seven largest cities in Connecticut (Bridgeport, New Haven, Stamford, Waterbury, Norwalk, and Danbury) and their vicinities; and five counties in north eastern Pennsylvania.

With an economic output worth \$1.56 trillion, the New York regional economy is equivalent to the 12th largest economy in the world. Leading industries in the area include finance, international trade, new and traditional media, real estate, education, fashion and entertainment, tourism, biotechnology, and manufacturing.

New York Metropolitan Area is now a leading global region for ICT & Digital and other tech industries. 'Silicon Alley' is one of the country's largest technology industry hubs, including internet, telecommunications, and biotechnology.

Combined strong state strategic planning, with a devolved approach to economic development. In recent years, New York State has pioneered a new approach to economic development by creating regional economic development councils – a community-based,

bottom up approach, which enables ten regions within the state to develop long-term strategic plans for economic growth based on their unique assets and market opportunities.

The wider New York Metro Area has the largest bioscience workforce in the USA – employing approximately 565,000 people in New York City. New York has the most post-graduate life sciences degrees awarded annually in the USA and its institutions also create more biotechnology-related patents than any other metropolitan area in the USA. 60 per cent of the USA pharmaceuticals industry is located in the immediate New York City vicinity.

Extensive public transport network, with lowest rates of car ownership in the USA. The transportation system of New York City is complex. It includes some of the largest subway and airport systems in the world; the world's first mechanically ventilated vehicular tunnel; and an aerial tramway.

The challenges of growth and success include high costs, lack of workforce availability, coupled with a high incidence of poverty and inequality. In recent years, policy responses have aimed to better utilise the existing workforce and improve the productivity of local businesses.



NEW YORK CITY METRO AREA

INTRODUCTION

The New York Metropolitan Area is the most populous urban agglomeration and largest economy in the United States. While the area's most important economic asset lies in its role as the headquarters for the global financial industry, its economy is diversifying with strong growth in technology/information sector. In recent years, New York State has pioneered a new approach to economic development by creating regional economic development councils – a community-based, bottom up approach, which enables ten regions within the state to develop long-term strategic plans for economic growth based on their unique assets and market opportunities.

ABOUT THE AREA

With 20.1 million residents in 2014, which accounted for 1 in 16 Americans the New York Metropolitan Area is one of the most populous urban agglomerations in the world and by far the most populous in the United States. Its population size is approximately 50 per cent large than the second largest metropolitan area in the USA, Los Angeles. The metropolitan area includes New York City; Long Island and the Mid- and Lower Hudson Valley; the five largest cities in New Jersey (Newark, Jersey City, Paterson, Elizabeth, and Edison) and their vicinities; six of the seven largest cities in Connecticut (Bridgeport, New Haven, Stamford, Waterbury, Norwalk, and Danbury) and their vicinities; and five counties in north eastern Pennsylvania. New York is the dominant city centre for the region, providing many of the high-end services.

New York's early success was driven by its emergence as the nation's premier port, which attracted manufacturing and services to cater to mercantile firms and to take advantage of their low shipping costs. New York's growth in the early nineteenth century was driven by the rise of manufacturing, which itself depended on New York's primacy as a port.

In the mid-twentieth century, almost all of America's biggest cities declined due to a large number of technological and transportation changes, which encouraged and enabled people to move west and south, and from city centres to outlying areas. Declining transportation costs also meant that





manufacturing no longer needed to cluster around a port or a train station. Eight of the ten largest USA cities in 1930 now have smaller populations, with New York and Los Angeles being the exceptions. This is because, over the past eighty years, New York has reinvented itself as a service city increasingly oriented around finance, business services and corporate management.

THE ECONOMY AND RATIONALE FOR SPATIAL INTEGRATION

With an economic output worth \$1.56 trillion, the New York regional economy is the largest in the USA and one of the most important in the world. In 2014, Metro New York produced \$1.56 trillion in Gross Metropolitan Product (GMP) – the highest in the USA and the same as Australia – making it equivalent to the 12th largest economy in the world. In 2012, Metro New York was home to seven of the 25 wealthiest counties in the USA by median household income, and, in 2014, was home to eight of the top ten zip codes in the USA by median housing price, with six in Manhattan alone.

According to A.T. Kearney's 2014 Global Cities Index, New York retained its top position as the world's most globally-engaged city, based on 26 metrics of business activity, human capital, information exchange, cultural experience and political engagement. The 'Hotspots 2025' report, by the Economist, also ranks New York as the world's most competitive city today and predicts that it will remain so in 2025. It topped the ranking in terms of financial maturity and was among the most competitive on institutional character (2nd) and economic strength (3rd).

Leading industries in the area include finance, international trade, new and traditional media, real estate, education, fashion and entertainment, tourism, biotechnology, and manufacturing. The finance industry in New York City, known as 'Wall Street', is a leading global financial centre and houses the New York Stock Exchange and NASDAQ. The region is also home to one of the largest trading industries in the country at the Port of New York and New Jersey. This port includes a large estuary, regional airports, and a plethora of rail and road networks. 'Silicon Alley' is one of the country's largest technology industry hubs, including internet, telecommunications, and biotechnology.

The region's higher education network comprises hundreds of colleges and universities, including Princeton University, Columbia University, Yale University, New York University, and Rockefeller University, which have been ranked among the top 35 in the world.

New York State is home to more Fortune 500¹ companies than any other state in the USA (55 in 2015). As below, these are dominated by financial services and insurance companies and most (48) are located within New York City itself.

¹ The Fortune 500 is an annual list compiled and published by Fortune magazine that ranks 500 of the largest USA corporations by total revenue for their respective fiscal years.



Fortune 500 Companies in New York State 2015

Rank	Company	Sector	Rank	Company	Sector
200	Omnicom Group	Advertising	24	IBM	Information Technology
372	Interpublic Group	Advertising	39	MetLife	Insurance
252	L-3 Communications	Aerospace & Defence	46	AIG	Insurance
454	JetBlue Airways	Air Transport	80	New York Life Insurance	Insurance
97	Twenty-First Century Fox	Entertainment	92	TIAA-CREF	Insurance
104	Time Warner	Entertainment	112	Travelers Cos.	Insurance
212	CBS	Entertainment	211	Loews	Insurance
222	Viacom	Entertainment	254	Guardian Life Ins. Co. of America	Insurance
351	PVH	Fashion	268	Voya Financial	Insurance
374	Ralph Lauren	Fashion	285	Assurant	Insurance
21	JP Morgan Chase	Financial Services	499	Alleghany	Insurance
28	Citigroup	Financial Services	297	Corning	Manufacturing
76	Goldman Sachs Group	Financial Services	125	Alcoa	Metals
82	Morgan Stanley	Financial Services	141	Hess	Petroleum Refining
88	American Express	Financial Services	155	Icahn Enterprises	Petroleum Refining
93	INTL FCStone	Financial Services	56	Pfizer	Pharmaceuticals
189	Bank of New York Mellon Corp.	Financial Services	195	Bristol-Myers Squibb	Pharmaceuticals
235	Marsh & McLennan	Financial Services	331	News Corp.	Publishing & Printing
267	BlackRock	Financial Services	384	Foot Locker	Retail
308	MasterCard	Financial Services	423	Barnes & Noble	Retail
356	KKR	Financial Services	15	Verizon Communications	Telecommunications
373	Blackstone Group	Financial Services	130	Time Warner Cable	Telecommunications
500	McGraw Hill Financial	Financial Services	419	Cablevision Systems	Telecommunications
44	PepsiCo	Food Consumer Products	102	Philip Morris International	Tobacco
244	Leucadia National	Holding Company	236	Consolidated Edison	Utilities
179	Colgate-Palmolive	Household and Personal Products	287	Henry Schein	Wholesalers (Health Care)
271	Estee Lauder	Household and Personal Products			
322	Avon Products	Household and Personal Products			
447	HRG Group	Household and Personal Products			



There are also 12 other Fortune 500 companies within the region outside of New York State.

Rank	Company	Sector	Place
249	Praxair	Chemicals	Danbury, Connecticut
284	Air Products & Chemicals	Chemicals	Allentown, Pennsylvania
421	EMCOR Group	Construction & Building Services	Norwalk, Connecticut
486	Harman International Industries	Electronics	Stamford, Connecticut
442	Starwood Hotels & Resorts	Hotels	Stamford, Connecticut
461	United Rentals	Industrial Distribution & Rental	Stamford, Connecticut
143	Xerox	Information Technology	Norwalk, Connecticut
55	Prudential Financial	Insurance	Newark, New Jersey
339	Priceline Group	Internet Services	Norwalk, Connecticut
317	Charter Communications	Telecommunications	Stamford, Connecticut
274	Public Service Enterprise Group	Utilities	Newark, New Jersey
257	PPL	Utilities	Allentown, Pennsylvania

New York also has a large number of foreign corporations with one out of ten private sector jobs held within foreign companies. Since 2000, China has been New York's leading growth market for exports. Metro New York is home to more than half of the 32 largest Chinese companies with offices in the USA. Many have chosen to open headquarters in New York in anticipation of eventual listing on the respective New York stock exchanges and entering USA capital markets.

KEY INDUSTRIES AND THE KNOWLEDGE-BASED ECONOMY

Financial Services: New York City's most important economic sector lies in its role as the headquarters for the USA financial industry. The financial services industry is the largest contributor to New York City's economic output and currently generates 20 per cent of New York's Gross City Product – roughly double the contribution of the next largest industries. Located in the city are 20 of the top 25 foreign branches of international banks, eight of the world's top 10 investment securities firms, 219 international banks representing every major country in the world, and five of the country's 10 largest insurance companies. The city's securities industry forms the largest segment of the city's financial sector. New York is home to the world's two largest stock exchanges (the New York Stock Exchange and NASDAQ), as measured both by overall average daily trading volume and by total market capitalisation of their listed companies. However, many Wall Street firms have added or moved auxiliary financial or technical operations into Jersey City, to take advantage of New Jersey's relatively lower commercial real estate and rental prices, while offering continued geographic proximity to Manhattan's financial industry ecosystem.

Technology: 'Silicon Alley', centred in Manhattan, is home to many of the region's high technology industries, including the Internet, new media, financial technology, telecommunications, digital media, software development, biotechnology, game design, and other fields within information technology. High technology start-up companies and employment are growing in New York City and the region, bolstered by the city's position in North America as the leading Internet hub and telecommunications centre, including its vicinity to



several transatlantic fibre optic trunk lines, New York's intellectual capital, and its extensive outdoor wireless connectivity. The New York City tech/information sector is diverse and includes:

- Firms delivering their essential information content and services on the web (including e-commerce and fashion start-ups; social media start-ups; advertising- and search-related businesses; information and news creation and distribution operations; and New York operations of large companies such as Google, Facebook, Amazon, and Twitter);
- Industries focusing on the creation and distribution of visual and sound content, particularly, but not restricted to, entertainment;
- Developers – app developers, web developers, software developers, including big software companies such as Microsoft and Oracle;
- Infrastructure companies such as AT&T, Verizon, and other telecom and cloud providers;
- Manufacturing and associated scientific, engineering, and industrial design services.

Healthcare and Biomedical: The wider New York Metro Area has the largest bioscience workforce in the USA (more than Boston and Los Angeles combined). The healthcare industry employs approximately 565,000 people in New York City. Research and medical services are important sub-sectors. New York has the most post-graduate life sciences degrees awarded annually in the USA and receives the second-highest amount of annual funding from the National Institutes of Health among all USA cities, after Boston. New York institutions also create more biotechnology-related patents than any other metropolitan area in the USA. New York is headquarters to four major pharmaceutical companies and over 120 bioscience companies, while 60 per cent of the USA pharmaceuticals industry is located in the immediate New York City vicinity. Major publicly traded biopharma companies include Bristol Myers Squibb, ImClone Systems, OSI Pharmaceuticals, Pfizer, Regeneron, CuraGen, and Alexion Pharmaceuticals. There are two bioscience incubators in New York City (Audubon Center and SUNY Downstate's Advanced Biotechnology Incubator) and plans to develop several major science parks throughout the city.

Creative Industries: New York is by far the most important centre for American mass media, journalism and publishing. Three of the Big Four music recording companies have their headquarters in the city, the city's television and film industry is the second largest in the country after Hollywood, one-third of all independent films are produced in New York, and more than 200 newspapers and 350 consumer magazines have an office in the city. New York is also home to more headquarters of fashion designers and fashion retailers than any other city in the US.

There are also concentrations of high-tech industries within the region outside of New York City

Long Island: Located within New York State, Long Island has a concentration of aviation and defence electronics companies. Principal industries include Aerospace, Electronics, Biotechnology, Medical Imaging and Health Care Systems, Computer Technology and Financial Services. Historically an industrial area on the western Queens waterfront, Long Island City has large spaces and lower rents than Manhattan, making it attractive for start-ups and technology manufacturing companies.



Hudson Valley: Over the last decade, the Hudson Valley has become less dependent on New York City's economy as Westchester has developed into its own business centre and small businesses have flourished. Westchester County has six key economic clusters, including Biotechnology, Education, Headquarters & Corporate Services, Information Technology, Manufacturing and Tourism. Nearly 20 per cent of the biotechnology workforce in New York is in Westchester County, the largest concentration in the state.

New Jersey: The state is noted for its output of chemicals and pharmaceuticals, machinery, and other products, including electronic equipment, printed materials, and processed foods. New Jersey has been a leader in industrial research and development since the establishment in 1876 of Thomas Edison's research facility in Menlo Park.

Connecticut: The state's principal industries produce jet engines and parts, electronics and electrical machinery, computer equipment, and helicopters. Much of Connecticut's manufacturing is for the military. Firearms and ammunition, first produced at the time of the American Revolution, are still made.

Northeastern Pennsylvania: Pennsylvania is ranked fourth in the nation in the production of renewable, notably solar, energy. The Lehigh Valley boasts one of the largest solar panel installations in Pennsylvania and is a leading producer of solar and other renewable energy in the region. The comparatively large solar industry in the Lehigh Valley is due mostly to a combination of federal, state and local incentive programs. The area has been selected as the headquarters or principal plant locations for major corporations such as Mack Trucks and Bethlehem Steel, as well as Fortune 500 companies Air Products and Chemicals, and PPL Corporation.

ENABLING ASSETS, INFRASTRUCTURE AND POLICIES

Enabling assets

Financial Services Sector: New York City is one of the world's most sophisticated and diverse financial centre, boasting the deepest capital pools, a large talent base of more than 300,000 financial service workers, and an administration that is committed to strengthening the city's financial base. When the multiplier impact on jobs and earnings is accounted for, the contribution of financial services to New York's economy is equivalent to 37 per cent of Gross City Product and one million New York City jobs. The financial services industry has a significant impact on creating new jobs in non-financial industries: the addition of 100 jobs in commercial banking, for example, results in a total of 354 new jobs within financial services as well as such industries as healthcare, hospitality, and retail trade. The commercial banking multiplier of 3.5 is about average for the industry. Most other sectors in the financial services industry have multipliers of between 2.0 and 4.0. The financial services industry also contributes about \$8 billion annually to the city in taxes – equivalent to the combined expense budgets of New York City's police, fire and sanitation departments.

New York's strengths as a financial centre are broad and rooted in historical, national and local factors.

- In terms of historical advantages, New York's large and diverse transaction flow emanated from its status as a major Atlantic seaport, which facilitated transactions with London and Europe. Until recently, it enjoyed a stable regulatory and legal environment that rewarded risk takers and promoted financial



innovation. This consistently attracted the very best financial talent from around the world to Wall Street.

- National advantage stems from the fact that the USA is home to the world's largest users of financial services, including both USA corporations and consumers. The New York Stock Exchange and NASDAQ still far outstrip the next three markets in dollar trading volume and are poised to further expand their dominance. Other advantages of a USA location include freely convertible currency, de facto global reserve currency, and a stable political system.
- At local level, New York offers proximity to the leaders of many of the world's top corporations. It has easy transportation links to Europe and Latin America. It also offers access to fast-growing technology markets and emerging industries. Most important, the city is home to the world's largest cluster of specialised financial services firms upon which high finance depends, as well as the top legal, accounting, management consulting and technology experts. This creates a 'network effect' which is virtually impossible for aspiring, less mature financial centres to replicate. New York is also a reservoir of highly specialised financial talent that can execute transactions with efficiency and expertise that is unique to New York. On the softer side, New York offers cultural and recreational amenities, high quality health services, and world class educational and research institutions that draw a diversity of talent from around the globe.

A Growing Technology Sector: The high-tech industry is creating well-paying jobs and diversifying the local economy, which is helping to reduce New York City's economic dependence on Wall Street. According to a report commissioned by Mayor Bloomberg², strong growth in the tech/information sector means that is now New York's second largest sector, surpassing private health care³. Between 2006 and 2014, high tech employment grew by 21 per cent in the city, compared to 12 per cent growth nationwide; and this strong growth in the city's tech/information sector is a key reason why New York City's share of the nation's private sector employment has now reached its highest level in 20 years.

There are now 262,000 workers in the New York tech/information sector, contributing almost \$30 billion annually in wages to the city economy. In 2012 alone, New York City's tech/information sector added almost 11,000 jobs and \$2 billion in additional wages. These gains more than compensated for the continuing shrinkage of the financial sector in 2012.

As the economy becomes more data-driven, technology innovation depends not just on engineering talent, but on expertise in areas such as design, commerce, content creation, and user interface. These needs play to the strength of New York, which has a critical mass both of large companies and creative workers.

Talent: The skilled and well-educated workforce of Metro New York has played a large role in enabling the region to withstand adverse economic shocks and adapt successfully to a services economy. In 2014, 38.0 per cent of adults aged 25 years and over held a bachelors or higher-level degree in Connecticut (ranked fifth of 51

² Mandel (2013), 'Building a Digital City: The Growth and Impact of New York City's Tech/Information Sector.'

³ The report has been viewed with some scepticism, e.g. due to its wide definition of high-tech jobs and lack of evidence of causal links between growth in the sector and Mayoral policies

<http://nymag.com/daily/intelligencer/2013/09/bloombergs-new-york-really-a-tech-town.html>



areas⁴), 37.4 per cent in New Jersey (ranked sixth), and 34.5 per cent in New York (ranked tenth) – all higher than the national average (30.1 per cent).

New York is a leading education hub with at least 63 institutes of higher learning. Three Ivy League universities (Columbia University in Manhattan, Princeton University in Princeton, New Jersey, and Yale University in New Haven, Connecticut) are located in the region and rank amongst the top four USA national universities. The region is also home to New York University and The Rockefeller University, both located in Manhattan. All five of these universities have been ranked amongst the top 35 universities in the world.

Venture Capital: With their proximity to Wall Street and a growing venture capital community, New York technology firms have access to diverse funding opportunities. In 2015, venture capital firms invested \$7.3 billion in companies in Metro New York – the second highest level after Silicon Valley (\$27.3 billion) and 12.4 per cent of all venture capital invested across the U.S.⁵ (up from 6.4 per cent in 1995). Since 2010, venture capital investment in the New York Metro Area has increased by 286 per cent – more than any other area in the USA.

The In-State Private Equity Program of the New York State Common Retirement Fund is also making investments through venture capital firms. This program invests in private equity funds that target technology-based start-ups and established businesses in the State seeking expansion capital. The program generates solid returns for the state pension fund and spurs private sector investments and jobs by investing in businesses that want to expand in the area. Since 2007, more than \$800 million has been invested in over 300 New York State companies.

Enabling infrastructure

The transportation system of New York City is complex. It includes some of the largest subway and airport systems in the world; the world's first mechanically ventilated vehicular tunnel; and an aerial tramway. New York City is distinguished from other USA cities for its low personal automobile ownership and its significant use of public transportation: about one in every three users of mass transit in the USA and two-thirds of the nation's rail riders live in New York City or its suburbs, while New York is the only city in the USA where over half of all households do not own a car.

Subway: The New York City Subway – operated by the Metropolitan Transportation Authority (MTA) – is the largest subway system in the world when measured by track mileage and the fourth-largest when measured by annual ridership. It operates 24-hours a day.

PATH: The Port Authority Trans-Hudson (PATH) is a rapid transit system that links Manhattan to New Jersey. It spans 13.8 miles of route mileage and operates 24 hours a day.

Commuter Rail: New York City's commuter rail system is the most extensive in the U.S., with about 250 stations and 20 rail lines serving more than 150 million commuters annually across the three states of New York, New

⁴ The 51 areas include all 50 states and the District of Columbia.

⁵ The MoneyTree report <https://www.pwcmoneytree.com/>



Jersey and Connecticut. The Metro Area is served by three commuter railroads operated by two agencies. The MTA operates the Long Island Rail Road on Long Island and the Metro-North Railroad in the Hudson Valley and Connecticut. New Jersey Transit operates the rail network on the New Jersey side of the Hudson River. These rail systems converge at the two busiest train stations in the U.S., Penn Station and Grand Central Terminal, both in Manhattan.





Intercity Rail: Intercity service is provided by Amtrak. Amtrak's Acela express train provides regular fast commuter service between major points along the east coast such as Washington, D.C., Boston, Baltimore, Philadelphia, New Haven, and Providence. Amtrak services are also available to points along the East Coast down to Florida, to points between New York and Chicago, including Pittsburgh and Cleveland, to New York State, including Albany, Rochester, Buffalo and Niagara Falls, and to Toronto and Montreal in Canada. New York City's Penn Station is the busiest Amtrak station in the USA by annual boardings.

Buses: New York City's public bus network is extensive. As of 2014, over 5,710 MTA Regional Bus Operations buses carried about 2.5 million daily passengers 24 hours a day on more than 238 local routes, 62 express routes, and 7 Select Bus Service routes, amounting to 793 million annual bus trips. Buses owned by MTA account for 80 per cent of the city's surface mass transit. New York City has the largest clean-air diesel-hybrid and compressed natural gas bus fleet in the USA.

Tram: The Roosevelt Island Tramway is an aerial commuter tram connecting Manhattan to Roosevelt Island.

Airports: Metro New York is served by three large airports in New York City, run by The Port Authority of New York and New Jersey. John F. Kennedy International Airport and Newark Liberty International Airport are large international airports while LaGuardia Airport is a busy domestic airport. There are also several small airports in the region.





Port: The Port of New York and New Jersey has historically been one of the most important ports in the U.S., and is now the third busiest in the USA behind Los Angeles and Long Beach, California in volume of cargo. The New York Harbor is also a major hub for passenger ships.

Ferries: Since the 1980s, ferry service on the Hudson River and East River has been restored and significantly expanded providing regular service to points in Manhattan. The terminals are run in public-private partnership with privately owned carriers. The busiest ferry in the USA is the Staten Island Ferry, which annually carries over 19 million passengers on the 5.2-mile route between St. George Ferry Terminal and South Ferry. Service is provided 24 hours a day, 365 days a year. Each day eight boats transport almost 65,000 passengers during 104 boat trips. Over 33,000 trips are made daily. The Ferry has remained free of charge since 1997.

Bridges and Tunnels: New York City is home to over 2,000 bridges and tunnels. Several agencies manage this network of crossings, including the New York City Department of Transportation, MTA, Port Authority of New York and New Jersey, New York State Department of Transportation and Amtrak.

Roads: The city's extensive network of expressways includes four primary Interstate Highways: Interstate 78, Interstate 80, Interstate 87 and Interstate 95. Interstate 78 and Interstate 87. To ease traffic, Mayor Bloomberg proposed congestion pricing in 2007 for motor vehicles entering Manhattan's business district from 6:00 a.m. to 6:00 p.m. However, this proposal was defeated when Sheldon Silver, Speaker of the New York State Assembly, announced that the bill would not come up for a vote in his chamber.

Taxis: There are over 13,000 taxis operating in New York City, not including over 40,000 other for-hire vehicles. Their distinctive yellow paint has made them New York icons. In 2005, New York introduced incentives to replace its current yellow cabs with electric hybrid vehicles, then in 2007, Mayor Bloomberg proposed a five-year plan to switch New York City's taxicabs to more fuel-efficient hybrid vehicles as part of an agenda for New York City to reduce greenhouse gas emissions as well as surging fuel costs.

Infrastructure Plan: Governor Cuomo has recently (January 2016) unveiled a comprehensive plan to transform and expand vital infrastructure downstate and make critical investments in the region. The plan proposes the following, although several budget analysts have questioned how the state will pay for these projects:

- A \$22 billion multi-year capital plan to upgrade critical roads, bridges and other transportation infrastructure in upstate New York;
- A Thruway toll reduction plan, which would keep tolls flat until at least 2020 for all users, cut tolls in half for frequent travellers and eliminate tolls for farm vehicles;
- A \$200 million grant program for upstate airports to renovate and accelerate investments in commercial passenger and cargo service airports;
- A \$4 billion plan to demolish LaGuardia and replace it with a new terminal, and an overhaul of JFK;
- \$3 billion to expand and re-imagine Penn Station, which will be called the 'Empire State Complex';
- Renovating and upgrading 30 MTA subway stations;
- Building a new \$20 billion rail line under the Hudson River between Manhattan and New Jersey;



- Adding new capacity to a stretch of the Long Island Rail Road, which, at peak times, is forced to run trains in one direction between Floral Park and Hicksville, making it impossible for reverse commuters and intra-island travellers;
- A \$5 million study on a potential tunnel connecting Long Island and the Bronx, Westchester County or Connecticut.

Enabling policies

Regional Economic Development Councils

In 2011, 10 Regional Economic Development Councils were established within New York State to develop long-term strategic plans for economic growth for their regions.

Each Regional Council is made up of approximately twenty members appointed by the Governor, drawn from a broad spectrum of regional stakeholders representing private business, including small businesses; minority- and women-owned business enterprises; non-profit organisations; chambers of commerce and trade organisations; organised labour; higher education; community-based organisations; and the agricultural community. Members all have an interest in the economic development of their region.

Regional Councils, which are volunteer organisations, have also formed work groups, comprised of volunteers, to help identify and implement the strategies. Work groups allow for greater involvement of regional stakeholders from industries, communities and other groups, and provide an additional forum for sharing ideas and information that will lead to the creation or retention of jobs, and the investment of state resources in the community.

Through the Regional Councils, regions have competed for state funds that have totalled nearly \$4 billion after five years, leveraged \$22 billion in private investment, funded more than 4,100 projects and created more than 200,000 new jobs across the state.

This new operating model replaced a top down approach to economic development that left New York's regions isolated and without a coordinated mechanism for growth. The new model is a community-based, bottom up approach, which has established a competitive process for State resources. While local and regional leaders often complain about their state government's siloed programs, fragmented funding streams, and state priorities that don't match regional priorities, New York empowers regions to plan, collaborate, and set a roadmap for economic transformation based on their unique assets and market opportunities.

Strategies focus on unleashing the productive capacities of existing firms and workers (rather than primarily recruiting assets from the outside) to deliver jobs, economic growth, and better wages. Investments target applied research and technology capabilities, plus workforce training, infrastructure modernisation, and entrepreneurship.



Initiatives to grow and support the city's key sectors:

Financial Services

In 2009, Mayor Bloomberg announced 11 initiatives to help support New York City's financial services sector and allow it to grow as a global centre for innovation and entrepreneurship. The initiatives were aimed at retaining and expanding the cluster of financial services businesses and institutions in the City, while fostering new ideas that will keep the city competitive. The initiatives include the following:

- Promote Business Innovation and Entrepreneurship and Grow the City's Venture Capital Sector
 - Create Incubators for Start-Up Businesses
 - Establish a New York City Angel Fund
 - Launch an Annual International Financial Services Business Plan Competition
 - Open 'VC Connect' Online Information Portal and Provide VC Support Services
 - Begin the FastTrac Program to Help New Yorkers Start Entrepreneurial Businesses
 - Start JumpStart NYC to Help New Yorkers Join Entrepreneurial Businesses
- Retain and Grow Financial Services Institutions in New York City
 - Expand Incentives for Financial Services Companies Locating in Lower Manhattan
 - Attract and Grow New Financial Services Utilities
 - Conduct an International Recruitment Campaign
 - Establish an Ongoing Financial Services Advisory Committee
 - Refocus Regulatory Advocacy



Technology

The strong growth of New York's technology sector, described above, has drawn on supportive policy as well as New York natural strengths. One of Mayor Bloomberg's signature projects has been to expand New York City's technology sector and foster technology and information companies, which are easily uprooted and moved to competitor areas. The Bloomberg administration has:

- Created the NYU Center for Urban Science and Progress in Downtown Brooklyn;
- Helped to create a technical school at Cornell University and donated \$100 million to the project;
- Appointed the City's first Chief Digital Officer;
- Provided financial support for tech incubators and workshare spaces, as well as underwriting the BigApps and Next Idea competitions/hackathons;
- Launched NYC Venture Connect, an online forum of business resources for entrepreneurs;
- Partnered with FirstMark Capital to create the New York City Entrepreneurial Fund—a \$22 million fund to provide promising New York City-based technology start-up companies with early-stage capital;
- Created the Advanced Software Development Program at the CUNY Institute for Software Design and Development, which offers 20 students advanced classes in partnership with Tipping Point Partners and other local tech companies;
- Launched NYC Generation Tech to give more young people access to tech-related training.

CHALLENGES

Threats to Financial Services

Since 2000, the growth trajectory of the financial services industry in New York City and State has gone from robust to modest. Its economic output expanded at less than half the pace of all private industry at state-level (6 per cent versus 14 per cent) and one-third the pace of all private industry at city level (6 per cent versus 17 per cent). During the past five years, the city experienced a net loss of about 25,000 financial services jobs, and job losses are projected to accelerate over the next five years.

Over several decades, New York City has seen a gradual loss of middle- and lower-paying jobs in the industry due to technology or relocation of jobs to lower cost regions. Back office jobs were the first to go, followed by downsizing of trading jobs that were replaced by electronic exchanges. The most frequently-cited reasons for relocating operations out of New York City are cost pressures, lack of government incentives, and competition from domestic and international financial hubs. Restrictive USA immigration and visa policies have also made it more difficult to recruit global talent.

The industry continues to favour New York as a place that provides excellent access to both talent and customers, a relatively stable business environment, and many lifestyle amenities. But there are rising concerns about high costs, high tax rates, ageing infrastructure and a hostile political and regulatory climate. The report, 'At Risk: New York's Future as the World Financial Capital' conducted by the Partnership for New York City and Gerson Lehrman Group (June 2015), identified four key threats to the sector:



1. **Growing competition:** New York City is relying on past strengths, rather than competing aggressively to build market share. Aside from high costs, New York suffers from ageing infrastructure, ranging from congested streets and airports to less than adequate telecommunications and broadband networks. Until recently, London mounted the only real challenge to New York. Today, the biggest challenge to both New York and London comes from emerging financial centres in the developing world where growth is increasingly concentrated. Many countries use immigration policies as an economic development strategy, offering incentives to attract entrepreneurs and skilled workers while restrictive US immigration and visa policies put New York firms at a disadvantage in recruiting top talent. A growing number of USA cities and states are also competing to draw financial operations out of New York, offering lower costs as well as incentive packages.
2. **Federal, state and local tax policies:** The USA imposes the highest corporate income tax rate among OECD countries, 39.1 per cent, and is one of only two countries that reach beyond its borders to tax overseas income earned by non-resident citizens. When New York City and State corporate taxes are added, the total effective tax rate on business is 45 per cent, compared to 25 per cent in China and 20 per cent in the UK.
3. **Punitive regulatory regime:** Since the 2008–09 financial crisis, a new level of oversight, regulation, enforcement and prosecution has come down on the financial services industry in both London and New York City, while Asia and other emerging markets have remained relatively open. Businesses are also concerned about the legal and regulatory environment in New York City and State. As a result of the regulatory climate, most of the newly created financial services jobs focus on non-client facing activities that respond to regulatory requirements, do not create significant value, and are easier to put in remote locations.
4. **High costs of living and doing business:** New York City is an expensive place to do business and lacks the modern infrastructure of some of its global competitors. New York City's commercial rents, property taxes and building operating costs are the highest in the USA. For financial services firms seeking to control costs, second-tier cities offer an attractive alternative for operations that do not have to be close to headquarters. Despite being expensive, much of the office building infrastructure is obsolete, making adequate IT access and modern space configurations more difficult. New York's transportation infrastructure is inferior to many modern financial centres. Traffic congestion, both on the roads and in the air, creates delay and adds to costs of doing business. Approvals for new real estate developments are slower, more expensive and more complex than in other jurisdictions. Cost for security, technology and insurance needed to address the threat of international terrorism, including cyber threats, also tends to be higher in New York City. New York State's community rating health insurance system increases premiums for industries with younger workers, including financial services. Finally, the cost of living in New York is high – especially housing – which forces most employers to pay at least a 15–25 per cent salary premium so that mid-level employees can have a life style in New York comparable to what they could afford in other regions of the country.

Poverty and Inequality

Income and poverty disparities present an increasing challenge for New York City, particularly in its outer boroughs. The city's unemployment rate remains stuck near 10 per cent, with more than one in five people living in poverty. A major cause is the skills gap, which is manifested in differences in educational attainment. Over 1.5 million adults (more than 25 per cent) in New York's five boroughs lack adequate literacy skills while



nearly 1.2 million New York City residents aged 25 and older (more than 21 per cent) lack a high school diploma or equivalent. There are important ethnic differences, e.g. nearly 25 per cent of White New Yorkers hold a graduate or professional degree, compared to only 7.5 per cent and 4.9 per cent of Black and Latino residents. If current demographic and educational attainment trends persist (particularly the growth of the Hispanic and non-white populations, which have significantly lower rates of educational attainment), New York's future workforce will become less skilled even as the economy continues to shift towards 'knowledge jobs'.

Talent Shortage

For more than a century, New York has relied upon its appeal as a destination for bright, ambitious people from around the country and beyond in a wide variety of fields. The city's allure has allowed leaders in the public and private spheres to assume that employers would never lack for talent, and has somewhat relieved them of the need to ensure that those who grew up in the city are supported in reaching their full educational and occupational potential. However, there are reasons to believe that New York may not continue to attract such high levels of talent. As other cities and regions in the USA and abroad ramp up their own efforts to build an economy around high-skilled workers, their first step will be to retain a larger share of the local native talent that might have migrated towards to New York. Already, several key city industries, including high-value jobs in health care and information technology, have experienced periodic worker shortages in recent years. The impending retirement of the baby boomers, who are disproportionately represented in the upper levels of talent-intensive industries, will only heighten the dilemma. This is a long-term problem that requires a long-term solution: vastly increasing the supply of home-grown human capital to complement or replace what the city traditionally has been able to import.

Internet Connectivity

New York's lack of reliable, high-speed internet is limiting the city's growth. The City's telecom infrastructure is well behind where it should be for a city vying to be one of the nation's two leading technology hubs. Many start-ups that have looked for affordable space in former industrial districts outside of Manhattan have had to abandon those plans after discovering high-speed internet connections were not available.

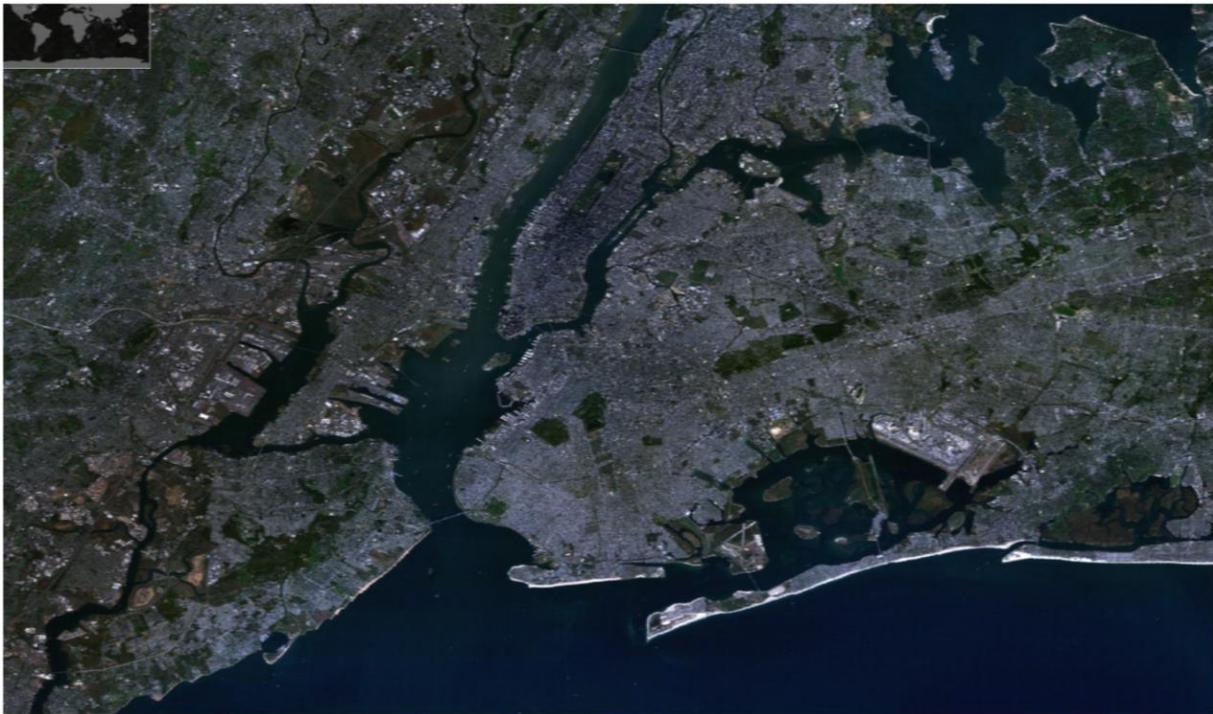
Transport

New York's transit network was constructed in an era when all roads and business led to Manhattan. As a result, New York's public infrastructure system does not serve all boroughs and neighbourhoods adequately. Major centres of employment, including industrial parks, airports and medical centres, are not easily reached by a subway system designed to transport commuters into Manhattan's central business district, and many neighbourhoods are not served by the subway and have infrequent or unreliable access to the MTA's bus network.



Affordable Housing and Office Space

New York City is one of the world's most expensive cities in which to live and work. It lacks both adequate affordable housing and commercial workspace for mid-sized start-ups, and is one of the most expensive rental markets in the USA. In 2014, the average price of a home in Manhattan reached \$1.87m (£1.22 million). Developers target the lucrative high-end market, where margins can be spectacular, and most families spend over a third of their income on rent. According to a 2009 report by the Center for an Urban Future, a person earning \$60,000 a year in Manhattan had the same standard of living as someone making \$26,000 in Atlanta.



INSIGHTS FOR THE LONDON-STANSTED-CAMBRIDGE CORRIDOR

A locally diverse approach to economic development can complement regional strategic priorities. In recent years, New York State has pioneered a new approach to economic development by creating regional economic development councils – a community-based, bottom up approach, which enables ten regions within the state to develop long-term strategic plans for economic growth based on their unique assets and market opportunities. Through the Regional Councils, regions have competed for state funds that have totalled nearly \$4 billion after five years, leveraged \$22 billion in private investment, funded more than 4,100 projects and created more than 200,000 new jobs across the state. While local and regional leaders often complain about their state government's siloed programs, fragmented funding streams, and state priorities that don't match



regional priorities, New York empowers regions to plan, collaborate, and set a roadmap for economic transformation based on their unique assets and market opportunities.

ICT & Digital has been a recent source of diversification and growth and is complements the diverse range of technology and creative industries, as it has in parts of the Corridor. Silicon Alley', centred in Manhattan, is home to many of the region's high technology industries, including the Internet, new media, financial technology, telecommunications, digital media, software development, biotechnology, game design, and other fields within information technology. High technology start-up companies and employment are growing in New York City and the region, bolstered by the city's position in North America as the leading Internet hub and telecommunications centre, including its vicinity to several transatlantic fibre optic trunk lines, New York's intellectual capital, and its extensive outdoor wireless connectivity

It is a much wider story than finance. The wider New York Metro Area has the largest bioscience workforce in the USA (more than Boston and Los Angeles combined). The healthcare industry employs approximately 565,000 people in New York City. Research and medical services are important sub-sectors. New York has the most post-graduate life sciences degrees awarded annually in the USA and receives the second-highest amount of annual funding from the National Institutes of Health among all USA cities, after Boston.

New York City Metro Region has extensive public transport networks and is notable amongst US cities for having a low rate of personal automobile ownership. About one in every three users of mass transit in the USA and two-thirds of the nation's rail riders live in New York City or its suburbs, while New York is the only city in the USA where over half of all households do not own a car.

State-level planning helps to facilitate strategic infrastructure planning and investment. Governor Cuomo has recently (January 2016) unveiled a comprehensive plan to transform and expand vital infrastructure downstate and make critical investments in the region, including a \$22 billion annual infrastructure upgrade capital budget; a \$4 billion plan to demolish LaGuardia and replace it with a new terminal, and an overhaul of JFK; \$3 billion to expand and re-imagine Penn Station, which will be called the 'Empire State Complex'; renovating and upgrading 30 MTA subway stations; and building a new \$20 billion rail line under the Hudson River between Manhattan and New Jersey.

An approach which aims to develop productivity of existing businesses and the existing workforce. The strategic approaches emerging from the 10 Regional Economic Development Councils, and their collaboration with city and state authorities has led to strategies focus on unleashing the productive capacities of existing firms and workers (rather than primarily recruiting assets from the outside) to deliver jobs, economic growth, and better wages. Investments target applied research and technology capabilities, plus workforce training, infrastructure modernisation, and entrepreneurship.

New York City Metro Area shares many of the challenges faced by the Corridor. Business and residential costs are high, and approvals for new real estate developments are slower and more expensive than other jurisdictions in the US and internationally. Income and poverty disparities present an increasing challenge for New York City, particularly in its outer boroughs. A major cause is differences in educational and skills attainment. Internet connectivity is poor in many parts of the Metro area. Many start-ups that have looked for



affordable space in former industrial districts outside of Manhattan have had to abandon those plans after discovering high-speed internet connections were not available.

A radial transport network that does not serve all boroughs and neighbourhoods adequately. Much like the Corridor's transport network, east-west links are not strong. In New York, Major centres of employment, including industrial parks, airports and medical centres, are not easily reached by a subway system designed to transport commuters into Manhattan's central business district, and many neighbourhoods are not served by the subway and have infrequent or unreliable access to the MTA's bus network.

Lack of affordable housing and office space. New York City is one of the world's most expensive cities in which to live and work. It lacks both adequate affordable housing and commercial workspace for mid-sized start-ups, and is one of the most expensive rental markets in the USA. In 2014, the average price of a home in Manhattan reached \$1.87m (£1.22 million). According to a 2009 report by the Center for an Urban Future, a person earning \$60,000 a year in Manhattan had the same standard of living as someone making \$26,000 in Atlanta.

Emerging workforce and talent shortages. Despite having an appeal as a magnet for bright and ambitious people from around the world over the past century, there are reasons to believe that New York may not continue to attract such high levels of talent. Already, several key city industries, including high-value jobs in health care and information technology, have experienced periodic worker shortages in recent years. The impending retirement of the baby boomers, who are disproportionately represented in the upper levels of talent-intensive industries, along with high comparative costs of living will only compound these difficulties. This is a long-term problem that requires a long-term solution: vastly increasing the supply of home-grown human capital to complement or replace what the city traditionally has been able to import.

Perhaps the main lesson to draw is that there are limits to importing skills and labour to ease the problems of a lack of skills and high business and wage costs. New York City Metro Region has had to focus on making more out of its existing workforce, resources and businesses. A key aim has been to enhance productivity as a means of continuing to support growth and economic development.



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