# NJBIA's 12 Indicators of Innovation

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. INTRODUCTION</td>
<td></td>
</tr>
<tr>
<td>2. VENTURE CAPITAL INVESTMENT</td>
<td></td>
</tr>
<tr>
<td>3. SBIR/STTR AWARD OBLIGATION</td>
<td></td>
</tr>
<tr>
<td>4. R&amp;D STATE GOV. EXPENDITURES</td>
<td></td>
</tr>
<tr>
<td>5. NSF AWARD TOTALS</td>
<td></td>
</tr>
<tr>
<td>6. RANKED HIGHER ED INSTITUTIONS</td>
<td></td>
</tr>
<tr>
<td>7. NET MIGRATION</td>
<td></td>
</tr>
<tr>
<td>8. EDUCATIONAL ATTAINMENT</td>
<td></td>
</tr>
<tr>
<td>9. RATE OF NEW ENTREPRENEURS</td>
<td></td>
</tr>
<tr>
<td>10. U.S. PATENTS GRANTED</td>
<td></td>
</tr>
<tr>
<td>11. STARTUP DENSITY</td>
<td></td>
</tr>
<tr>
<td>12. INCREASE IN TOTAL BUSINESS</td>
<td></td>
</tr>
<tr>
<td>13. REGIONAL BUSINESS CLIMATE</td>
<td></td>
</tr>
<tr>
<td>14. ANALYSIS</td>
<td></td>
</tr>
<tr>
<td>15. CONCLUSION</td>
<td></td>
</tr>
<tr>
<td>16. APPENDICES</td>
<td></td>
</tr>
</tbody>
</table>

**December 2018**
# Table of Contents

Executive Summary ............................................................................................................3
Introduction .........................................................................................................................4

› **CAPITAL**
  Venture Capital Investment .............................................................................................5
  SBIR/STTR Award Obligation ...................................................................................... 6
  R&D State Government Expenditures .............................................................................7
  National Science Foundation College/University Award Totals ........................................8

› **TALENT**
  Number of Colleges/Universities Ranked in the Top 100 .................................................9
  Net Migration of First-Time, Full-Time College Students ............................................. 10
  Percentage of Population with a Graduate or Professional Degree .............................. 11
  Rate of New Entrepreneurs ...........................................................................................12

› **BUSINESS**
  U.S. Patents Granted to Inventors & Assignees .............................................................13
  Startup Density .............................................................................................................14
  Percentage Increase in Total Business ..........................................................................15
  Regional Business Climate ............................................................................................16

Analysis ............................................................................................................................17
Conclusion ........................................................................................................................18
Appendix A: Takeaways from a NJ-MA Comparison ..........................................................19
Appendix B: Audible & Newark, NJ ...................................................................................20
Newark at a Glance ..........................................................................................................23
Demographics ..................................................................................................................24
Endnotes ..........................................................................................................................25
References .......................................................................................................................25
New Jersey is at a crossroads. Once heralded as the innovation capital, today New Jersey is working to reclaim its stature as the “Innovation State.” The competition is fierce and regional competitors are winning. Why? This paper looks at the “Indicators of Innovation” and ranks them among our regional states in order to understand where New Jersey is ranked today and how to begin to set goals to increase our standings. A deeper analysis is also taken with a direct comparison to Massachusetts, where we learn about additional best practices and ancillary actions that can help jump-start New Jersey’s journey. Our findings are supported by our research as well as information gathered from NJBIA’s April 2018 program, “A Tale of Tech Cities – Innovation & Urban Revitalization.” It is the information gleaned from the latter which supports our Case Study found later in this report.

New Jersey possesses all the qualities that are needed to reinvent and grow an innovation ecosystem: an ideally centralized location, nationally recognized K-12 academics, quality higher education institutions, and a highly educated, highly skilled workforce. If the state leverages these assets, it can reclaim its competitive edge. This will require the Garden State to attract top-tier talent to New Jersey’s postsecondary institutions, build “live, work and play” communities, increase venture capital investment, and target industry clusters for growth.

However, achieving these initiatives alone will not address today’s reality that New Jersey is lagging in regional competitiveness and affordability. As such, a sustainable plan will balance these initiatives with plans for tax and regulatory reform, as well as smart infrastructure investments.

This can be done with the coordination and willingness to make tough decisions in the short term that will reap great returns to the state in the long run. We cannot expect to leave this task to government alone. Coordination with academia, business and government will be necessary to make this a reality.

New Jersey possesses the qualities that are needed to reinvent and grow an innovation ecosystem: an ideally centralized location, nationally recognized K-12 academics, quality higher education institutions, and a highly educated, highly skilled workforce.
INTRODUCTION

However, New Jersey now lags behind our regional competitors in the innovation realm. Over the course of the last few years, NJBIA has studied the concept of innovation in depth. This study analyzes 12 indicators of innovation and compares New Jersey with regional competitor states. The innovation indicators are broken into three major categories that NJBIA has determined as imperative to recreating a successful innovation ecosystem: capital, talent, and business.

Once heralded as the innovation capital, today New Jersey is working to reclaim its stature as the “Innovation State.” The competition is fierce. Regional competitors are winning – and winning big.

Reclaiming NJ’s Stature as the Innovation State

BY NICOLE M. SANDELIER | NSANDELIER@NJBIA.ORG

In the days of Thomas Edison, Nikola Tesla, and Alexander Graham Bell, the Garden State reigned as the “Silicon Valley” of the East, acting as a model of growth and innovation for other states.

However, New Jersey now lags behind our regional competitors in the innovation realm. Over the course of the last few years, NJBIA has studied the concept of innovation in depth. This study analyzes 12 indicators of innovation and compares New Jersey with regional competitor states. The innovation indicators are broken into three major categories that NJBIA has determined as imperative to recreating a successful innovation ecosystem: capital, talent, and business.

Once heralded as the innovation capital, today New Jersey is working to reclaim its stature as the “Innovation State.” The competition is fierce. Regional competitors are winning – and winning big.

<table>
<thead>
<tr>
<th>CAPITAL</th>
<th>TALENT</th>
<th>BUSINESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital is the lifeblood of any business. Venture and innovation projects are no different. The amount of cash flow into and to a state dictates the opportunities available to individuals and to businesses. In this report, capital is measured four ways: venture capital investment; Small Business Innovation Research (SBIR) &amp; Small Business Technology Transfer (STTR) award obligations; research &amp; development state expenditures; and National Science Foundation awards.</td>
<td>A highly educated, highly skilled workforce plays a significant role in creating an innovation ecosystem. Top-tier institutions serve as incubators for innovation. In order to understand statewide talent networks, this category analyzes: the number of colleges/universities ranked in the Top 100 in each state; net migration of first-time college students; percentage of the population with a graduate or professional degree; and the rate of new entrepreneurs.</td>
<td>Without business there is no economy. Having a competitive business climate can make or break a state’s ability to attract and retain innovative businesses. A healthy/competitive business climate can spur innovation, while an unhealthy/uncompetitive climate will deter innovation in a state. For the purposes of this report, business includes: the number of patents issued; startup density; percentage increases in total business; and NJBIA’s regional business climate score, which encompasses a range of taxation factors.</td>
</tr>
</tbody>
</table>
Today, venture capital plays an enormous role in creating and expanding innovative concepts from startups to commercialization. According to the National Venture Capital Association (NVCA), New Jersey received just $781 million in deal flow investments in 2017. During the same year, Massachusetts and New York received $8.97 billion and $12.27 billion, respectively. An NJBIA analysis of NVCA data found that overall New Jersey increased its investment levels at a lower rate than every state in its region between 2004 and 2017. New Jersey experienced a 4 percent increase in venture capital investment, while New York led the states in our region by increasing its investment levels by 1,910 percent.
The federal government plays an enormous role in funding research and development (R&D) activities that ultimately foster innovation. The Small Business Innovation Research (SBIR) and the Small Business Technology Transfer (STTR) programs were designed to ensure that small businesses were not forgotten in federal R&D funding efforts. Comprised of 11 federal agencies, the SBIR/STTR programs award funds annually to small businesses on a competitive basis.

According to SBIR/STTR, New Jersey companies received $51.66 million in award obligation in 2017. During the same year, regional leader Massachusetts was awarded $270.97 million, more than five times the award obligation of New Jersey.

An NJBIA analysis found that from 2004 to 2017, regional leader Massachusetts far outpaced New Jersey (and the rest of the region) in total award money received, despite experiencing a 20 percent decrease in federal award obligation.
INDICATOR 3

R&D State Government Expenditures

While state R&D expenditures are small compared to federal expenditures, state governments should be eager to invest in and promote innovative activities within their borders. According to the National Science Foundation, the primary modes of investment have historically included public financing, tax relief, and subsidies; however, R&D investment at the state level is also a key contributor to creating a successful innovative ecosystem.

According to the National Science Foundation, New Jersey invested $30.48 million in R&D expenditures in 2016. Regionally, three states invested less than New Jersey, while three states invested more. New Jersey invested significantly less than Connecticut and Pennsylvania, which spent $49.46 million and $73.18 million, respectively. In addition, regional leader (and outlier), New York invested in excess of $400 million in 2016, far exceeding the investment of all regional states combined.

In 2010, New Jersey investment in R&D hit a 10-year peak, mirroring the investment totals of Connecticut. However, after 2010 New Jersey never reached or exceeded the state’s 10-year high. On the contrary, Connecticut continued to increase investment through 2015.
The amount of award money colleges and universities receive from the federal government directly affects an institution’s capability to research and develop innovative ideas. Tasked with keeping the United States at the “leading edge of discovery,” the National Science Foundation (NSF) funds research and education in the fields of science and engineering and is the leader in agency funding for institutions that support top-tier innovation.3

According to the NSF, New Jersey received $157 million in NSF funding in 2018. New Jersey received significantly less money than regional competitors Pennsylvania, Massachusetts, and New York, but more than Connecticut, Delaware, and Maryland.

INDICATOR 4

National Science Foundation
College/University Award Totals

2018 NSF College/University Award Totals
IN MILLIONS
INDICATOR 5

Number of Colleges/Universities Ranked in the Top 100

Whether a student is seeking an undergraduate degree, a master's degree, or a doctorate, attracting top-tier candidates to postsecondary institutions is an essential component in creating an innovation ecosystem. After analyzing the 2018 overall university rankings from *U.S. News & World Report*, it can be concluded that Massachusetts and New York both house 10 “Top 100” colleges/universities within their borders, the most in the region. New Jersey is home to three.

Of the 10 ranked universities in Massachusetts, seven are located within a 10-mile radius of Boston and are ranked within the Top 40 universities in the country. The close proximity of numerous Massachusetts universities located within a major urban city provides an ideally centralized location for competition to spur and thrive, ultimately stimulating an innovation ecosystem. By comparison, New Jersey’s three top-ranked universities are geographically dispersed.
INDICATOR 6

Net Migration of First-Time, Full-Time College Students

Given that New Jersey offers top-tier K-12 education, the migration of New Jersey’s first-time college students is an integral component to the state’s innovation ecosystem. As such, a net loss in migration patterns signifies a loss in top-tier talent. Typically, two primary factors motivate the migration decisions for individuals ages 18-34: where to continue their postsecondary education and where to begin their careers.

According to the National Center for Education Statistics, in the fall of 2016, New Jersey experienced the largest net loss of first-time students both regionally and nationally, losing a net total of over 28,000 students. In comparison, regional leader Pennsylvania experienced a net gain of nearly 17,000 students.
INDICATOR 7

Percentage of Population with a Graduate or Professional Degree

A highly educated, highly skilled workforce is a significant aspect of an innovation ecosystem. According to McKinsey & Company, the demands of innovators have never been greater; thus, innovative leaders need to hire individuals who possess diverse skill sets and are able to work on multiple projects simultaneously. Oftentimes those possessing the qualities needed to work within innovation industries are individuals with graduate and professional degrees, including, but not limited to, a master’s degree or a doctoral degree.

According to the U.S. Census Bureau, 15.6 percent of New Jersey’s population possessed a graduate or professional degree in 2017. In comparison, regional leader Massachusetts’s graduate and professional degree holders represented 19.5 percent of the state’s total population.
Another indicator of innovation is the rate in which new businesses are formed within a state. Every year the Kauffman Index produces the Rate of New Entrepreneurs as a component of its Startup Activity State Trends report. The Rate of New Entrepreneurs is a measure of startup activity that reflects the percentage of adult population in each state that starts a new business, “regardless of incorporation status and the number of employees.”

According to the Kauffman Index released in 2017, 340 adults started a business for every 100,000 people in New Jersey. The only state in the region to surpass New Jersey was New York, totaling 360 for every 100,000 adults starting a business.
INDICATOR 9

**U.S. Patents Granted to Inventors & Assignees**

High levels of patent activity indicate a healthy and active innovative ecosystem. Patent activity signifies a successful translation from research ideas to commercialization. Perhaps not surprisingly, today patents are the primary form of “legal codification and ownership” of innovative ideas and its application.⁵

In 2017, New Jersey ranked 4th in the region, having been granted 8,603 patents. Border state Pennsylvania narrowly surpassed New Jersey, earning about 200 more patents. Massachusetts and New York far surpassed the Garden State, earning 15,144 and 14,683 patents, respectively.

From 2007 to 2017, Massachusetts experienced a 97 percent increase in U.S. patents granted, surpassing New York to take the regional lead. In 2007, New Jersey earned a greater number of U.S. patents in comparison to Pennsylvania. However, Pennsylvania experienced a larger percentage increase in patents overall between 2007-2017, ultimately surpassing New Jersey.
INDICATOR 10

*Startup Density*

The Kauffman Index also measures the number of startups per 1,000 employer businesses. A startup occurs when an entrepreneur begins to secure financing, to create business structure, and to initiate operations. Startups are a key component of a successful innovation ecosystem because they signify that entrepreneurs are working toward the commercialization of new products, ultimately increasing economic activity in a state.

According to the Kauffman Index, New Jersey’s startup density was 76.1 per 1,000 employer firms in 2017. New Jersey ranked 3rd in the region behind New York and Delaware, which experienced a startup density rate of 83.3 and 77.0 per 1,000 firms, respectively.
Centrally located between Philadelphia and New York City, New Jersey has the distinct advantage of location; thus, it should be easy to attract and retain business in New Jersey. An increasing number of businesses in a state signifies a growing economy that enhances an innovative ecosystem. Bottom line, businesses attract talent and talent spurs innovation.

From 2015 to 2016, New Jersey experienced a 0.44 percentage increase in total businesses, according to an NJBIA analysis of U.S. Census Bureau data. During this time the Garden State experienced a net increase of approximately 1,000 businesses throughout the state. Despite an increase in businesses, New Jersey ranked 6th in the region. In fact, only Connecticut fared worse in the region.
INDICATOR 12

Regional Business Climate

Whether a startup or large corporation, companies need a healthy business climate to thrive and grow; one that supports job growth and incentivizes investment. Currently, New Jersey’s business climate is a challenging one and can hinder the potential re-creation of its innovation ecosystem. According to NJBIA’s 2018 Regional Business Climate analysis, New Jersey ranked last in business climate competitiveness. Further, the state’s overall tax climate was negatively impacted by the passage of the FY 2019 budget, which included a corporate business tax surcharge and other challenges for businesses.

Of equal concern is the state’s regulatory structure. According to NJBIA’s 2019 Business Outlook Survey, 83 percent of respondents felt that New Jersey has not made progress over the last year in easing regulatory burdens for business and 59 percent said regulatory compliance was more costly in New Jersey than in other states. New Jersey’s current structure causes businesses to dedicate unwanted time, money, and energy to satisfy compliance and regulatory issues.

2018 Regional Rates

<table>
<thead>
<tr>
<th>State</th>
<th>Minimum Wage Rate</th>
<th>Top Income Tax Rate</th>
<th>Top Corporate Tax Rate</th>
<th>State Sales Tax Rate</th>
<th>Property Tax Paid as a % of Home Value</th>
<th>Top Unemployment Tax Rate</th>
<th>Overall Regional Business Climate Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delaware</td>
<td>$8.25 (2)</td>
<td>6.60% (4)</td>
<td>8.70% (5)</td>
<td>0.00% (1)</td>
<td>0.56% (1)</td>
<td>8.00% (4)</td>
<td>1 (17)</td>
</tr>
<tr>
<td>Maryland</td>
<td>$10.10 (T4)</td>
<td>5.75% (3)</td>
<td>8.25% (T3)</td>
<td>6.00% (T3)</td>
<td>1.03% (2)</td>
<td>7.50% (3)</td>
<td>2 (18)</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>$7.25 (1)</td>
<td>3.07% (1)</td>
<td>9.99% (6)</td>
<td>6.00% (T3)</td>
<td>1.48% (5)</td>
<td>10.89% (6)</td>
<td>3 (22)</td>
</tr>
<tr>
<td>New York</td>
<td>$10.40 (6)</td>
<td>8.82% (6)</td>
<td>6.50% (1)</td>
<td>4.00% (2)</td>
<td>1.40% (4)</td>
<td>8.50% (5)</td>
<td>4 (24)</td>
</tr>
<tr>
<td>Connecticut</td>
<td>$10.10 (T4)</td>
<td>6.99% (5)</td>
<td>8.25% (T3)</td>
<td>6.35% (6)</td>
<td>1.62% (6)</td>
<td>6.80% (2)</td>
<td>T5 (26)</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>$11.00 (7)</td>
<td>5.10% (2)</td>
<td>8.00% (2)</td>
<td>6.25% (5)</td>
<td>1.15% (3)</td>
<td>11.13% (7)</td>
<td>T5 (26)</td>
</tr>
<tr>
<td>New Jersey</td>
<td>$8.60 (3)</td>
<td>10.75% (7)</td>
<td>11.50% (7)</td>
<td>6.625% (7)</td>
<td>2.16% (7)</td>
<td>5.80% (1)</td>
<td>7 (32)</td>
</tr>
</tbody>
</table>
To put in perspective what these indicators signify in totality, NJBIA scored each indicator from 1 (least competitive in the region) to 7 (most competitive in the region), with a potential high score of 84. Since the study does not determine which category or indicator is the most important component to the innovation ecosystem, the indicators are not weighted. New Jersey’s cumulative innovation score totaled 41, which ranks 5th in the region. New York ranked 1st in the region, generating 71 points, followed closely by Massachusetts (63). Pennsylvania earned 49 points, Maryland earned 46, Delaware earned 34 and Connecticut earned 33. New Jersey’s largest outmigration states ranked 1st and 3rd.
Conclusion

To successfully recreate an innovation ecosystem, there must be a strong presence of all three categorical indicators: capital, talent, and business. According to our analysis, New Jersey ranks in the middle of the pack in all three categories. With this comparative data at hand, New Jersey’s leaders can strive to increase the state’s innovation score and they must.

This can be done by leveraging and mining our assets: an ideally centralized location, nationally recognized K-12 academics, quality higher education institutions, and a highly educated, highly skilled workforce. In addition, state leaders can address and begin to reform our state’s structural deficiencies (property taxes, pension costs and infrastructure investment), which are creating a lag on our state’s regional competitiveness and affordability.

Done the correct way, the Garden State can attract top-tier talent to New Jersey’s postsecondary institutions, build “live, work and play” communities, increase venture capital investment, and target industry clusters for growth.

To get there we need coordination and a willingness to make tough decisions that, if made today, will reap great short and long-term returns to the state. Together, government, academia and business can make the vision of revitalizing New Jersey’s innovation ecosystem a reality.
Takeaways from a New Jersey-Massachusetts Comparison

In addition to the 12 indicators analyzed, a New Jersey-Massachusetts comparison suggests there are additional factors that can help jump-start and sustain an innovation ecosystem.

1. LOCATION
   Absent a geographic cluster of research institutions like that of Boston, New Jersey must find unique ways to connect our research institutions to each other as well as build an ecosystem around these institutions to stimulate innovation. One strategy is the recently launched interactive database, ResearchwithNJ.org, which is designed to promote the state’s research universities, qualified professors, and their STEM research. This initiative virtually leverages the capacity and capabilities of New Jersey’s research institutions and is an excellent solution to the geographic dispersion challenge New Jersey experiences.

2. COLLOCATION OF INCUBATORS AND ACCELERATORS
   Incubators and accelerators provide entrepreneurs with advisory and administrative support with the goal of developing a startup/seed into a financially viable business that can survive on its own. The creation of incubator and accelerator spaces near research institutions would provide universities, their researchers and their students with spaces to create, expand, and enhance their ideas into products. In Greater Boston alone there are nearly 50 startup accelerators and incubators. Throughout New Jersey there are only 15.

3. PLACE MAKING
   Massachusetts exemplifies the live, work, and play concept in Boston. With a large city, home to multiple top-tier postsecondary institutions, and competitive high-paying jobs post-graduation, Massachusetts has created an ecosystem in Boston where young, educated individuals want to be. In fact, Massachusetts experienced a net positive migration of over 200,000 individuals (ages 18-34) from 2007 to 2016.\footnote{During the same time period, New Jersey lost nearly 200,000 individuals ages 18-34.}

4. COMMUNITY VISIONING
   Community visioning is the joint effort among government, academia, nonprofits and businesses at the local level that focuses on youth, human capacity and capital investment. Boston’s vision has resulted in significant investment in its people, institutions, and businesses. As of June 2017, Massachusetts invested more than $650 million dollars in capital projects, company grants/loans, academic research, tax incentives, internships, equipment/supplies, and other grants, much of which has been distributed in the Greater Boston region.\footnote{As of June 2017, Massachusetts invested more than $650 million dollars in capital projects, company grants/loans, academic research, tax incentives, internships, equipment/supplies, and other grants, much of which has been distributed in the Greater Boston region.}
The key is leveraging these assets in a coordinated manner to build innovation ecosystems that place NJ’s research institutions at the center, attract top-tier STEM students to these institutions and drive public/private investment into these ecosystems. As noted, this takes many partners, including the private sector. This case study is an example of how private sector industry is playing a key role in lifting an innovation ecosystem in Newark utilizing this three-legged stool as its foundation.

In April 2018, NJBIA hosted “A Tale of Tech Cities - Innovation & Urban Revitalization,” in partnership with Audible. The program evidenced Newark’s rise and Audible’s role as a committed partner in the revival of Newark and shows how “community visioning” and the right partners can begin to revitalize a city. A demographic sketch of Newark follows the case study and is an important foundation piece to understanding how to leverage a community’s assets; in the case of Newark, leveraging the location, rich diversity, universities and infrastructure.
AUDIBLE, INC. The development of a technology cluster in Newark is stimulating its revitalization. How is Audible contributing to the creation and sustainability of this ecosystem?

Audible Founder and CEO Don Katz outlined the importance of collaboration toward a shared vision as the key ingredient to catalyzing the rebirth of a neighborhood. As a core mission, Audible works to improve lives of those in their communities in which it operates. At its global headquarters in Newark, New Jersey, Audible supports students in “low-income, under-resourced communities by providing high-quality literacy programs in schools, comprehensive high school and college internships, a dedicated scholarship program, and large-scale community engagement programs.” Audible’s partnership with the Newark school system, including all public and charter schools within the city, is a notable example.

› **Reading Pals:** This elementary school literacy program pairs Audible employees with fifth-grade students at BRICK Peshine Academy. Employees and students read and listen to literature on Amazon Kindles and have comprehensive discussions regarding the material they read to help improve reading comprehension and vocabulary skills.

› **Project Listen Up:** Designed to help students increase their vocabulary and their test scores, this program provides 15,000 students and teachers in Newark’s districts and charter schools with a free year of Audible membership, a custom library of more than 150 educator-selected audiobooks, a Fire tablet, and headphones.

› **Newark High School Internship & College Scholarship Programs:** To date, nearly 70 Newark high school students have participated in Audible’s one-year, year-round, in-depth internship program. Through this program students gain exposure to career-building skills and work directly with Audible leaders throughout various departments and professions. This program has reaped “Audible Scholars” who go on to college and return to work at Audible during breaks and after graduation.

It is through programs like these at Audible that companies can develop students with the exact skillset needed by that company, thereby making an investment in the future workforce that brings great return to the company as well.

Investment in human capital must extend beyond the education system. As noted by Katz, companies should look in their backyard, which, in some cases, means “beyond traditional resources” to fill their workforce needs. Audible has found that hiring local or convincing out-of-area workers to live local through subsidizing housing results in more productive workers overall. This aligns with Mayor Ras Baraka’s vision of having local companies hire local.

To attract and retain the modern workforce requires creating communities that deliver on the desired goal of live, work and play. This means that beyond having access to good paying jobs, certain amenities will attract millennials.

Audible programs also include subsidizing an employee’s cost of living or education, including...
student loan repayment and providing employees with incentives to utilize area amenities, such as subsidizing lunch at local eateries. When companies invest in these ways, they are establishing a pipeline for the utilization of those area amenities and thus, ensuring that the indirect service economy reaps a return as well. Further, subsidizing housing keeps employees closer, improving productivity and providing the economic return on investment.

Audible provides employees additional opportunities to engage with the City of Newark through its Audible Cares program. Major volunteer events include the Martin Luther King and Earth Day community service days at Newark public schools, as well as STEM workshops at Newark high schools, and a “build day” located in Newark’s South Ward in conjunction with Habitat for Humanity.

To drive further direct economic investment into the region, Audible launched Newark Venture Partners (NVP), a venture fund created to “catalyze Newark’s technology ecosystem by attracting early-stage companies.” NVP is funded from private investment including seven regional corporate investors and is co-located in the Rutgers School of Business, which shares a building with Audible’s headquarters in Newark. As a result of this strategic location, NVP offers companies over 200 on-site specialists and other expertise from its corporate investors. The goal is to help these startups grow and retain them within Newark, where they can generate jobs and revenue for the city.

Audible’s focus on technology as driving an innovation ecosystem was intentional. Newark has incredible technology infrastructure; its 26 miles of underground dark fiber can sustain the demand of a technology industry. Further, technology reaps high growth companies and Newark’s diverse population is already yielding many first-generation immigrants with the type of degrees driving the technology industry. And of course, there is the economics of the industry; as Katz noted, one technology job delivers three service jobs and two professional jobs.

CONCLUSION
This case study has taken the fundamental principles of building an innovation ecosystem and shown how Newark’s assets are being leveraged in a coordinated manner to do so. With partners like Audible and the vision of leaders such as Mayor Baraka and Katz, Newark is on the rise. As New Jersey’s largest and most diverse city, as Newark goes, so goes New Jersey.

Audible has found that hiring local or convincing out-of-area workers to live local through subsidizing housing results in more productive workers overall.
Located just outside of New York City, Newark is the largest and second most diverse city in the state. The city is divided into five wards, each with distinct neighborhoods. Residential neighborhoods exist primarily in the North, Central and West wards, while industry is concentrated largely in the East and South wards near the airport and seaport.

Newark is home to the New Jersey Performing Arts Center (NJPAC), one of the largest venues in the country. The city is also home to The Outlet Collection, Jersey Gardens (the largest premium outlet mall in the state), the Prudential Center, the Red Bull Arena, and the GlassRoots Studio.

Degree Granting Postsecondary Institutions Located in Newark

- Berkeley College
- ESSEX County College
- Pillar College
- Rutgers University
- Seton Hall University

Major Companies Located in Newark

- Audible
- Horizon
- IDT
- NJIT New Jersey Institute of Technology
- Panasonic
- PSEG
- Prudential Financial
- Rutgers University
- United
# Demographics

Newark vs Boston vs State of New Jersey, 2016

<table>
<thead>
<tr>
<th></th>
<th>Newark, NJ</th>
<th>Boston, MA</th>
<th>New Jersey</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Population</strong></td>
<td>280,139</td>
<td>658,279</td>
<td>8,915,456</td>
</tr>
<tr>
<td><strong>Median Age</strong></td>
<td>33.0</td>
<td>31.7</td>
<td>39.5</td>
</tr>
<tr>
<td>% High School Graduate or Higher</td>
<td>73.3</td>
<td>85.7</td>
<td>88.9</td>
</tr>
<tr>
<td>% Bachelor’s Degree or Higher</td>
<td>13.7</td>
<td>46.4</td>
<td>37.5</td>
</tr>
<tr>
<td><strong>% In Labor Force</strong></td>
<td>62.3</td>
<td>68.7</td>
<td>65.8</td>
</tr>
<tr>
<td><strong>% Employed</strong></td>
<td>51.6</td>
<td>63.2</td>
<td>60.5</td>
</tr>
<tr>
<td><strong>% Unemployed</strong></td>
<td>10.7</td>
<td>5.5</td>
<td>5.2</td>
</tr>
<tr>
<td><strong>% Not In Labor Force</strong></td>
<td>37.7</td>
<td>31.3</td>
<td>34.2</td>
</tr>
<tr>
<td><strong>Median Household Income</strong></td>
<td>$33,025</td>
<td>$58,516</td>
<td>$73,702</td>
</tr>
<tr>
<td><strong>Mean Household Income</strong></td>
<td>$46,417</td>
<td>$89,236</td>
<td>$101,634</td>
</tr>
<tr>
<td><strong>Per Capita Income</strong></td>
<td>$17,198</td>
<td>$37,288</td>
<td>$37,538</td>
</tr>
<tr>
<td>% In Poverty</td>
<td>29.1</td>
<td>21.1</td>
<td>10.0</td>
</tr>
</tbody>
</table>
Endnotes


References


