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Abstract
As the pace of change has accelerated, there is wide recognition that the future will belong to innovative and advanced technologies and industries. Competition among cities and, indeed, within cities, has intensified to attract and retain the individuals and companies that are leading this change. While areas like Boston's Kendall Square and Silicon Valley are at the forefront of this movement, other areas are significant but under-reported contributors. Philadelphia, with its "eds and meds" economy, is well-positioned to excel in, and indeed has been capitalizing on, this innovation economy. While Philadelphia has received significant attention as an innovation center, much of this focus has been on University City, a portion of West Philadelphia with high-profile universities, spin-offs, and real estate developments. Meanwhile, South Philadelphia has quietly been creating a diverse innovation ecosystem, fueled by start-ups, Fortune 500 and publicly-traded companies, and professional sports teams. Anchored by the Philadelphia Navy Yard, which is rapidly expanding to become a research and development hub, the diversity and depth of South Philadelphia's innovation ecosystem may well elevate this neighborhood – and Philadelphia – into the national consciousness as a leading center of innovation.
Diverse Industries Power a Burgeoning Innovation Hub in South Philadelphia

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INTRODUCTION

As the pace of change has accelerated, there is wide recognition that the future will belong to innovative and advanced technologies and industries. Competition among cities and, indeed, within cities, has intensified to attract and retain the individuals and companies that are leading this change. While areas like Boston’s Kendall Square and Silicon Valley are at the forefront of this movement, other areas are significant but under-reported contributors. Philadelphia, with its “eds and meds” economy, is well-positioned to excel in, and indeed has been capitalizing on, this innovation economy. While Philadelphia has received significant attention as an innovation center, much of this focus has been on University City, a portion of West Philadelphia with high-profile universities, spin-offs, and real estate developments. Meanwhile, South Philadelphia has quietly been creating a diverse innovation ecosystem, fueled by start-ups, Fortune 500 and publicly-traded companies, and professional sports teams. Anchored by the Philadelphia Navy Yard, which is rapidly expanding to become a research and development hub, the diversity and depth of South Philadelphia’s innovation ecosystem may well elevate this neighborhood – and Philadelphia – into the national consciousness as a leading center of innovation.

BACKGROUND

Philadelphia is the sixth-largest city in the United States with a population exceeding one and a half million people (Fastest-Growing Cities Primarily in the South and West, 2019). The City’s economy is driven primarily by education and medicine with leisure and hospitality and professional and business services also serving as significant drivers (Philadelphia 2019: The State of the City, 2019). In addition, the continued growth and success of Comcast, the multinational media and entertainment company headquartered in Philadelphia, is also a significant catalyst for the City. As a result of these drivers, in the last decade, Philadelphia has experienced increasing population, home sale prices, job creation, educational attainment, and diversity (Philadelphia 2019: The State of the City, 2019).

The City has a number of key assets to enable its growth into a leading innovation center. Its growing economy and respected institutions are among the most important of these assets. The region features “over 2.8 million jobs” as well as “four major research universities, several highly ranked liberal arts colleges, and a cluster of powerhouse medical centers [with] the region’s ‘eds and meds’ sector [being] arguably one of the strongest in the country” (Vey, Hachadorian, & Katz, 2017). Moreover, “outside of medicine, the city is also home to growing clusters of digital health, financial services, advanced manufacturing, and media firms . . . and [i]t’s research capacity in engineering, automation technology, and computer science is expanding rapidly” (Vey, Hachadorian, & Katz, 2017). In addition, Philadelphia ranks among the top 10 metropolitan regions based on total annual public and academic research expenditures (Vey, Hachadorian, & Katz, 2017).

Philadelphia’s location on the eastern seaboard of the United States and its accessibility, a short train ride from New York City, Washington, D.C., and Boston, is another key asset, as is the region’s diverse and skilled population of 6.1 million residents (Philadelphia Navy Yard Request for Qualifications, 2018). Millennials, who are highly sought by innovative companies, are drawn to Philadelphia’s cosmopolitan, urban – but comparatively affordable – environment, with increasing in-migration as well as retention of these individuals graduating from the many colleges and universities in the region (Philadelphia Navy Yard Request for Qualifications, 2018).

The City’s innovation ecosystem has already enjoyed several high-profile successes. In 2019, Philadelphia was ranked among the top cities worldwide for innovation by Jones Lang LaSalle, the international real estate brokerage firm (Why Philadelphia is Emerging as a Global City, 2019). Due to its successes, Philadelphia is attracting more researchers, engineers, and scientists and, in turn, additional attention from venture capitalists (Vey, Hachadorian, & Katz, 2017). University City – an area comprising the portion of West Philadelphia closest to Center City and home to venerable institutions such as the University of Pennsylvania, Hospital of the University of Pennsylvania, Children’s Hospital of Philadelphia (CHOP), Drexel University, Wistar Institute, and University of the Sciences – is already on the radar of many as a notable innovation district. And its stature should only continue to rise with the development by Brandywine Realty Trust, one of the largest, publicly-traded, full-service, integrated real estate companies in the U.S., of Schuylkill Yards, a $3.5 billion, 14-acre development that, upon completion, will contain almost seven million square feet of space, including five million square feet of workspace, much
of it dedicated to office/life science use (Hurdle, 2018). Notably, Schuylkill Yards will serve as the headquarters of Spark Therapeutics, a CHOP/UPenn spin-off that was purchased by Roche for over $4 billion in early 2020.

At first glance, South Philadelphia may not appear to be a likely innovation hub in the City. It is a primarily residential neighborhood extending from South Street to the I-76 expressway and from the Delaware to the Schuylkill Rivers. While many may remember South Philadelphia from Sylvester Stallone’s 1976 film “Rocky,” the neighborhood is a much different place today. While large numbers of families of Italian descent remain in middle-class rowhouse communities, the area has become much more ethnically and socioeconomically diverse. The residential neighborhoods contain entry-level housing that attracts new immigrants (often of Mexican or Southeast Asian descent), middle-income housing, and upper-income housing that is among the most desirable in the city. While the neighborhood is predominantly residential, it does contain the Navy Yard and sports complex, which are the heart of the area’s innovation ecosystem.

ANALYSIS OF SOUTH PHILADELPHIA’S INNOVATION ASSETS AND OPPORTUNITIES

South Philadelphia features a wide array of innovative companies across many different industries. The breadth and depth of its innovation economy, which continues to grow both in the Navy Yard and elsewhere in the neighborhood, provide South Philadelphia with the necessary assets to continue to grow into a preeminent hub for innovation.

At the southern tip of South Philadelphia is the Navy Yard, a large shipyard and naval base that was established in 1801 and served the Navy until its closure in 1996 (Saksa, 2017). The Navy Yard had a tumultuous history until the World Wars and the Great Depression, during which time government investment fueled its expansion and the construction of the many brick industrial and loft buildings that remain today and give the area its historic character (Saksa, 2017). The Navy Yard languished in the postwar years until another short-lived boom during the Vietnam War (Saksa, 2017). Following Vietnam, the Navy Yard began its slow decline that eventually led to its closure and the subsequent transfer in 2000 of its remaining 1,200 acres to the Philadelphia Industrial Development Corporation (“PIDC”), a public-private economic development corporation founded by the City of Philadelphia and the Chamber of Commerce of Greater Philadelphia (Saksa, 2017).

The Navy Yard is the site of many firsts and other significant events: it is “the outfitter of the first American fleet, builder of the first warship under the Constitution, launcher of the largest U.S. battleships, and a frontrunner in aviation experimentation” as well as the location of “experiments instrumental to the construction of the atomic bomb” (Saksa, 2017). Today, under PIDC’s guidance as master developer and site operator, the Navy Yard has become the “coolest shipyard in America” (Philadelphia Navy Yard Request for Qualifications, 2018). Indeed, “the Navy Yard is a growing community of nearly 15,000 employees and 170 employers who occupy 7.5 million square feet across a mix of property types, including office, retail, industrial, hospitality, R&D, and institutional” (Philadelphia Navy Yard Request for Qualifications, 2018). These companies have been drawn, and continue to be drawn, to the Navy Yard due to its “strong talent base; a central location in the region (it is less than three miles south of Philadelphia’s central business district) with great highway, transit, and airport access; a historic, walkable riverfront community; and customizable buildings that can support office, research, laboratories, and production” (Philadelphia Navy Yard Request for Qualifications, 2018).

The Navy Yard is home to a number of leading innovative companies, including:

- Urban Outfitters, a progressive lifestyle retailer with stores throughout the world, has its award-winning world headquarters campus spread throughout multiple historic buildings, which have been sensitively restored to keep their historic aspects intact. Urban Outfitters has been recognized among the world’s most innovative companies “for nurturing very distinct, successful, and quirky retail brands” (Most Innovative Companies, 2011). Creativity and thinking “outside the box” are a priority for the company and its employees (Urban Outfitters, 2020).

- GSK, the global pharmaceutical giant, has its U.S. corporate headquarters in a Robert A.M. Stern designed LEED platinum building that was envisioned as a “workplace for the future” (GlaxoSmithKline Moving to New Building at Philadelphia Navy Yard, 2011). This building sold for a record price for Philadelphia in 2018 (Kostelní, 2018).
• Axalta, a DuPont spinoff that is a leading global supplier of liquid and powder coatings, operates its “Global Innovation Center, the largest coatings research and development center in the world,” in the Navy Yard (Axalta Opens World’s Largest Research Development Center Dedicated to Coatings and Color Development at the Navy Yard in Philadelphia, 2018).

• Iovance Biotherapeutics, a publicly-traded immuno-oncology company headquartered in Silicon Valley, recently began construction of its $125 million, 136,000 square foot office and cell therapy production facility, choosing the Navy Yard after conducting an extensive national search due to its “access to talent, ability to build a customized space, and Philadelphia’s unmatched immunotherapy R&D ecosystem” (Philadelphia Navy Yard Request for Qualifications, 2018).

• FS Investments, a fast-growing leader in alternative investments, is headquartered in a LEED-Gold certified building in the Navy Yard. In its 13-year history, FS has grown to almost $25 billion in assets under management as a pioneer in the burgeoning business development company industry (Blumenthal, 2019).

Numerous other innovative companies across many different industries are located in the Navy Yard, including WuXi AppTec, Jefferson Health, Vincera Institute, Adaptimmune, Tastykake, Revzilla, and Navsea. Penn State University and the U.S. Navy also have a significant presence there. At the Navy Yard, Penn State offers master’s degrees, graduate certificates, and professional development programs with a focus “on building energy efficiency and efficient energy management, with significant support from the U.S. Department of Energy and the Commonwealth of Pennsylvania” (This is Penn State at the Navy Yard, 2020). Elsewhere at the Navy Yard, the U.S. Navy has 1,800 civilian employees and a $1.2 billion annual budget to conduct “sustainable power and energy research that impacts [the] nation’s entire naval fleet for the future” (U.S. Navy - NAVSSES, n.d.). Penn State’s and the Navy’s focus on energy dovetails well with the Navy Yard’s leadership in energy innovation as “it offers the region’s most densely populated collections of privately-owned LEED-certified...
buildings, a 35-megawatt unregulated electric grid that is host to some of the nation’s leading smart grid research, and an innovative network of stormwater technologies built into the street grid” (Energy Innovations, n.d.).

To lead the next evolution of the Navy Yard, PIDC is seeking developers to assist in the planning and development of almost 110 acres of undeveloped land in the Navy Yard. PIDC’s vision for this land is a mixed-use district with R&D and life science facilities, dense multifamily development, and commercial amenities, including restaurants and retail.

The innovative nature of South Philadelphia is not concentrated solely in the Navy Yard, however. Immediately north of and adjacent to the Navy Yard is Philadelphia’s sports complex that includes the Wells Fargo Center, home to the NBA’s Philadelphia 76ers and NHL’s Philadelphia Flyers; Citizens Bank Park, home to the Philadelphia Phillies; and Lincoln Financial Field, home to the Philadelphia Eagles. While professional sports, which are anchored in history and generally only evolve incrementally, and innovation are not typically linked, Philadelphia’s sports complex is home to significant innovation, which further adds to South Philadelphia’s status and growth as an innovation district.

The Eagles have proven to be leaders in innovation both on and off the field. On the field, the Eagles’ innovative approach extends to its team-building and in-game decision-making. The team was one of the first to invest in and prioritize advanced analytics, which has contributed to the team’s success, including its 2018 Super Bowl victory (McManus, 2019). Off the field, the team has been recognized as one of the world’s most innovative companies for its early embrace of clean energy in its operations (Most Innovative Companies, 2011). The team’s “on-site renewable energy (produced by more than 11,000 solar panels and 14 wind turbines) supplies more than four times the power used during a season of home games,” which has allowed the team to significantly reduce its energy costs and environmental impact (5 NFL Football Stadiums Score Big of Efficiency, 2017). The Eagles sustainability efforts extend to water conservation, tree-planting, food waste decomposition program, carbon emissions offsets, bike share program, and closed-loop recycling, which resulted in the team becoming the first professional sports team to receive ISO 20121 certification, “an international standard designed to help organizations integrate sustainability into management practices and processes” (2018 Annual Report, n.d.). As a result, the Eagles’ stadium is recognized as one of the “greenest” stadiums in the world (5 NFL Football Stadiums Score Big of Efficiency, 2017) and is LEED Gold certified (2018 Annual Report, n.d.).

As with the Eagles, the 76ers have been among the most innovative teams in their sport. More than any other American sport, analytics have redefined basketball over the last decade. The 76ers were at the forefront of this movement beginning in 2013, with the team’s hiring of Sam Hinkie, one of the original adopters of advanced statistics in the NBA, as its general manager. This focus on innovation continues today with an analytics department staffed by “10 math whizzes and computer programmers, most of them with PhDs” (Hayes, 2018). The Sixers also started and fund an innovation lab located in Camden, New Jersey, just across the Delaware River from South Philadelphia. This incubator “supports rapidly growing, early-stage companies in the consumer product space and provides speed and flexibility, individualized, industry-leading consulting and investment opportunities to startups with potential” (Sixers Innovation Lab Crafted by Kimball Opens Doors, 2017). Selected companies receive “access to industry experts, executives, and financiers; third-party branding, marketing, and legal services; free meals and housing in the Philadelphia-area; and the opportunity to pitch industry-leading investors and...
venture capital firms” (Sixers Innovation Lab Crafted by Kimball Opens Doors, 2017). In the few years since its formation, the innovation lab has already had companies graduate, sign product distribution deals, complete seven-figure equity financings, and reach agreements to sell their products in major sports apparel chains (George, 2019).

The sports complex is home to more than just traditional sports. Innovative entertainment options are also coming to the area. A joint venture between Comcast Spectacor, a sports and entertainment company that is part of the Comcast family, and The Cordish Companies, a developer of large-scale, urban revitalization projects throughout the U.S., is constructing a $50 million “next-generation esports and entertainment venue,” which will be a “first-of-its-kind venue . . . as the largest new-construction, purpose-built esports area in the Western Hemisphere” (Fusion Arena, n.d.). Esports, which is “a form of competitive video gaming with multiple players battling against each other usually in teams, often in matches that are streamed live to throngs of young fans,” is quickly growing, with revenues expected to top $1 billion in 2019 and significant additional growth expected in coming years (Russ, 2019). Some believe that in the future esports could become as popular or even more popular than traditional sports, a development that South Philadelphia will be well-positioned to capitalize on given the location of this ground-breaking arena.

CHALLENGES TO SOUTH PHILADELPHIA’S CONTINUED ASCENSION AS AN INNOVATION HUB

Three specific challenges affect the Navy Yard, South Philadelphia’s primary innovation hub: lack of transit connectivity, lack of housing and entertainment, and sea-level rise. Philadelphia’s Broad Street subway line currently terminates at the sports complex, which is less than a mile from the Navy Yard. PIDC continually explores and implements transportation improvements for the Navy Yard, including offering private shuttle services to the Broad Street line stop at the sports complex as well as to downtown Philadelphia. There is broad recognition, however, that, until autonomous or other transportation improvements become more ubiquitous, extending the subway is the only way to truly connect the Navy Yard to the rest of the City, a project that is estimated to cost upwards of a billion dollars (Laughlin, 2019). Without this connection, the Navy Yard’s growth may be inhibited, though there is ample evidence to suggest that these transit challenges are not insurmountable.

As a result of a deed restriction recorded when the land was transferred by the Navy to PIDC, residential development has been prohibited at the Navy Yard (Philadelphia Navy Yard Request for Qualifications, 2018). However, this should soon change as PIDC has succeeded in removing this deed restriction for large portions of the Navy Yard and is seeking developers to construct high-density residential in the area (Philadelphia Navy Yard Request for Qualifications, 2018). Upon the completion of these residential projects, the addition of residents who are around on nights and weekends to the many companies and employees in the area should spur the Navy Yard to become a more vibrant and active neighborhood and lead to the development of retail and entertainment venues in the area, which should further enhance this virtuous cycle. Once this occurs, the area will only become more desirable for companies, employees, residents, and retailers, further elevating the

Figure 5: The Philadelphia sports complex.

Figure 6: Solar panels and wind turbines on Lincoln Financial Field, the home of the NFL's Philadelphia Eagles.
Navy Yard’s status as a preeminent location to live, work, and play.

Another challenge is the Navy Yard’s low-lying location along the Delaware River. As with many other properties located in coastal areas, the Navy Yard is projected to experience future flooding as a result of climate change (What Can a City Do About Climate Change? 2019). If the worst-case scenarios are realized, this flooding would have a devastating impact on the Navy Yard and other parts of South Philadelphia (What Can a City Do About Climate Change?, 2019). While there is still time to address this challenge and mitigate much of its effects, solutions will require bold and significant action across the public and private sectors, both domestically and abroad.

Finally, on a broader scale, South Philadelphia is not immune from the overall challenges faced by Philadelphia (and many other big cities), including persistent poverty, significant tax burdens, educational challenges, elevated homicide rates, and increased drug addiction and drug-related deaths (Philadelphia 2019: The State of the City, 2019). Unfortunately, these are not easily solvable problems and have indeed plagued Philadelphia for some time. However, the success of South Philadelphia as an innovation hub could aid greatly in addressing many of these challenges as the growth of the companies located in this area should have positive spillover effects for the remainder of the City and its residents.

CONCLUSION

South Philadelphia features companies at the forefront of innovation and advancement across myriad industries, including retail, energy, entertainment, sports, pharmaceuticals, chemicals, and finance. The diverse array of talented innovators working at these companies comprise an agglomeration of intellectual capital that is almost unmatched. Provided that the challenges specific to South Philadelphia as well as those affecting the City more broadly can be overcome, and the potential of these innovative companies and their employees is fully harnessed, South Philadelphia, and Philadelphia generally, will be poised to become a leading center of innovation.

WORK CITED


This is Penn State at the Navy Yard. (2020). Retrieved from Penn State at the Navy Yard: https://navyyard.psu.edu/this-is-penn-state-navy-yard


