INNOVATION DISTRICTS:
Economic Development, Community Benefits, and the Public Realm

By

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ABSTRACT

Innovation Districts are emerging across the country as vehicles for economic development, job creation, urban revitalization, and sustainable growth. As they continue to be developed, there is a need to rethink the role of community benefits in supporting economic resiliency within the innovation ecosystem. Public innovation centers have the opportunity to bolster this environment by providing needed community space, fostering exchange within the public realm, and helping to sustain a mix of budding startups and established firms. Innovation space such as incubators, accelerators, coworking spaces, and makerspaces are not foreign to the commercial real estate market. However, when these relatively new product types collide with the idea of public space and community benefits, there is potential to create something unique. In the spirit of a community center, innovation centers offer the broader public access to the rapidly growing innovation ecosystem and startup culture, all while helping to generate new ideas, products, and—potentially—jobs.

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In the wake of Silicon Valley’s success, innovation districts have emerged across the country as vehicles for economic development, job creation, urban revitalization, and sustainable growth. While many of these districts have their roots in organically formed tech or startup clusters, private developers are building on this momentum to unlock potential value in the clustering of specific industries.

As these districts continue to be developed, there is a need to rethink the role of community benefits in supporting economic resiliency within the innovation ecosystem. Traditionally, public benefits take the form of infrastructure, open space, cultural centers, or social welfare/housing. These benefits still play a role in any large development, however, in order to maintain a healthy ecosystem, developers of innovation districts must consider how innovation workers interact within the public realm. There is a need for not only a new type of public space that caters to collaboration and interaction at an individual level but also for a new type of working space where small companies can afford to locate adjacent to larger firms and capital.

Public innovation centers have the opportunity to bolster this environment by providing needed community space, fostering exchange within the public realm, and helping to sustain a mix of budding startups and established firms. Innovation space such as incubators, accelerators, coworking spaces, and makerspaces are not foreign to the commercial real estate market. However, when these relatively new product types collide with the idea of public space and community benefits, there is potential to create something unique. In the spirit of a community center, innovation centers offer the broader public access to the rapidly growing innovation ecosystem and startup culture, all while helping to generate new ideas, products, and—potentially—jobs.

The existing research on innovation districts provides valuable data on how innovation clusters form and the key components needed to create a successful industrial or tech cluster. What is missing from this research is a conversation about how cities can sustain these districts in the spirit of economic development and job creation. I
examine these districts through two lenses: the public sector and the private sector. While their ultimate goals of creating a thriving urban innovation district may align, their methods of arriving at and sustaining said district are distinct.

From a public sector perspective:
Cities are adopting plans for innovation districts to ensure economic resiliency. It is important to build a robust innovation ecosystem that will support these goals and be successful.

From a private developer perspective:
Mixed-use redevelopment offers great financial opportunity but in order to build a successful development, developers need both the approval of the public sector and an understanding of public space that will add value to the community.

This research strives to answer the following questions:
• How can an innovation district sustain momentum while continuing to foster the innovation ecosystem?
• What role should the public realm and civic space play in the creation of innovation districts?
• What type of community benefits are appropriate in innovation districts?

Through my research findings, I argue that fostering the growth of startup companies is a key factor in sustaining innovation districts. This comes in many forms: the public realm, innovation centers, affordable office space, and community space within private corporations. Outcomes of job creation and economic growth should incentivize city governments and private developers to build and plan for these types of spaces as part of the innovation ecosystem.

To address the physical design of the public realm and the role of public benefits within innovation districts, I offer the following recommendations: First, the public sector should encourage developers to include innovation space and flexible office space for startup tenants. Second, policy measures such as inclusionary zoning should be implemented to protect the affordability of housing and office space within innovation districts. Third, coworking and shared office space are crucial to the ecosystem and require supportive infrastructure and connection to the public realm. District Hall, a public innovation center in Boston, offers a strong model for a new form of community benefit that also takes the form of a public-private
partnership. Throughout this thesis I offer my dual perspective of a private developer and a city planner in the hope of encouraging continued collaboration between these professions and shared goals for the public realm.

DATA & METHODOLOGY
The research methodology for this thesis was two-fold: case studies and survey. For the core case studies, I traced the process of development of each district over time and combed through public documents, contracts, and news articles to better understand how each district was formed, who was involved, and how the public reacted to said district and planning initiatives. For Boston’s Innovation District, I also interviewed multiple key actors who were involved in the planning process as well as those currently operating and working within the space.

Second, this paper contributes new data on the Boston/Cambridge innovation ecosystem as a means of better understanding the needs of innovation workers. Using a survey sent to 280 anonymous individuals, I received 70 responses representing firms ranging from startups to venture capitalist firms, biotech corporations, and research institutes. The purpose of the survey was to identify how workers in the innovation district utilize public and shared space within the public realm in order to better understand the needs of the innovation community in Boston. These results informed my recommendations for planning and sustaining innovation districts.

STRUCTURE
Chapter 2 defines the traditional categories of public benefits and the methods by which they are extracted from private development. Chapter 3 examines the global phenomenon of innovation districts and why they are being implemented as an economic development and job creation tool. Chapter 4 looks at four case studies of existing innovation districts and how they were formed, where they are headed, and how they interact with the public realm and civic space. Boston’s Innovation District is distinct for its inclusion of an innovation center as a public benefit. Chapter 5 analyzes District Hall, one of the public benefits associated with Boston’s Seaport Square development, drawing on lessons from the other case studies. In addition, the chapter documents survey results from Boston/Cambridge innovation workers. Lastly, Chapter 6 makes recommendations and conclusions based on the above analysis, targeted towards city governments that are currently undergoing an innovation district planning process and private developers who seek to implement large-scale projects to create or foster an innovation district.
Seaport Square Development in Boston; District Hall, a Public Benefit from the Seaport Square Development.
(Source: Hacin + Associates 2013, Boston Global Investors 2015)
THE DEVELOPMENT PROCESS
Not all projects receive the green light of approval from public agencies. While zoning code and master plans are put in place to encourage specific development goals, protect current residents, and mitigate the negative effects of growth, oftentimes they are not updated as the city evolves. A developer sees opportunity in overlooked or strategically challenging sites. City planners and policy makers help inform what projects could benefit or harm a neighborhood and how they may bring amenities and revenue that would otherwise remain unrealized. In most American cities, a private real estate developer must first sign a development agreement with the municipality in order to move forward with the permitting process of a large project. Urban development projects of over 50,000 SF of new construction often require a variance from land use, FAR, or height regulations found in the zoning code. In return for flexibility in making these alterations, the city will often seek public benefits to help balance the impacts of new development. Alternatively, sites designated as Planned Development Areas (PDAs) often come with guidelines for development and incentives to include public benefits in the project. In either case, this process involves cooperation, negotiation, and the ability for both sides to see the long-term impacts of development.

This negotiation process is important to study as it impacts future city growth but it frequently happens behind closed doors. Within large-scale urban redevelopment, it is now common to have some sort of public-private partnership between the developer and the city agency, making it ever more important to ensure that both sides see eye-to-eye on the community benefits and goals of the project. Lynne Sagalyn describes the process of negotiation of Public-Private Developments (PPDs):

> Descriptions of projects, institutional structures, and financing arrangements are commonplace, yet we know little about the details of deal negotiations and project execution, and even less about project performance. We lack systematic evaluation of actual practice, reasoned debate on the thorny policy issues, and summaries of common implementation challenges.” (Sagalyn, 2007).
This is not only true for PPDs, but it is also true of most complex urban projects. Cities should have the tools to push for the highest level of public benefits and developers should be willing to provide spaces that not only contribute to the surrounding community but also to the project’s bottom line.

**CATEGORIES OF PUBLIC BENEFITS**

Public benefits take many forms. In order to better understand their intent and implementation, I grouped them into three categories: open space, social welfare/housing, and cultural amenities. It is important to note that I have excluded infrastructure from these categories, for while these improvements are often paid for by the developer, they are required to mitigate the direct impacts of construction, increased traffic, and increased utility loads from the development process.

**Open Space**

Open Space is the creation of publicly accessible open space within a development area or the provision of open space within a specific parcel. Open space has been a popular and logical offset for increased development, since with increased density and building height come restricted access to light and air. The rise of tenements and urban overcrowding at the turn of the Twentieth Century commenced a legacy of city planners’ concern over public access to open space as seen in the provision of parks, wider streets, and building setbacks. A city-owned park is a very different type of space than a private courtyard garden, but they both provide light, air, views, circulation and recreation space. In order for open space to be considered a public benefit, it must retain the spirit of true “publicness” – it must be fully accessible to or usable by any person of the general public.

Pocket parks and public plazas are popular examples of providing urban public open space; however, the quality of these spaces can be notoriously sub-standard. In many cities, such as New York, an exact formula outlines how much open space must be required for additional FAR in designated zones and then places a ceiling on the allowable increased FAR for each zoning district. In such cases, the physical property is still owned by the private owner, however the owner has opted to cede certain rights to the space, such as the ability to shut out the public. These are termed “privately-owned public spaces” or POPs. In 2000, Jerold Kayden documented all 503 privately owned public spaces in New York City created through zoning incentives, examining the “publicness” of these spaces as well as the
benefit that they actually give to the city in exchange for increased rentable square footage (Kayden, 2000). An important lesson from this work is the management and maintenance of the space over time. The city cannot physically remove floors from a new office building if the mandated public space is sub-par. Very few POPs offer the public a high-quality respite from the city. How can the city then enforce quality over time? The city can deny or revoke permits, there may be a Zoning Resolution penalty fee, and members of the public may opt to take the owners to court. To cure default of maintenance, the owner commonly posts a performance bond. According to Kayden, the City can also require the property owner to file a restrictive declaration against its property stating the owner’s obligations to the space and also “assign rents obtained from bonus floor area to the City if the public space is not provided as promised.” (Kayden, 2000). Importantly, restrictive declarations are connected to the land not the building, meaning they apply to all future owners as well. While all of these measures seem to protect the City from an owner who blatantly breaks a contract, history reveals that the City has chosen not to aggressively enforce a high level of quality upon property developers when agreeing to receive open space as a public benefit. Kayden documented that almost half of all POPs have been out of compliance with public access requirements, meanwhile allowing the city to grow ever denser (Kayden, 2000).

Additionally, since these spaces are created through incentive zoning, if the needs of the community change—i.e. there is ample open space that starts to corrode...
the urban streetscape—the policy and zoning continues to incent an open space requirement and allows a developer to receive additional FAR for providing unneeded public benefits. This inflexibility has led to Corbusian “towers in the park” along some blocks of midtown Manhattan, much to the dismay of city planners who view these projects as lost opportunities.

**Social Welfare & Housing**

Social welfare benefits usually take the form of affordable housing-related offsets. There is substantial literature on linkage programs that require developers to contribute payments to public housing trusts that in turn create affordable housing. “Affordable” can be defined by the standard rule-of-thumb that no more than thirty percent of a household income should go towards housing. Therefore, market-rate units are often out of reach for the lower and middle class population in dense urban areas (Stone, 2009). The shrinking pool of affordable housing units is a problem that many cities face, and the motive behind these linkage programs and affordable housing policies and the degree to which they are effective is often critiqued.

Many large cities will request that developers provide a contribution to affordable housing in return for development approval or increased density allowance; however, a handful of cities including Boston, Cambridge, San Francisco and Seattle have formal housing linkage programs. Since 1986, Boston has required developers to provide a monetary contribution (linkage) to the Boston Neighborhood Housing Trust for all non-residential projects over 100,000 SF. The logic behind housing linkage programs is that new commercial development attracts new residents to the city and therefore the developers are responsible for preserving or providing housing options. With new jobs and new residents, displacement will occur if not for the provision of affordable housing units or contributions to the affordable housing trust (Kayden, 1987). Like FAR calculations for open space, there is an exact formula in Boston for linkage payments per square foot of development: $8.34/GSF over 100,000 SF (BNHT, 2014). According to the BRA, the 7-year payment schedule provides incentive and flexibility for the project, which “allow developers to pay linkage fees out of operating revenues from the project rather than from ‘up front’ equity investment, reducing the financing necessary to begin construction” (BRA, Linkage Programs, 2000). Money from the housing fund can then be awarded to projects that wish to provide some form of affordable housing including rental units or homes and new construction or rehabilitation of existing property.
If the development project includes 10 or more units of housing, many large cities require the developer to build affordable housing into the project through an inclusionary zoning percentage requirement. In lieu of complying with the percentage of affordable units (Boston is 15% affordable), developers can often opt for a buy-out option which requires a payment to the affordable housing fund. The inclusionary housing option has much broader support among the planning community than the buy-out option because it usually provides more overall housing units in addition to more stable communities. According to John Barros, Chief of Economic Development for the City of Boston, “Allowing developers to buy out of the current 15% affordability requirements is creating neighborhoods with very little access and decreasing the stock of affordability while creating new burdens for affordable developments in new projects” (Ross, 2013). The concept of wrapping the public benefits (in this case housing) into the private development project for the betterment of the overall community is crucial to thinking about new forms of public benefits and how the public and private realms should interact.

**Cultural Amenities**

Cultural amenities and spaces include a wide range of benefits, from public art installations to community centers to theaters. On a small scale, communities may seek to attract more attention to public spaces by incorporating public art pieces or requiring them for the lobbies of new office buildings or developments. Large-scale cultural amenities include anchor institutions such as museums, art centers, theaters, performance halls, arts-education or training centers. Los Angeles’ California
Plaza and Yerba Buena Gardens in San Francisco were results of Public-Private Partnerships. Yerba Buena Gardens was built by the Redevelopment Authority, which wanted to build a Center for the Arts and used its publicly owned land to negotiate a development project that could finance such a large public cultural amenity.

For specific cultural spaces such as theaters, one example is the Theater District incentive zoning in Times Square, New York City. In this case, the identity of the area is built around the visibility of historic theaters with their billboards and classic marquee signage. The theaters thrive in a clustered district, attracting millions of tourists and theater goers and allowing the ticketing process to be coordinated. During the 1980s, New York sought to revive the Theater District from the dirty underbelly it had become, and thus included a theater incentive within the zoning code of the Midtown blocks surrounding Times Square—offering developers increased FAR in exchange for including a theater in a redevelopment project.

While not strictly “cultural,” I place community centers, libraries and other such neighborhood social spaces in this category as more common examples than the singular cultural jewel located downtown. These gathering spaces often lack specific programming and are underutilized by the public as a whole, much like their pocket-park counterparts. One way of remedying this has been to place these spaces
within other buildings, such as dedicating the ground floor of an office development to public functions or meeting rooms. However, this blurs the line of what is truly public and who should be a target user.

In the context of today's world of technology, the use and purpose of such community centers, libraries, and cultural spaces has shifted as the biggest need of today's public is access to digital technology. The 21st century “community center” has therefore become a place for idea exchange as much as programmed use and public function.

TOOLS FOR EXTRACTING PUBLIC BENEFITS
The public benefits received in exchange for permitting new development come in many forms and names: development contributions, exactions, offsets or trade-offs for incentives. Sometimes a special zoning district is designated as the location where such trade-offs are available; other times they are offered city-wide to encourage certain categories of development.

1. Exactions:
In the past, cities have used developer contributions as a means to raise cash, improve streets or public transportation, or complete civic projects even if they lack any connection to the development project under review. Legally, “essential nexus” must exist between a development project and the required public benefits in order to not be considered a “taking” under the U.S. Constitution (Nollan v. California Coastal Commission, 1987; Dolan City of Tigard, 1994). Besides being used to further a specific political/urban agenda, exactions are not always the best route for the overall success of a project. First, if a city is trying to encourage development, it is counterproductive to shift excess burdens onto the private sector. Second, if the public benefits exacted are not in-scale with the project vision, they may jeopardize the financial feasibility of the development and the benefits. “Whether development is done by private firms or public redevelopment agencies, it must be profitable for the entity to survive. It is a hollow victory to obtain exactions from a high quality developer that cause a project to go bankrupt. Beautiful but financially unsuccessful projects do not help the community in the long run” (Peiser, 1990).

2. Incentive Zoning:
Incentive zoning is a tool used by policy makers to incorporate specific public benefits
into the zoning code. It varies by community, but some incentive zoning may simply require a monetary contribution to a public benefit fund dedicated to affordable housing or historic preservation, for example, or it may require the provision on-site benefits such as specific building features, streetscape amenities, or public space. For example, the Theater Subdistrict in New York requires new projects to include a theater or entertainment-related use in order to maintain the character of the Theater District (Midtown Special Purpose District Zoning Resolution, 1982, 2012). Typically, such incentives are available in designated zones. If there is a demand for increased density (FAR or other measure such as unit count) within the zone, then such incentives can be successful in providing needed benefits to the city. Incentive zoning a good tool for obtaining public benefits in dense urban areas where land is scarce and demand is high. This is also more of a one-size-fits-all approach in that if many parcels were to be simultaneously redeveloped, there could very easily be a surplus of the intended benefit, causing either negative effects on the public realm or detracting from the funding/implementation of other more appropriate types of development offsets. This can be seen along 6th Avenue in New York, where the City gave additional FAR in exchange for public plazas on adjacent parcels, resulting in the absence of a streetwall and defined pedestrian realm.
3. Community Benefit Agreements (CBAs):
CBAs are a development tool being utilized in large cities such as Los Angeles and New York, where there is a history of development projects having been shut down through the political clout and media attention of community stakeholders (Musil, 2014). A CBA is a contract between a private developer and the community organizations that represent the stakeholders of the surrounding development. The agreement, initiated by the developer, outlines the public benefits required of the project in order to have community support and approval. The developer is then able to approach the city for permitting, knowing that it has community backing and buy-in. "With a CBA in place, the developer can accelerate the project approval process...Developers provide the municipality with the argument that development impacts have been vetted with the community and, as part of the CBA, community issues have been adequately addressed" (Musil, 2014). This process takes place outside of the development agreement that must then occur between the developer and the city government. This paper will not focus on CBAs as they primarily involve only two of the three affected parties of private development, leaving out the public sector. This is important since the municipal government represents the broader population and may have different goals than specific interest groups in the immediate area.

4. Public-Private Partnership Agreements (P3, PPD):
P3 agreements generally involve publicly-owned land that is leased or sold to be privately developed in return for specific public outcomes. In this case, public agencies have more leverage than in a typical development negotiation since they not only own the land but also control the permitting process. The city may then offer a Request for Proposals in which it chooses the project that best aligns with the public vision. According to Lynne Sagalyn, P3s achieve benefits that cannot be gained through incentive zoning: they target specific planning and fiscal goals that cannot be achieved using the broad brush of zoning; their policy objectives are linked to business terms and conditions instead of regulatory principles; and there are mutual business interests designed to keep both parties performing (Sagalyn, 2007). However, in order for cities to achieve a fair partnership, they have to recognize that it is not just a land transaction that they are selling, but rather a development opportunity, and thus timing of the market is key to these agreements. Another issue with the public benefits from P3s is that the city has little control over location—it receives a needed benefit where there is available/undeveloped public land, sometimes resulting in a non-equitable distribution of amenities or benefits that may be inappropriate for their context (Sagalyn, 1997).
ECONOMIC GROWTH: JOB CREATION & DEVELOPMENT

As the nature of development partnerships shifts to a fusion of the public and private sectors, the definition of public benefits is also evolving. Coming off the Great Recession and a period of increased awareness about climate change and public health, city planners are confronting the issue of economic growth within the context of physical limitations of smart urban growth. Clean manufacturing, tech start-ups, makerspaces, and vertical agriculture are all new forms of business that provide jobs and services within new forms of real estate products. Class A office space is no longer a ring of corner offices with cubicles at the center. Increasingly, major corporations such as Nissan, Intel, SAS and CBRE have switched to open plan office space with shared desks, living room-like common areas, high-end kitchens, and small meeting rooms. In an open plan, companies spend less money per square foot per office worker while simultaneously reporting an increase in productivity and collaboration.

The public sector is also increasingly aware of the civic opportunities that arise from this form of “innovation.” Job growth is one of the key concerns of cities—jobs mean tax revenue and increased spending. Startup companies and the tech industry have shown more job growth during economic downturns than any other industry, which makes them hugely attractive to diversify the current job base within a city like Boston. What do these types of companies need in order to flourish and what will draw them to a specific geographic area? Flexible office space, 24-hour amenities, and lot of social space. Innovators like to network, collaborate, and share ideas as opposed to staying within the confines of their offices. In thinking about public benefits, job creation and job training are a public benefit, if it applies to the true public in the same way that a public open space has to be accessible to all. If a developer seeks to attract startup tenants and members of the innovation ecosystem that other key tenants want to locate near, it seems natural that the city would also be supportive of such a project, recognizing its potential economic value.

In this type of project, open space, affordable housing, and cultural amenities might be required development offsets on a project-by-project basis, but if both the project and the developer benefit from job creation, the primary public benefit should work to attract talent and support the local economy. Giving innovators a place to gather, brainstorm, and develop new products could create and companies which in turn creates more jobs and increased economic impact. Having a central space for exchange is therefore crucial.
Shared Space & The New Public Benefits of Innovation Districts

In the context of today’s world of technology and shared space, one must rethink the idea of public space—what does a library look like in an age of e-books? Is it just a room with furniture and rentable devices? Is it truly any different from a community center, a youth center, or a business incubator? The biggest need of today’s public is the access to digital technology. Combining internet, skill-sharing and public space, this newly defined “community center” becomes a place for all ages to meet and exchange ideas instead of a sterile room where the elderly play chess and the occasional public meetings are held.

New forms of public benefits do not conform to a metric for determining the actual tradeoff between development rights and community benefits. Should there be a direct exchange of public square feet for increased FAR as with open space requirements? Additionally, it is unknown how these new spaces will maintain their purpose over the long-term: if an innovation district transitions to a residential community what does that mean for the community space? Also important to consider is how these benefits are incorporated into public policy without becoming a form of incentive zoning—the last thing any city needs is 10 innovation centers and no public parks.

This idea for a 21st century community center acting as a community benefit is therefore not new per se; however, as discussed in Chapter 4, there are existing models of these types of public space that can be built upon within the context of innovation districts. Notably, District Hall in Boston’s Innovation District not only serves the purpose of a public gathering space, but it also creates district identity and provides workspace and event space for the innovation community.
Two Diagrams of the Innovation Ecosystem (Second diagram adapted from World Business Incubation, 2013)
INNOVATION DISTRICTS

WHAT ARE INNOVATION DISTRICTS?
Innovation Districts are emerging in many cities as vehicles for economic development, job creation, urban revitalization, and sustainable growth. These districts are geographically bounded areas that cluster a group of advanced and emerging industries with housing and commercial development to create a synergy for growth of ideas, products, jobs, services, and new companies. Some districts have been planned through a master visioning process (South Boston Seaport) while others gained momentum through the gradual location of firms and talent and later defined and branded the clustering as an innovation district (Kendall Square). In a 2014 report by the Brookings Institution, three main types of Innovation Districts are defined: the anchor-plus model, the re-imagined urban area model, and the urbanized science park (Katz and Wagner, 2014). This thesis will focus on the phenomena of urban innovation districts, since suburban models (such as Research Triangle in Raleigh-Durham, North Carolina) have very different components of development, growth, and success.

The urban setting of these districts is important, as is the scale. Kevin Lynch defines district as “relatively large city areas which the observer can mentally go inside of, and which have some common character. They can be recognized internally, and occasionally can be used as external reference as a person goes by or toward them” (Lynch, 1960). An urban district is a microcosm of the greater city: it includes places where people work, live, eat, and recreate. It might be of similar scale to a neighborhood, but may not conform to official boundaries- it is more defined by a perceived narrative. The district in this case is larger than a singular development project. Importantly, district narratives are often used by city and metropolitan agencies as a means of advertising and marketing. This is true in the case of the innovation district—by labeling the place where innovation is happening, it can become more exciting and in turn attract other firms, startups, and workers to locate there.

Innovation districts are comprised of physical, economic, and networking assets that combine within a distinct culture, creating what is called the innovation ecosystem:
“a synergistic relationship between people, firms, and place (the physical geography of the district) that facilitates idea generation and accelerates commercialization” (Katz and Wagner, 2014). The critical ingredients for a successful innovation ecosystems vary by who is describing them but most often include a combination of talent, density of form and activities, culture, capital, and a supportive regulatory environment (Nager, 2014). In a presentation to the Downtown Austin Alliance, Gromley and Welch list geography, mass transit, entrepreneurs, developable space, financial capital, knowledge capital and cultural arts as the key components of a successful innovation district (2013).

**Clustering and Agglomeration**

The theory of innovation districts has grown from early work on the economic geography of clustering and agglomeration, such as Cooke’s notion of the Regional Innovation System, to a recognition that innovation can be linked to specific places and cultures (Cooke, 2001; Katz and Bradley, 2014; Joroff and Frenchman, 2009). The desired output of this clustering is the knowledge exchange that happens when innovation workers interact in these places (Bottazzi and Peri 2007; Sternberg, 2007). For the purposes of this research I will use the term “innovation workers” as the constituents of Innovation Districts, however, this same group is also commonly
referred to as knowledge workers (Toffler, 1990; Drucker, 1993). Innovation workers engage not only knowledge production but also more traditional professions such as venture capital, banking, patent law, communications, design, teaching, research, and other activities that support the ecosystem.

Interaction doesn’t just happen spontaneously. In order to harness the spillover of knowledge production, one has to create an environment that fosters face-to-face interaction among innovation workers. Von Hippel elaborates on this principle by using the term “sticky information” to refer to the transfer of tacit knowledge and concludes that it is best transmitted through frequent face-to-face interaction (Von Hippel, 1994, Polanyi 1962). These types of chance encounters—networking, conversations, social meetings—take place outside the confines of the traditional workplace. They often take place on the street, in building lobbies, in public parks and plazas, at retail establishments and cafes, and in other forms of public space. As stated in the Brookings report, “innovation districts focus extensively on creating a dynamic physical realm that strengthens proximity and knowledge spillovers” (Katz and Wagner, 2014). Therefore, true innovation districts must also embrace the principles of a good public realm. At the same time, these districts are reinventing the meaning of public realm, creating new forms of public benefits— they are an innovation in economic development.

INNOVATION: A NEW NAME FOR AN OLD CONCEPT?
At first glance, innovation districts may seem to be yet another fleeting trend in the cycle of urban planning ideology. Today, the word “innovative” seems to be ubiquitous across all industries, leading some researchers to question its significance in any context. Innovation is the creation of a new product or process. Is it innovative to organize industries, information, and culture in such a manner that it creates an integrated geographic area? When compared to other, more simplistic land use planning and policies that cities employ to usher in economic development goals, then yes, this method could be defined as comparatively innovative.

“Innovation Districts” may also be understood as a label for merging public and private realms and adjusting to the new realities of today’s workplace. While these districts do respond to philosophies that collaboration across sectors is important, I would argue that a true innovation district is more than putting a banner on a light pole within a mixed-use urban block that contains a startup incubator.
Cluster Theory
The idea that clusters of industries engender economic growth is not a new one. Jane Jacobs in The Economy of Cities helped define the concept of knowledge spillover. Jacobs promoted the importance of social interaction through public space—walkable streets, urban density, and parks—and cited random interpersonal contacts as the “small change” of a city’s wealth of public life.

Lowly, unpurposeful, and random as they may appear, sidewalk contacts are the small change from which a city’s wealth of public life may grow. (Jacobs, 1992).

It may be argued that such interaction also fosters an exchange of knowledge, which in turn produces economic spillovers. Extended to the context of cluster theory, these casual interactions then lead to economic growth. Rosenthal and Strange documented these knowledge spillovers and demonstrating that they drive innovation and increase with geographic proximity (Rosenthal and Strange, 2004).

Michael Porter in The Competitive Advantage of Nations (1990) posits that if one combines companies, suppliers, and service providers within a cluster, the cluster will increase productivity the resulting cost advantage will spur innovation. In the context of modern knowledge creation, labor mobility has become equally as important as firm location. This spillover can only happen when there is labor mobility. If the labor force is not free to move within the cluster, then knowledge spillovers will not happen and the cluster will therefore remain static. Economic studies show this need for mobility is particularly true within the tech sector and the ability of millennial IT workers to “job-hop” is part of what has led to economic growth (Tambe, 2013).

Building on this research, Porter, Stern and Delgado published “Clusters and Entrepreneurship” in 2010 siting data on the presence of clustering and its impact on startups and new business creation (Porter, Stern and Delgado, 2010). They found that clustering in space, or complementary economic activity, helps reduce barriers to entry for new firms. It also found that in the presence of clusters, startup firms have a greater likelihood of survival.

Spillovers and creativity are incredibly difficult to measure, which is why the causal relationships between the public realm and increased creativity, productivity, and spillover is yet to be proven through traditional social science methods. But leaving the causal relationship aside, or rather, the argument of which condition begets the
other, scholars do agree that where creativity and productivity exists, most often a strong public realm exists as well.

**Creative Clusters**

Dense and interactive connectors, cities are economic and social organizing machines. They bring people and ideas together, providing the platform for them to combine and recombine in myriad ways, spurring both artistic and cultural creativity and technological innovation, entrepreneurship, and economic growth. (Richard Florida, 2012).

Richard Florida’s research on the creative class further elaborates the clustering theory. His research focuses on the benefits of the “creative cluster” to stimulate economic growth. His main thesis is as follows: “Places that succeed in attracting and retaining creative class people prosper; those that fail don’t” (Florida, 2002). He recommends an economic development framework that cultivates diversity and invests in lifestyle amenities that are more than quality-of-life amenities, such as nightlife, galleries, performances, and outdoor recreation as opposed to sports arenas and retail malls. Part of his clustering theory is also that technological creativity, economic creativity (entrepreneurship), and artistic and cultural creativity are all interrelated and reinforce each other. While there has been debate over Florida’s findings and principles among some sociologists, they have been recognized by many global cities as having validity in practice and their application continues to grow.

**So are innovation districts just creative clusters by another name?**

Yes, they both encourage clustering of amenities, and view the public realm as an enabler of economic growth. In both cases, the quality of the environment is a factor in attracting high-quality talent and startup firms. However, unlike Floridian creative clusters, innovation districts may not focus on cultural institutions or art galleries as a means of attracting firms. Public realm features that directly relate to skill development and business development as well as quality of life are typically the priority within innovation districts.

Much like a shopping district or a mall, a cluster needs anchors to provide stability and draw outsiders. This anchor needs to be more than a large institution, it has to be one that produces revenue and spillovers for the other smaller companies and firms. Innovation districts expressly maintain a level of traditional, high income
anchor firms unlike creative clusters which may be comprised of any combination of firms or which may use a nonprofit cultural institution as an anchor, attracting prestige and adding to marketability of the area more than contributing revenue.

Innovation districts as they are being created and defined can be distinguished from Florida’s creative cluster in two key ways. First, they may not include existing older buildings and settings that represent an authentic and incremental development of an area (Florida, 2002). Kendall Square in Cambridge is comprised of a combination of new buildings and renovated industrial factories. However, the Boston Innovation District will be centered on new construction adjacent to a very old area (Fort Point Channel). While the neighborhood has a long history of industrial use and nearby artist lofts, over 50% of the total area will be new development including Fan Pier, Pier 4, and Seaport Square. South Lake Union in Seattle, 22@ Barcelona and the Cortex complex in St. Louis have all emerged within previously industrial areas and retain some of those structures but also were planned around mass amounts of new construction occurring over a relatively brief period of time. Entirely new streets and neighborhoods are created within these districts over very short development periods. In the end, innovation districts are one example of Florida’s ideas coming to reality, but in ways that are more advanced and subtle than he envisioned with more complicated dynamics and design.
WHY ARE INNOVATION DISTRICTS FORMING NOW?
Through a combination of factors, the last decade has proved to be a perfect environment for such innovation districts to emerge as an economic development and city-making strategy in many locations. First, demographics show an increase in young people living within downtown cores, fewer of which are married or have families. They are attracted by shorter commutes, more amenities, and walkable neighborhoods (Katz and Wagner, 2014). Urban dwellers willingly trade less living space for added diversity and amenities and are open to sharing these amenities within the public realm, as demonstrated by the success of micro-unit sales in urban cores such as New York, San Francisco, and Boston. Within this context, public space has regained value since these small units rely on their context in the public realm to supply amenities. Contrary to mid-century office parks and suburban home development, innovation districts recognize the value in a well-connected public realm that facilitates the collision of people and ideas (Florida, 2014).

Second, the Great Recession strongly impacted employment and affected city growth. In my opinion, this is the greatest reason why innovation districts surfaced and are continuing to be discussed today. Although some districts organically formed before the recession, formal plans for designated innovation districts have largely formed post-2007. Traditionally, cities competed to attract large anchor firms...
that brought with them the promise of good jobs and corporate taxes. While this indeed still happens, post-recession cities are much more aware of the risks that come with a lack of economic diversification, and are looking to develop their own economic assets, such as talent. Over a very short period of time after 2008, many neighborhoods found themselves with a large percentage of unemployed residents, real estate developers found themselves without long-term lease holders, and companies found themselves with too much rentable square footage. The negative impact of a large building whose single tenant went bankrupt can be felt neighborhood-wide. According to Darrene Hackler, “traditional economic development policy fails to recognize that large firms are not the primary generators of job creation” (Hackler, 2012). As Hackler demonstrates, new jobs are primarily created from small and middle-sized firms. By embracing startups and small businesses, cities can take steps to buffer this level of impact in the future. “Cities that create and foster a culture of innovation and entrepreneurship will be better positioned for economic recovery, job creation, greater resiliency, and the potential for regional economic transformation” (Hackler, 2012).

Third, the evolution of industrial firm location has left a significant impression on the built environment. During the 20th century, industry was pushed outside the city, due to health and environmental concerns as well as a need for large parcels of land with highway access. The scars of highways, abandoned railroads, industrial plants, and urban neighborhoods decimated by this transition have been left on the downtowns of many cities in the US and abroad, including Boston, San Francisco, Chicago, and London. Former industrial land is expensive to remediate, complex to
entitle, and hard to access. However, this land—up to one-third the total area of many former industrial cities—can also hold immense development opportunity waiting to be unlocked. These locations are where public and private sectors collaboration has taken root to attract production back into cities and build better, new kinds of urban places.

**INNOVATION DISTRICTS: DEVELOPMENT AND PUBLIC SPACE**

As outlined above, across the United States, many cities are experiencing increased urban population density and are looking to large swaths of previously industrial or otherwise underdeveloped land that present valuable development opportunities. In many cases, the public sector has a master planning vision or an economic development strategy that it hopes to implement with the right private sector partnerships. An example of this is the 2010 Boston Innovation District Initiative, which identified 1,000 acres of land being primarily used as surface parking and declared that new development would foster innovation. Through this official designation, the city was able to attract development and was able to test zoning regulations and new models of housing and public infrastructure targeted at the innovation ecosystem. Public incentives for new development include real estate taxes and jobs as well as the attraction of a revitalized area. If it is a large area, there is also the possibility of creating a hub for new industry. In Boston, the city strongly supports the innovation ecosystem and seeks to foster entrepreneurship to the extent that it has a newly appointed economic development head under Mayor Marty Walsh whose title is the Startup Czar (Harris, 2015).

In contrast, most of the Innovation Districts that I will use as case studies for this research, discussed in further detail in Chapter 4, were initiated primarily by private sector developers in partnership with public agencies or institutions. In these cases, the developer takes on the role of obtaining approvals for the whole development/master plan, however, as in the case of Seaport Square, it may then sell off parcels of the development once it has been entitled. The Seaport Square development in South Boston was put together by Boston Global Investors. Kendall Square in Cambridge experienced more incremental development but the key players were the MIT Investment Management Company and Boston Properties. Seattle’s South Lake Union was planned by Vulcan Real Estate. To real estate developers, multiple acres of available urban land present a rare opportunity and great potential. However, it is typical that a revenue-generating development does not comply with traditional
industrial land use regulations and permitting on such land. By combining resources, developers can execute the public sector’s long-term vision of stitching the built environment back together and in return work with the city to adopt new regulations.

**COMPONENTS OF INNOVATION DISTRICTS**

Important components of innovation districts are a diversity of uses and new research and development activities. The jobs that are created within these districts range from white-collar venture capital to retail employees and 21st century light manufacturing. This is key in understanding the resiliency of these districts as a component of the broader economy and a tool for economic development. Importantly, industrial use no longer has to be separated from mixed use development. Light manufacturing and production require much less space, is often environmentally friendly and may no longer require significant distance from office or residential neighbors. Makerspaces, laboratories, and R&D space are examples of industry-complimentary uses that still turn a profit for the developer and simultaneously play a role in the innovation ecosystem.

Once a developer takes on a large-scale, transformative project, to obtain approvals it will inevitably have to demonstrate provide public benefits as part of the entitlements process. In the past, such benefits typically included open space (parks and plazas), infrastructure improvements (streets, streetlights, water/sewer upgrades, parking, and streetlights), and affordable housing contributions. In innovation districts,
new types and options for public benefits have emerged, related to firm creation, innovation culture, and jobs.

As discussed earlier in this chapter, in order to maintain an innovation ecosystem, knowledge spillover and exchange is crucial. Public realm and specific types of facilities can act as a medium to draw people in and encourage this interaction and exchange. Enter the “innovation center.” As discussed previously, innovation centers are spaces where innovation workers (knowledge workers) in the neighborhood can work, network, learn new skills, host events, meet, and exchange ideas.

Innovation Centers and Connecting to the Public Realm

Giving innovators a place to gather, brainstorm, develop new products, and feel at home can support companies which in turn adds jobs and economic impact (Chatterji, Glaeser, and Kerr, 2013). Like the old guild halls in Amsterdam, cafes in Paris, clubs in London, or Faneuil Hall in Boston, having a central place for exchange is crucial to economic and technological advancement.

Many different types of spaces are emerging as a result of the new form of office space and the clustering of the innovation economy. Three terms in particular, are often used in conjunction with each other but have different meanings: coworking space, startup incubator, and innovation center:

- **Coworking spaces** are by original definition, a space with communal tables. Those who would normally work from home, are travelling, or happen to be in
the area can come in and pay for a day pass or buy a monthly membership to work in a business environment with wifi and other office-like amenities.

• An **incubator** is a company or nonprofit whose mission is to aid startups in the process of becoming a business. This usually includes partnerships with venture capitalists and mentorship activities. Most incubators have incubator spaces, which are generally coworking spaces or desks for those startups participating in the incubator. They could be anything from high-tech lab space such as LabCentral to prototyping maker-space like Greentown Labs to run-of-the-mill office space depending on the industry focus of the incubator.

• An **accelerator** is a specific type of incubator that works with early-stage startups for a defined, short period of time (usually 90 days to a few months) with the goal of increasing growth. An accelerator is also an investor: it gives startups a defined amount of capital and in exchange for capital and mentorship, accelerators usually require roughly 5% ownership in each company. TechStars and MassChallenge both host accelerator programs.

• An **innovation center** is a place for gathering and idea exchange. While many innovation centers have other components that may include rentable coworking space or a resident incubator, the main function of an innovation center is to provide physical space for those within the innovation economy to gather. It may host meetings, events, or educational programming, bringing together members of the innovation ecosystem and the local community.
Public innovation centers reach out to the surrounding community in a way that is different from coworking workplaces. For example, the Cambridge Innovation Center (CIC) is a private coworking space within an office tower that often hosts public events. However, semi-private “innovation centers” such as the CIC are different from public innovation centers which tend to offer a broader range of events and programming to the larger public. The CIC manages to avoid becoming purely an amenity space for building tenants space through continuous networking events.

Innovation districts and innovation centers are not just important to the immediate area but are also important to shaping the image of the city and its region’s economic growth and competitiveness. In an age where talented workers are highly mobile, branding is crucial. Cities compete to attract large corporations that will bring thousands of direct and indirect jobs and economic impact, as well as startups.

One example of job creation within the innovation ecosystem is MassChallenge, the world’s largest startup accelerator. MassChallenge is a Boston-based non-profit organization that started in 2009 as a means of promoting startup companies and innovators and connecting them to capital. Born out of the Great Recession, it states in its vision that “the current economic crisis is an enormous opportunity in disguise. By investing now in innovation and entrepreneurship, we can transform whole industries and define the next generation of economic growth engines.” MassChallenge primarily issues a global startup competition, offering mentorship, partnerships and networking, and capital. While the company is an accelerator, it provides shared workspace for all of the startups that are competition finalists, promoting innovation through idea exchange and connection. MassChallenge sees itself as a catalyst and has been an active part of the Boston Innovation District through workshops and events. Since 2010, it has accelerated 617 companies and has created an estimated 4,802 jobs worldwide (MassChallenge, 2014). While some of these foreign startups only come to Boston for the few months of the program, others chose to stay and hire local talent to grow their companies, contributing to the local innovation ecosystem.

Increasingly, “cool factor” has become part of firm location, marketability, and branding—Google, for example, has built an empire with an image of being young, hip and alternative. In response, every city wants those young, highly-paid tech workers paying taxes and spending money at their businesses. Beyond purely attracting talent, there a challenge in retaining it. Boston, for example, is home to
some of the world’s best universities. The local intellectual capital is extraordinary. However, the majority of these young innovators opt to leave the Boston-area upon graduation, creating a “brain-drain” (Lima 2014, Modestino 2013). By leveraging the idea of tech clustering and innovation through the creation of an Innovation District, Boston hopes to retain some of the local talent that would otherwise leave.

As briefly discussed in the previous chapter, the trend of open office space with an increase in community or gathering spaces and amenities for all workers has become the standard for traditional firms and for younger startups to better harness worker productivity and maximize potential. The reasoning behind the need for these types of office spaces is similar to the research on regional agglomeration—grouping people or firms leads to collaboration, creativity, knowledge exchange and spillover effects. In this sense, community spaces operate both within a macro-scale of the district and on a micro-scale of a distinct office space.

**Conclusion**

Regardless of the argument the definition of the word “innovative,” assimilating industries and service sectors into a compact, dense, amenity-filled urban neighborhood is a natural move for 21st century cities, which is in tune with broader technological and economic changes that are underway. For these reasons, I predict that these new forms of development will continue to gain momentum and popularity, with or without the “innovation district” title, and according to many researchers, these districts are here to stay (Katz and Wagner, 2014).

Within the context of the innovation district, the innovation center represents a new form of public benefit situation within the fragmented but interconnected, mixed-use, live-work, public-private, urban districts being created in post-industrial downtown cores. By looking at specific innovation districts around the world, one can begin to piece together the types of places that foster the innovation ecosystem and how they incorporate the public realm with the needs of job growth and economic development.
Seattle’s South Lake Union

South Lake Union Plan by Urban Design Associates and NBBJ prepared for Vulcan
The following case studies examine the establishment of innovation districts: Seattle’s South Lake Union, London’s Silicon Roundabout/Tech City, Cambridge’s Kendall Square, and Boston’s South Boston Waterfront Innovation District. Each district has a unique history and pattern of development but they have common goals for fostering the innovation economy, boosting growth, and shaping the public realm. They also demonstrate varying levels of private investment and public partnerships.

SEATTLE: SOUTH LAKE UNION + U DISTRICT

Seattle’s South Lake Union (SLU) innovation district is a previously industrial area located south of Lake Union. The district is roughly bound by Lake Union and Blaine Street to the north, I-5 to the east, Denny Way to the south, and Aurora Avenue and Broad Street to the west. In the late 1990s, Vulcan Real Estate began buying up land occupied by automotive businesses and warehouses. In 1996, following a failed vote to create a large park (Seattle Commons) on the site, Paul Allen, Vulcan’s owner and Microsoft co-founder, worked on the early stages of a redevelopment plan (King Staff, 2012). With a land assemblage of 60 acres, Vulcan was able to create a life-sciences and technology center that includes mixed-use office and residential buildings as well.

Why Seattle? Since the 1990s, Seattle has been home to tech giant Microsoft but it lacked the mid-to-small-sized tech companies (SMEs) that help complete a robust innovation economy. According to Hadi Partovi, CEO of Code.org, the growth of middle tier companies in the $10B-$100M range (Expedia, Zillow, Tableau, Big Fish Games, Bluekai) combined with the appearance of Silicon Valley companies’ offices (Google, Facebook, Twitter, Dropbox, Uber) greatly boosted the local tech industry (Partovi, 2015). Each of these Silicon Valley offices, some of which have only moved to the Seattle area in the last year, hires thousands of workers. Part of the reason behind choosing Seattle? The most common occupation in Washington
State is software developer (Bui, 2015; US Census Data). This is largely due to the historic presence of Microsoft and strong academic and institutional programs such as University of Washington (UW), making talent a strong attraction for global companies. By building up a robust innovation ecosystem, startups in Seattle now have growth options beyond going public (IPO) or getting acquired by Microsoft or Amazon (Partovi, 2015). Lastly, the local government has also taken specific steps to support small business growth with the Business Retention and Expansion Program (BREP) to help them gain access to capital, expand into new markets, and navigate government processes (National League of Cities Report, 2014).

During the development of the South Lake Union district, Vulcan engaged many local community groups in the discussions around “design and location of housing, infrastructure, and amenities” (Katz and Wagner, 2014). While the project was primarily developed by a private entity, the city played a big role in supporting the district as well. By 2004, SLU was named Seattle’s sixth urban center, keeping in line with the City’s 1993 planning initiative to concentrate 75% of the city’s growth within five designated urban districts. Former Mayor Greg Nickels was a strong supporter of the district, seeing that the development “would serve as an economic driver for the city and region” (Office of Economic Development, 2012). The city supported the development by implementing zoning changes to support land use for life sciences and technology, investing in infrastructure such as the new streetcar line, and investing in public amenities such as Cascade Park and Lake Union Park and Mercer Corridor (City of Seattle, 2012).

The district is anchored by Amazon’s corporate headquarters. The rationale behind this decision was that entrepreneurs like being near companies such as Amazon, thus drawing talent (Katz and Wagner, 2014). Other institutions also located in SLU, such as the University of Washington Medical School advanced research campus, Seattle Biomedical Research Institute, Fred Hutchinson Cancer Research Center, The Bill and Melinda Gates Foundation, Allen Institute for Brain Science, and the American Lung Association. SLU also hosts a number of cultural spaces and amenities such as the Museum of History and Industry, the Puget Sound Maritime Museum, a performance hall, and multiple art galleries. Early on in the development, many startups populated the neighborhood but today they primarily occupy one of the few co-working spaces such as WeWork. According to the South Lake Union Discovery Center, more than 15,000 people now live in SLU.
Today Vulcan owns about one-third of the total district. In 2012, there was a proposal to re-zone SLU, a move that would add an estimated 22,000 jobs, as the area continued to grow. South Lake Union has had more than $2 billion of private investment between 2003 and 2012. And since 1995, 12.5 million square feet of multi-family, office, biotech, and retail space has been developed in South Lake Union with another 2 million square feet under construction (City of Seattle, 2012).
In 2005, Vulcan opened the Discovery Center as the office for condominium sales at 2200, Enso and Veer and to attract commercial tenants to the development. Centrally located at Denny Way and Westlake Avenue, the Discovery Center was originally the sales office but it is now used as an event space and meeting venue in addition to marketing for the area. Megan Murphy, residential marketing manager of Vulcan Real Estate explains “The Discovery Center has gone through many transitions over the years, but it has always been a great place for the community to come together;” (Discover SLU, 2015). The Center does make a fun, high-end event space, but with “technology-laden conference rooms, a sleek gallery space with a scale model of SLU, [an] illuminating video about South Lake Union, [and] mod furniture” its purpose is clearly to promote the physical development and not to offer public space for innovation workers in the area (Discover SLU, 2015).

**Transition of SLU + the Birth of a New Innovation District**

Today, with SLU about half-way to build-out, new infrastructure improvements such as a dedicated streetcar line have been completed, and restaurants, coffee shops, and cultural amenities have helped create a popular urban center. Market rents continue to rise and are now reaching an unattainable level for small businesses in the area. Due to this shift in affordability, many startups have relocated, and one area in particular is being planned as Seattle’s next innovation district: University District. University District, or U District, is a 405 acre area adjacent to the University of Washington campus (U District Vision Plan, 2013). This new offshoot is different than South Lake Union in that it was not master planned or developed by a primary
private entity, and it has a focus on building relationships with non-life-science institutions as well as creating a public realm that fosters the innovation economy. Aside from the institutional and talent presence offered by the University, one of the key components in making this a new technology hub is the light rail expansion, with stations slated to open by 2016.

TechStars start-up incubator, UP Global, a non-profit dedicated to supporting the startup economy and Founders Coop seed fund have all moved to U District from South Lake Union. These companies located in SLU before Amazon started to expand to the old warehouse buildings that have either been redeveloped or are slated to be redeveloped; Chris DeVore, Director of TechStars and Chair of the Economic Development Commission, explains that back then the neighborhood was “a more interesting, diverse mix of physical spaces for startups” (Romano, 2014). He adds that startups need inexpensive, flexible space with smaller footprints than is offered in newer office buildings. This is why older warehouses are often home to these businesses, along with co-working spaces where companies can expand office space on a month-to-month basis.

Because the concept for the innovation district came before any new development had taken place, tech community leaders knew they would need a “center of gravity” in order to really define the district. One of the U District’s first steps in placemaking was the conversion of the half-vacant UW Law School building Condon Hall into Startup Hall, a “home-base for promising early-stage companies and the hub of what’s expected to be Seattle’s next startup district” (Pepin, 2014). The Hall reflects many of the characteristics of District Hall in Boston, and was the result of entrepreneurial community leaders including Chris DeVore (Pepin, 2014). The building is anchored by two key tenants: TechStars and UP Global, and it also has co-working space, public meeting spaces, and social gathering space with a lounge and ping-pong tables. It houses an office for UW programs such as Buerk Center for Entrepreneurship and hopes accommodate up to 20 small-stage startups.

Part of the vision behind Startup Hall also stems from the recognition that while a large company like Amazon attracts talent and fuels the innovation economy, it can also create a barrier to the flow of information exchange and networking. DeVore describes Amazon’s presence in SLU: “All the buildings are badge-access only, so unless you have friends at Amazon, it’s not a very porous community.” (Romano, 2014). UW and the City have a common goal to increase “organic interchange” as
a means of developing the innovation economy. UW holds the lease to the building with UW Real Estate managing the co-working space with input from an advisory committee to ensure that it remains economically viable and aligns with the vision. Since opening, there has been ample interest in events and workspace, with some groups already holding regular meetings and office hours.

The startups currently taking root in U District are ahead of municipal planning to the extent that zoning changes are currently awaiting city council approval (as of May, 2015). These changes would increase height limits to encourage residential construction and commercial space, typical of transit-oriented development. Community outreach for the planning process began in 2012 and since then the City produced the U District Urban Design Framework, a Strategic Plan for short- and long-term action, and the final Environmental Impact Statement released in January 2015 (City of Seattle, 2015). The U District Partnership, an organization of local business and stakeholders, helped produce the community’s vision for an innovation district
in a 2013 strategic plan. As development plans move forward for the new innovation district, organizers are looking for ways to ensure that the innovation economy will be rooted in the community. One key concern is that as the area gets developed, the U District is in danger of causing increased housing prices for UW students who require a lower cost of living than the average software developer. (Romano, 2014)

**Takeaways:**

- Private investment in Seattle was good for the regional economy and attracted talent
- Middle-tier companies need to be present within the innovation ecosystem
- A lack of support for small companies can lead to their relocation to other areas
- Affordability of office space and a porous public realm for networking are key
- Provision of public space and public access to amenities sets a tone of openness and communication
- A global corporation or an academic institution can serve as an anchor to the district and attract talent

**KENDALL SQUARE, CAMBRIDGE**

Kendall Square, which is not actually a square but a geographic area located adjacent to the Massachusetts Institute of Technology campus in Cambridge, Massachusetts, is a well-known innovation district model. Kendall Square has all of the recommended elements of a successful district: an academic anchor (MIT), talent (students from MIT, Harvard, and the 50 other Boston-area universities), prime location and public transit (Red Line MBTA station and a bus route), existing buildings but also large swaths of undeveloped land, private investment (Boston Properties), and municipal support for zoning, planning and infrastructure.

The district is anchored by not only MIT but also by biotech companies Pfizer, Biogen, Genzyme, Millennium, and Novartis, and tech companies like Microsoft, Google, IBM and Nokia and the Broad Institute and the Koch Institute for Integrative Cancer Research. MIT is in the early stages of a large expansion called the Kendall Square Initiative, which includes mixed-use graduate housing and retail buildings as well as office and lab buildings along Main Street. The long-vacant Volpe site is still awaiting development. And there is an additional 1.4 million square feet (in 2013) of construction in the pipeline. The total investment in Kendall Square is estimated at $2 Billion (Weintraub, 2013).
History of Kendall Square

Kendall Square grew as a hub for life sciences and technology firms and was first identified as an innovation district by planning firm Goody Clancy in a 2011 report on the area’s future growth. Like most of the Boston-area, this part of Cambridge sits atop the infill of a salt marsh. The Longfellow Bridge connecting Kendall Square to downtown Boston was completed in 1907, followed by Kendall’s first subway line in 1912, allowing goods and workers to inexpensively flow between Boston and Cambridge, making the area ideal for industrial manufacturing. When MIT moved its campus from Back Bay to Cambridge in 1915 it was a controversial decision as the area was isolated and surrounded by industry but land was cheap and allowed the young institute to grow into what it is today. The area has roots in technology: it was the site of the first “long-distance” phone call from Alexander Graham Bell in Boston to Tomas Watson in Cambridge and it was also the birthplace of the Polaroid Corporation in the 1940s.

By the 1950s and early 1960s, urban renewal was transforming large swaths of Boston and it reached Cambridge in the form of office park developments such as Technology Square. Developed as a group of four office and lab buildings that sat on a raised platform, the complex was completely separated from the public
realm. There continued to be little in the way of commercial activities or amenities surrounding the MIT campus until 1989 when One Kendall Square transformed a cluster of industrial buildings, including the Boston Woven Hose Factory, into a vibrant mixed-use campus. This project became the model for redevelopment in Kendall Square and set the precedent for creating mixed use lab and office space that connected to the neighborhood through ground-floor retail and public space.

Another project that emerged during the urban renewal period was Cambridge Center. The 1965 Kendall Square Urban Renewal Plan sought to facilitate development of 42 acres of land in Cambridge, also giving the Cambridge Redevelopment Authority (CRA) the power of eminent domain and a role as developing partner in the projects. In 1979, Boston Properties was named the “developer of record” for 24 acres of the Urban Renewal Area directly across from MIT, and since then they have built 14 buildings on the site, known as Cambridge Center (City of Cambridge, 2015).

The 2.7 million square foot project was developed as a homogeneous cluster of brick buildings and includes office space, MBTA access, and the Kendall Marriott Hotel (Boston Properties). It reflects office campus design of the 1980s, with over-scaled blocks and wide streets leaving little for the pedestrian realm. There is public space sprinkled throughout the development, notably in the form of the main plaza at the MBTA Station and a rooftop garden that sits atop a parking garage. Buildings within the Center have been renovated and the development continues to be improved as it has become the front door to the now bustling district. Tenants of Cambridge Center include Microsoft, Google, The Whitehead Institute for Biomedical Research, and The Broad Institute of MIT and Harvard, which moved into its $375 million 375,000 square feet of lab and office space in May of 2014.

Boston Woven Hose Factory c.1890s (Source: Cambridge Historical Society); One Kendall Square 2013
**Public Space:**

**Cambridge Innovation Center, VentureCafé, and Microsoft NERD Center**

Across the street from One Cambridge Center, the Cambridge Innovation Center (CIC) occupies 207,000 square feet of One Broadway, a brutalist 1970s office building owned by MIT. CIC was one of the early members of the innovation ecosystem in Kendall Square and was originally conceived as a startup incubator. Its founders, MIT graduates Tim Rowe and Andrew Olmstead, later identified the need for affordable, flexible office space in Kendall Square and changed the CIC business model to deliver this type of space. Today, the CIC provides full-service short-term office space for companies varying from a single individual to a full team. As of 2015, it houses about 600 companies (from freelancers to 50 person companies) as well as the C3 (Cambridge Coworking Center) (Boston Globe, 2015).

Throughout its evolution, the team at CIC was very active in the rapidly growing Kendall Square innovation economy area and recognized the lack of a physical place for idea exchange and networking to better foster the innovation ecosystem. Thus, the company decided to start hosting public events for the tech community. As Tim Rowe, founder of VentureCafe explains: “there was a need for a neutral, open meeting ground… it needed to be a movement not a business.” He further explains, “To have people stay and chat is antithetical to commercial food and beverage establishments. The space worked. Venture capitalists showed up and started doing office hours.” (VentureCafé Podcast Interview, 2014). What began as a weekly Thursday night gathering evolved into creating a non-profit arm of CIC named after the weekly gathering: The VentureCafé Foundation. In the years since establishing
their first event, the non-profit has grown dramatically and is now the non-profit operator of Boston’s District Hall and soon to open Dudley Innovation Center, and has advised other cities hoping to build a physical hub for innovation. The private arm of CIC has also expanded operations to downtown Boston, St. Louis and Baltimore.

Following suit of the CIC, a handful of other private businesses in Kendall Square opened their doors to host public events or offer coworking space to help foster networking and idea exchange. Microsoft’s New England Research and Development Center (NERD Center) is one Kendall Square’s most popular places to host events pertaining to tech and the startup economy. Since establishing a presence in Kendall Square, Microsoft has made a mission of connecting innovation workers and the tech community. In a blog post written by Microsoft about its sponsorship of MassChallenge, a startup accelerator, the authors explain Microsoft’s investment in the local startup economy:

Since the opening of NERD we have had an ongoing dialogue with the local community about the biggest areas of need and where Microsoft can add the most value. The constant thread in these conversations has centered around the local innovation economy and lack of sustained progress. We have responded to this need by opening NERD as a rallying point for technologists and investing in people and programs like the MassChallenge that the community feels are important. We’ve taken a ‘rising tide will lift all boats’ approach and we feel that it’s vital to everyone’s collective success to have a thriving innovation ecosystem in their back-yard. (Microsoft New England, 2010).

Located at One Memorial Drive with views of the Charles River and the Boston skyline, the Center has a range of charges for its prime event space, offering some spaces for free. Local organizations and nonprofits can rent space for free provided their event aligns with NERD’s mission to “attract and engage the local tech ecosystem.” (Microsoft New England, 2015). There are some hurdles for a group wanting to host a “public” event, such as the requirement of liability insurance and for all guests to register with government identification. Additionally, all Microsoft employees are invited to attend any event occurring at the Center.

In 2011, Microsoft worked with property owner Boston Properties to move Dogpatch Labs and TechStars, two startup incubators, to the 6th floor of One Cambridge Center with free rent and access to Microsoft software and events. Senior VP of
Boston Properties, David Provost, stated in a press release why this partnership was a good business move from a private development perspective: “Kendall Square and Cambridge Center are home to some of the best and brightest innovators in the country. We look forward to seeing Dogpatch Labs and TechStars flourish at One Cambridge Center supported by high performance work space, NERD, and the positive momentum they bring to the community” (Microsoft New England, 2011).

Dogpatch provided free office space to startups while in One Cambridge Center, and startups that used its space across the country include companies such as Instagram, Bark Box, and Spindle. Dogpatch Labs has since closed all of its incubator offices except its Dublin branch, instead operating in an investment and mentoring role through institutions. David Barrett, of Dogpatch’s venture partner Polaris Partners explains this transition: “Over 3 years the ecosystem here obviously progressed to the point where Dogpatch Labs was not as needed by the community at large — nor any longer as unique as it was at its beginning… the BOS/Cambridge ecosystem is now obviously well-served.” (Longo, 2014). In 2014 TechStars also moved out of One Cambridge Center and into a new office in downtown Boston.

Another signal of the rapidly changing environment of Kendall Square can be seen through private real estate transactions that have taken place over the last few years. Notably, in 2014, Oxford Properties, a Canadian company, acquired One Memorial Drive (built in 1987; renovated in 2008) as part of a $2.1 billion office portfolio sale. This was one of the largest real estate transactions in Boston history (Kirsner,
Real estate finance analysts see this level of foreign investment as a sign of strength in the market. Very low office vacancy rates and increased competition also demonstrate that Boston is a desirable place to live and to invest in.

**Cambridge Zoning Amendment**

In an effort to help combat rising office rents that drive out smaller companies and break apart the innovation ecosystem, the City of Cambridge enacted a new zoning ordinance similar in spirit to inclusionary zoning for affordable housing. The new district zoning was enacted in 2014 (PUD-5; K2 Districts). It requires that for any development proposal containing at least 200,000 square feet of new office space, the developer must include Innovation Office Space that is equal to 5% of the new gross floor area. It also requires that this space must remain in 20,000 SF units if broken into smaller spaces. The Innovation Office Space is defined as space with lease agreements for individual businesses lasting approximately 1 month with a maximum of 2,000 SF (or 10% of the total space) per company. Shared resources must occupy at least 50% of the space in the form of coworking areas, conference space, office equipment, supplies, and kitchens. Lastly, Cambridge defines the projected users of the space:

Individual entities occupying Innovation Office Space may include small business incubators, small research laboratories, office space for investors and entrepreneurs, facilities for teaching and for theoretical, basic and applied research, product development and testing and prototype fabrication or production of experimental products. (13.89.3.2, PUD-5 District Zoning 2014, City of Cambridge).

While it is a big step forward for Cambridge to require larger office developments to provide this type of space to smaller startups who need flexibility to grow, unlike an affordable housing provision, the new zoning does not have a price ceiling for this new Innovation Office Space. In an interview about the new zoning, Cambridge Planning Director said that “We’re trying to give the market the flexibility to figure it out,” (boston.com). Landlords will have to decide whether this space should be charged at market rent or if other building tenants can subsidize the space. Another potential question for the innovation ecosystem in Kendall Square is the fate of companies with more than 10 employees—those that are too large for innovation spaces but too small to pay market rents for entire office floor plates. Only time can tell if these steps will be enough to preserve the innovation ecosystem of
Kendall Square or if it will transform into a hub of large corporations surrounding the Cambridge Innovation Center and MIT affiliates.

**Takeaways:**

- MIT’s presence is crucial as an anchor providing talent and resources to Kendall Square
- Networking and social space within the public realm has been a constant presence through private and non-profit actors
- Privately operated public space has been successful but is limited in impact with the broader community
- Private investment has been attracted by talent as well as the physical environment and real estate development opportunity associated with revitalization
- Firm location has begun to shift towards downtown Boston due to rising rents and lack of space
- Cambridge has addressed the lack of affordable office space for startups through:
  - District zoning measures
  - Exchange of free space for marketability of having resident startups as part of the district culture

**SILICON ROUNDBOUGHT/TECH CITY, EAST LONDON**

Silicon Roundabout, also known as East London Tech City, ranks as the world’s third-largest technology cluster by number of firms and technology workers behind New York and San Francisco (OnlineSupport, 2014). London’s digital technology sector is predicted to grow by 5.1% a year over the next decade, resulting in £12 billion of growth and 46,000 jobs (Ledwith, 2014). Like other innovation districts, it is located off major public transportation and bus lines. The district grew from a handful of tech companies in the early 2000s who located near the Old Street Roundabout, which is now the heart of the innovation district. In 2010, Prime Minister David Cameron announced plans to accelerate the tech cluster. The number of tech companies is estimated to have grown from 85 in 2010 to 1,472 in the “East London technology ecosystem” as of 2015 (TechCityMap, 2015). Global companies Amazon, Microsoft, Facebook, Cisco, 7Digital, PaveGreen, Barclays, McKinsey & Company, and KPMG have all opened offices in the area. Academic institutions present include a private branch of Imperial College London, University College London, and Loughborough University. In 2012, Google opened its Campus London building, which hosts events, speaker series, and offers coworking space.
Map of Silicon Roundabout, London, UK

Silicon Roundabout/ Tech City Map (Source: Jason Hawkes, Wired UK)
On a country-wide level, the British Government introduced a number of policies to make the UK a first choice for entrepreneurs and investors. These include: Startup Visas for foreigners, the Seed Enterprise Investment Scheme (SEIS) which provides 50% tax relief on seed investment, R&D Tax Credits, Patent Box which lowers corporate tax rates on a company’s own innovations, fast-track IPO legislation, Open Data, and Tax Relief for animation, video games and other creative sector industries. Updates to the budget in March 2015 extended the SEIS policy and gave the first large wave of government funding to tech incubators outside of London (Manchester, Leeds, and Sheffield). Tech City Investment Corporation (TICO) is a quasi-public agency (“quango”) that encourages business and creates investment opportunity within the district as part of the government’s growth strategy. TICO also provides advice to startups, hosts seminars, and built the Tech City Map tracking the startup economy. Additionally, the public sector has invested in growing the district through infrastructure and funding projects such as the Innovation Warehouse, a startup accelerator.

Civic Space and Public Realm

After the Prime Minister’s endorsement of support, a £50 million fund was earmarked in 2011 to help revitalize the Old Street Roundabout. The proposal included the creation of a grand civic space that would serve as a landmark and gateway to the district with electronic signage and displays. The building would house an auditorium, classrooms, workshops, and 3D printers and would be designed as an adaptable piece of civic infrastructure. Design firm Architecture 00:/ described the project as a civic commons representing a high-tech open-source public realm. The firm saw the space as a way to test how civic space could be used for production (Wainwright, 2012). The project was proposed to be operated by a community interest company. Lead designer Alastair Parvin explains the challenge that the project presented: “how can we make an organisational structure that will remain open and not become exclusive?” (Wainwright, 2012). He went on to compare this new type of civic space with libraries built by Carnegie that for the first time provided books to the public. Aside from Architecture 00:/, the project was a collaboration between Hackney and Islington city councils, Transport for London, the Greater London Authority, and TICO as the Government’s investment vehicle.

Critics of the proposal saw the building as a billboard for heavy-handed top-down influence. Author of the Art & Culture section of The Guardian went so far as to state: “There is perhaps nothing more abhorrent to the creative startup sector than
being co-opted by central government (Wainwright, 2012). A writer for The Telegraph more bluntly stated: “The government should be listening to the local successful entrepreneurs, not throwing money at art projects designed by parasites” (Willard, 2012).

The fund ended up getting pulled in the summer of 2014 and as of 2015 there is no plan to resurrect the civic center project. However, Transit for London is currently reviewing a proposal for a new Old Street Underground Station that would also reconfigure the central traffic circle. This would create a larger pedestrian peninsula and dedicated bike lanes, seizing the opportunity to create more public space and define an entrance to the district.

Part of the planning process of expanding Tech City involved demolishing a significant number of smaller buildings to make way for new office construction, especially in Hackney. This has caused rents to rise for the remaining office space available to small local companies. As rents continue to rise, startup companies have been turning to coworking spaces where they do not need to sign a long-term lease. There are an estimated 70 coworking spaces spread across the city according to TechCrunch. Below are some of the most active members of the shared space ecosystem in Tech City that play an important role in engaging the public realm.

Google’s ‘startup hub’ called Campus London opened in March, 2012. Google took out a ten year lease on the building to provide coworking space and space
for accelerator programs and startups. One of its unique features is the Campus Device Lab which offers new smart phones and tablets for companies to test their apps across operating systems and devices. It offers programming such as Campus Edu, Campus Exchange and Campus for Mums. While housed within a Google-owned building, Google does not have a financial stake in these companies. TechHub, a coworking company, has space within the building, as does Seedcamp venture accelerator. It is free to be a member of the Campus after online registration, and the price of space varies from free (Central Working café) to subsidized desks. Google staff occupies the top floor. This was an experimental model for Google, much like the Microsoft NERD Center in Kendall Square, and it is now opening other similar innovation campuses in Tel Aviv, Seoul, and Madrid. Google reports that in 2014 alone, startups within the Campus London network created over 1,200 jobs and raised over £41 million in capital, doubling the growth from 2013 and demonstrating strong ecosystem health (Drinkwater, 2015).

TechHub, one of the first and largest coworking spaces in East London, launched in 2010 at a previous location before it relocated to a floor of the Google Campus
when its original space was demolished. In 2014 it expanded to a second location on Old Street, occupying an entire floor of the tallest office building in Tech City (10,000 SF). The new space is targeted at more mature startups that are teams up to 30 people instead of fledglings that are more often 1-5 people.

Central Working operates three coworking spaces. Since opening its first space in May, 2011, its monthly rates have risen 66% with a limit of 12-15 people per company except the Whitechapel location which can accommodate teams of up to 50 (Techworld 2013). Central Working partners with other companies as well: Microsoft Ventures Accelerator runs out of the Central Working co-working space in Shoreditch and Central Working also operates a free coworking space in the basement of Google Campus.

TechSpace London, an accelerator, can now accommodate about 50 startups over 10,000 SF of space at Bath Street, Underwood Street, and Great Eastern Street. TechSpace focuses on technology-related service businesses and technology startups, the majority of which have first-round funding and are in mid-stage growth (6-8 employees) and recently expanded in 2014.

IDEALondon accelerator and incubator space is a partnership between University College London’s center for entrepreneurship, Cisco, and Scottish media company DC Thomson. IDEA stands for Innovation and Digital Enterprise Alliance, a partnership to support start-up economy digital media and tech entrepreneurs. Its mission is to provide mentoring, training, and business support to startups for six to twelve months. The space was opened by the Prime Minister in October 2013 with room for about 100 workers and staff. IDEALondon is the hub for Cisco’s British Innovation Gateway (BIG) initiative, which has dedicated millions towards digital startups. Another of the Cisco projects is the CREATE program which aims to bring together innovators and researchers to develop the future of technology. The CREATE Innovation Center at Hackney Community College, just down the road from the Roundabout, focuses on the Internet of Things (IoT) and the Internet of Everything (IoE).

Innovation Warehouse is a 10,000 SF accelerator that houses about 50 digital startups and offers office space (hot desks or fixed desks in “The Hive”) as well as potential investment opportunity. It was founded by a group of entrepreneurs in partnership with City of London Corporation and angel investors. The company
has a £1.5 million seed fund to provide financing for selected startups. The space, which leaves something to be desired when compared to Campus London, is less focused on “cool-factor” and more focused on building up the companies who make it through the selection process. It focuses on startups that are more established and helps them “achieve sustainability and high growth.” (Innovation Warehouse, 2015).

**The Urban Innovation Centre** opened in March of 2015 as the home of Future Cities Catapult. This interesting new player in the tech startup scene is located just west of the main Silicon Roundabout district. The Centre’s mission is to be a space where urban innovators can use state-of-the-art facilities to turn original ideas into products and services used in cities around the world, bringing together local engineers, designers, businesses, universities and city leaders (Future Cities Catapult, 2015). The Centre serves as an event space, hosts resident “innovators and collaborators,” and houses the Cities Lab which provides modeling and data visualization facilities. Focusing on the urban fabric and tapping into the future cities market is a niche that many other tech incubators have yet to respond to but can have a direct impact on the surrounding community.
At their core, innovation districts focus on building out local talent. However, more and more frequently, the local startup ecosystem has attracted international venture capital investment and international corporations. This not only makes a more competitive environment for local startups but it also means that startups are most likely acquired by a tech giant such as Google or Microsoft instead of growing or partnering with mid-size companies. While this might be good for the broader economy, it is not good for fostering the startup economy as a means of job growth and economic diversification. And lastly, as previously discussed, oftentimes the arrival of global companies coincide with a dramatic rise in rents.

A newly released Tech.eu report on the growing strength of the European tech industry documents that in 2015 there were 358 tech exits in Europe (primarily acquisitions), totaling 80.14B Euros (disclosed) (Wauters and Murray, 2015). The UK leads the pack by number of total exits with Facebook, Google, and Microsoft acquiring companies at the highest rates. Interestingly enough, the same report found that only one third of the companies that exited were venture capital-funded (130 of the 358). Despite this figure, data from the first quarter of 2015 shows the highest level of venture capital investment in European companies since the 2001 dot come bubble (Dow Jones VentureSource Venture Capital Report, April 2015). So while more and more investors are attracted to the tech industry, the added investment is not necessarily aiding the innovation ecosystem.
Takeaways:

- The district has government support through business and financing but less so through planning and placemaking
- No core private developer so no overall vision; infrastructure just now coming on-line
  - Grand civic space never came to fruition
  - More susceptible to corporate invasion if no plan to sustain other members of the ecosystem
- Currently has a strong support system for the startup economy and range of space available for small, mid-size and large companies but available space is shrinking.
- Survival of startups is rooted in coworking space – an area where the public sector could step in
- Not much buy-in from the existing community: negative attitude about the government coming in to capitalize on organic clustering
  - Potentially better public realm if there was more collaboration and input.
BOSTON INNOVATION DISTRICT, BOSTON, MA

District Hall: Primary case of alternative “linkage/benefit” for the public realm

Context of Boston Innovation District
The Boston Innovation District is located south of downtown Boston, bounded by the Boston Harbor, the Fort Point Channel, and the Reserve Channel in an area also referred to as the South Boston Waterfront or Seaport District. It includes 1,000 acres of land as well as the areas known as Fan Pier, Seaport Square, Fort Point, and the Boston Marine Industrial Park. With proximity to downtown, South Station and Logan Airport, direct access to goods and services continues to be an asset of the South Boston Waterfront. This land was previously part of the Boston Harbor, and the South Boston Flats were wharfed out from 1887 to 1913. The construction of South Station in 1899 and additional wharves helped make South Boston the center of the industrial waterfront by 1925. In addition to piers and rail terminals, storage warehouses were built along the waterfront to support commerce. By the 1930s, the wharves were deteriorating and the Harbor was greatly polluted as industry faded from the waterfront. From the Great Depression until the 1960s, with Boston’s economy in decline, the port saw little activity and increased vacancy. 1960s Urban Renewal projects cleared land along the waterfront through the newly
established Boston Redevelopment Authority (BRA). Although much of the land was cleared, industrial zoning from 1870 was kept in place, inhibiting growth until the 1980s when portions of the Seaport were incorporated into a new PDA.

During the 1980s, Fan Pier in particular went through numerous planning studies and community engagement, but an ongoing lawsuit between the development partners halted progress. Finally, in 1998, the Moakley Federal Courthouse opened on the edge of Fan Pier as the first new development in the area, and in 1999 the Institute for Contemporary Art (ICA) was selected by the city to act as a cultural anchor on the waterfront and to stimulate investment. In 2006, this iconic Diller Scobidio + Renfro building was the first museum built in Boston in over 100 years, drawing thousands of visitors a year (ICA Boston, 2015). The remainder of the 20.5 acre Fan Pier site was finally bought by Joseph Fallon and Massachusetts Mutual Life Insurance Company in 2006 for roughly $115 million and the new owners immediately crafted a new masterplan that finally took shape with help from a $50 million bond secured from I-cubed funding and City of Boston Tax Increment Financing. This public funding was provided to spur development and offset the costs of infrastructure and community benefit spaces (Boston Municipal Research Bureau, 2011).

In 2011, Vertex Pharmaceuticals signed a 15-year lease at Fan Pier worth $1.1 billion, moving their headquarters from Cambridge to Boston, and marking the beginning of the establishment of technology and biotech companies in what is now called the Innovation District. The Vertex deal was a much needed boost of confidence to investors and a stroke of success for the site, which was constructed on-spec with no key tenant. Following the Vertex lease, in 2012 Goodwin Procter announced its decision to lease a 17-story office building on the site. And in October of 2013, Polaris Partners became one of the area’s many venture capital firms, signing a lease to move its headquarters from Waltham, MA to One Marina Park Drive on the waterfront.

Access to transportation has always been important to the Seaport and this was boosted by the implementation of the MBTA Silver Line in 2005 (Phase II). The Silver Line, a Bus Rapid Transit system connecting South Station to Logan Airport, was built in conjunction with the Central Artery/Tunnel Project (“Big Dig”). The mid-century construction of the Massachusetts Turnpike, I-90 and I-93 across South Boston and through downtown, completed in 1965, hastened the decay of Fan Pier and the Boston Harbor by severing the waterfront from the rest of the city. In 1982, the first
The planning phase of the Big Dig was created in response to acute traffic problems and visual and environmental concerns. The final plan included decking over I-90 and I-93, building the Ted Williams Tunnel to Logan Airport, building the Bunker Hill Bridge, and creating the Rose Kennedy Greenway over I-93. It was completed in 2007 and now the waterfront is visible and accessible once more.

The City of Boston and the BRA have greatly impacted the development of the Seaport. Through zoning measures, public financing structures, and development incentives, the City was able to leverage developers to extend the public Harborwalk, construct new infrastructure, build a new cultural institution, and deliver public space, all while receiving a large increase in real estate taxes. Throughout the planning process of the area, the City had to balance a desire for growth with getting the type of development and public benefits that it values most.
Creating the Innovation District

In 2010, Mayor Menino announced a city initiative to create an innovation district in the South Boston Waterfront. This included specific policies aimed at fueling real estate development and job creation. Like most American cities, Boston suffered from high levels of post-recession unemployment and was looking to economic development opportunities that would create jobs, stimulate growth, and revive the downtown core. As previously mentioned, Boston was also greatly impacted by “brain drain” as a large portion of the thousands of college graduates in the metro area left for jobs in other states. Identifying biotechnology and life science as a strength, the idea to create a designated innovation district was implemented.

Mayor Menino’s vision for the Innovation District:

Core Principles:

• Urban Lab: Opportunities for testing groundbreaking technologies and experimenting with clean energy, citizen participation, transportation, and social infrastructure. The district will be a proving ground for collaborative efforts between the City and its partners; successes will be scaled and translated to benefit all neighborhoods.

• Sustainable Leadership: maximize the redevelopment of 1,000 acres of waterfront land and ensure sufficient resources and enjoyment for future generations.

• Shared Innovation: All Bostonians should benefit from the shared idea economy; establish new creative policy strategies can position Boston at the forefront of urban economic development.

Key Strategies:

• Promote collaboration: create a close-knit ecosystem and clustering to foster creative growth, intermingle small firms with larger firms that provide access to capital

• Provide public space + programming: establish an abundance of collaborative open spaces and venues; create District Hall, the world’s first free-standing public innovation center.

• Develop a 24-hour neighborhood: build innovation housing, provide live-work spaces; attract world-class restaurants, active nightlife, and cultural institutions.

According to the City, while tech companies have contributed 30% of new job growth, 11% of new companies are in education and nonprofits (City of Boston:
Innovation District, 2015). Additionally, 21% of new jobs are in creative industries and 16% are in the life science or green technology fields. So while tech companies do dominate, the district is meant to benefit collaboration and networking across all sectors and industries.

Part of designating an official Innovation District was including certain use and public space guidelines. Nicole Fichera describes the inclusion of innovation space within the District:

In the buildings that are new, there is a certain amount of innovation use/space that is designated in each one. It is not a sort of blanketed zoning like in Kendall Square did but it’s more of Kairos [Shen, Director of Planning] saying we are going to have innovation space and then talking about the particular innovation use that would be most beneficial there. So there’s sort of this innovation infrastructure and spaces peppered through the district. (Nicole Fichera Interview, 2015)

Land use was also a key element in forming the Innovation District. In a panel at the State of the Seaport, an annual event hosted by real estate news outlet BizNow, John Hynes, developer of Seaport Square, shared that he sees a uniqueness in
the mix of land use at the Seaport (BizNow, 2014). Unlike other neighborhoods in Boston, at full build-out the Seaport is projected to be 70% residential, compared to 5% in the financial district and about 50% in Back Bay. Admittedly, it is difficult to imagine such a large influx of residents in the currently office-dominated environment surrounding the Vertex buildings, but the inclusion of much-needed housing aligns with general innovation district live-work goals to boost knowledge spillovers and it will help activate the neighborhood.

SEAPORT SQUARE
Seaport Square is the largest development that will be built-out according to the Innovation District initiatives.

Seaport Square Timeline:
In 2006, Boston Global Investors and Morgan Stanley closed on 23 acres of land near the South Boston Waterfront, adjacent to the Fort Point neighborhood. The developer did not obtain final City approvals from the Boston Redevelopment Authority until 2010, coinciding with the Innovation District designation. It then took two years to implement the required first phase: a $10M park and public Innovation Center (District Hall). Only after completing this phase was the development team able to proceed with the construction and sale of other parcels within the masterplan. The first office building is set to open Q4 2015 and the primarily residential One Seaport Square building (1.1 million SF) is slated to open in 2017, with other parcels in the pipeline as well.

Project overview
Seaport Square is a 23-acre, 6.3 million square foot mixed-used development that includes residential, commercial, hotel, retail and civic space. At completion, it will add 20 new buildings, 5 new streets, and 4 public gathering areas to the South Boston Waterfront. It is a joint development of Boston Global Investors (BGI), Morgan Stanley and WS Development (retail development only). John Hynes, CEO of BGI and Gail International and a seasoned Boston developer, brought his long-standing relationships with the City and strong financial reputation to the deal allowing it to move forward swiftly. Over the past five years, the partnership has sold off several parcels to other developers such as Skanksa, while retaining the remainder to build themselves or to hold for future opportunities.
Some highlights of the project include One Seaport Square’s VIA and The Benjamin, two residential towers that will contain a total of 832 units surrounding a central public green. 96 total units are “innovation units” (micro units). Skanska is developing PwC’s new headquarters at 101 Seaport, a 17-story $126 million building that is set to open late 2015 (Parcel L1 of the masterplan). It is situated across the street from District Hall. Skanska is also in the early stages of developing an office tower on the adjacent 121 Seaport (Parcel L2 of the masterplan).

Seaport Square sits within a Planned Development Area (PDA) that BGI and BRA staff worked on closely to devise appropriate zoning, land use, infrastructure, public benefits, and building envelopes for the entire development (Lara Mérida Interview, BRA, 2015). As part of the newly created Innovation District, the City incorporated a few provisions into the planning requirements including designated Innovation Space:

In support of the Innovation District and Boston’s innovation economy, the Project will devote twenty percent (20%) of the gross floor area of non-residential uses to innovation space. Innovation Uses include laboratories, small business incubators, research facilities, design and development uses, car-sharing or bicycle-sharing services, public or common space in innovative housing space, uses that bring net new jobs to the City, and other uses described in the Original Development Plan. (Seaport Square PDA, 2012).
It also pushed for the inclusion of Innovation Units, known in other areas as micro units, which was a first for the Boston Market. While developers were skeptical that these units would have any sort of demand, they have proved to be hugely successful and were pre-leased or pre-sold in many of the residential projects under construction throughout the Innovation District. The City saw these units as a way for young, middle-income workers to have access to new market-rate housing in the Innovation District. To quell fears of overcrowding and low quality of life, a certain level of amenities are required of properties with micro units. Notably, there is no rent cap on these units, allowing them to sell or rent at market rates, operating under the assumption that because they are smaller and therefore less expensive on a per unit cost, they are still accessible to a younger or lower-income bracket of renters. In addition to the inclusion of micro units, the project was also required to comply with the standard affordable housing allocation and contributions.

Other public benefits include a strong emphasis on open space: Seaport Green, Courthouse Square, Seaport Hill, and Q Park. The Seaport Square Green is a 1-acre park that will open adjacent to District Hall as a “grand civic lawn” to support recreation and public events. The estimated $10 million project will connect to Fan Pier Park and the Boston Harborwalk, creating a continuous public realm in the district. It also includes a Fallen Heroes Memorial for veterans of Iraq and Afghanistan and a food pavilion. Courthouse Square is a 17,000 square foot open space surrounded by active ground floor retail that will link the residential towers of One Seaport Square.
BOSTON INNOVATION CENTER: DISTRICT HALL

When announcing the creation of the Boston Innovation District, the Mayor’s Office knew that it would need a center of gravity in order to designate the area, draw talent, and attract business. The City of Boston determined that this would best be delivered in the form of a public innovation center and included the center as a required public benefit of the Seaport Square PDA. Importantly, because Seaport Square was approved through a PDA (instead of a Planned Unit Development or masterplan), the BRA had the ability to include a timeframe for required public benefits within the project phasing (Lara Mérida Interview, Senior Planner, BRA). Ultimately the Boston Innovation Center, which was eventually named District Hall, began construction 12 months after the project approval (2012).

District Hall was designed by Hacin + Associates as a single-story structure that would be open and welcoming to the community. Nicole Fichera, the Manager of District Hall, explains the process of creating a public innovation center:

The original idea for District Hall came from City of Boston from Mayor Menino and his staff- primarily Mitch Weiss (Chief of Staff at the time) and Kairos Shen (Chief Planner) and as part of conceptualizing the Innovation District they knew they wanted a gathering place for innovators—and that word “gather,” which is now the name of the restaurant, was a really core part of the positioning of the project. (Interview 2015).

Throughout the negotiation process, the function of District Hall evolved from potentially housing paid coworking space and offices for BGI to being a single-story structure completely open to the public. It also changed location throughout the
planning process before settling on its current site adjacent to the park to emphasize a connected public realm. Together, the site location and building function allow it to act as “living room of the innovation district.”

District Hall was the right thing for the Seaport because it needed a center. It became the public front door to an area that was increasingly new buildings and large corporations on the waterfront side even though there were a lot of startup folks in Fort Point - it sort of helped join those communities. (Brian Dacey, CIC, Interview 2015)

One thing that is really interesting about how this building came together is that it was first designed from the outside and the inside was then done afterwards. This project got phased that way mostly for budgeting reasons but also because we weren’t sure what the heck it was going to be. It was just this– we’ll make a gathering place. For innovators. What? It wasn’t an existing model. It wasn’t a coworking space, it wasn’t an incubator. And all of that was talked about for this building but it didn’t quite fit with all of the other things we wanted to be a part of it. (Nicole Fichera Interview, 2015).

In order to finance the project, the BRA used a PILOT (Payment in Lieu of Taxes) within the lease structure. It also enacted Massachusetts 121B which gave the city power of eminent domain for the term of the lease to allow for the tax relief. BGI then set up a renewable 5-year $1 lease with City of Boston/the Operator. The current leaseholder is therefore the VentureCafé, the non-profit operator chosen to run programming and staff the facility. BGI paid for the design and construction of the building and the BRA contributed an additional $500,000 for the interior fit-out and maintenance reserve as a loan that was matched by BGI (Seaport Square PDA, City of Boston 2010).

BGI and the City of Boston worked extensively with Tim Rowe of Cambridge Innovation Center and with Gus Weber of the Microsoft NERD Center to understand how public innovation space could work and how to reach out to the innovation community and understand their needs. From an early stage, it was determined that District Hall would be something different than CIC’s rented coworking space or Microsoft’s free conference space (since Microsoft is able to subsidize usage fees). The development team eventually decided to partner with VentureCafé, CIC’s non-profit arm, as the building operator to ensure a level of expertise from the private
sector while maintaining the public spirit of the building’s mission. To cover utility and staffing costs, the center needed to create a revenue stream without turning a profit – so the team put together a new financing model. The larger conference rooms are rented out for a flexible fee determined by company type, and the attached restaurant covers the remainder of the costs – 30% of the space covers the costs for the other 70%. 2014 was District Hall’s first full year of operation, and according to Nicole Fichera, they recorded banner numbers: 562 events and meetings were held there, and they gave away $1 million of space but were still able to over costs on rental revenues.

At the time that Seaport Square was approved, the City needed to spark development activity during the downturn. Menino’s vision for an Innovation District sought to strengthen the local economy through diversification and the transformation of a parking lot wasteland into much needed construction jobs, housing, and investment. Building the innovation district bolstered Boston’s reputation as a talent hub, attracted investment, and has fostered job growth, using the innovation ecosystem to build a more resilient economy.

**Takeaways:**
- The Innovation District has a lot of components that set it up for success:
  - A public innovation center: District Hall
  - The world-headquarters for multiple large corporations: Au Bon Pain, Gillette, John Hancock, Vertex, and PwC
  - The country’s largest startup accelerator: MassChallenge
  - Local talent pool that is virtually unmatched: Harvard, MIT, Tufts, Babson, Northeastern, BU, BC
  - Large amounts of private and public investment
  - Seaport Square utilized public-private partnerships to create a new type of public space
  - Non-profit operator of with expertise and connections ensured success and public support of the innovation center
- The PDA process and vision of the developer ensured that the innovation ecosystem was supported within the project
- Housing is key to create a 24-7 neighborhood in previously vacant areas
- Now that development has taken off, perhaps it is time for the city to consider an office space requirement within the Innovation District to support smaller firms and prevent local startups from leaving.
ANALYSIS OF DISTRICT HALL

WHY IS DISTRICT HALL DIFFERENT?
District Hall claims to be the world’s first free standing public innovation center. This one building is intended to boost the local economy and provide educational opportunities for many industries and businesses. The concept is cyclical: new start-ups get needed support, some grow into companies, creating jobs, and others join forces and provide talent to larger corporations. These successful entrepreneurs return to the coworking space to seek new ideas, lend advice, and participate in public programming and education. While many innovation districts have incubators, coworking space, and public spaces, these are almost always located within a private office building subsidized by other corporate tenants such as CIC in Cambridge’s One Broadway or Barcelona @22’s Media-ITC Building. The Media-ITC Building, for example, is a total of 14,000 square meters for university tenants, research and training, public space, and companies in the Media and Information and Communication Technologies (ICT) sector. The human-scale, free-standing nature of District Hall connects to the public in a more immediate and neutral manner. Nicole Fichera explains the importance of these design decisions:

The city has a ton of innovation spaces. But most of them are on the upper floors of buildings – the 12th floor, you have to go through the security guard and you have to go to the elevator bank. And from the street you would never know that inside someone is inventing a robot that makes custom tile mosaics or the cure for some terrible disease. You wouldn’t know. It looks like every other corporate building in Boston. So District Hall is different. It’s on the ground floor. It’s a single story; it has a weird shape so it has a civic presence on the street. It has a restaurant and a coffee shop—all of these things that are sending the message: come in, ask a question about what this place is. Even if you don’t consider yourself an entrepreneur, even if you’ve never heard the word innovation in your life you could walk in here—sort of the way you might a library or a museum sort of gives the public permission to walk in—that’s the way this building is conceptualized as well. (Nicole Fichera Interview, 2015)

Second, while many cities plan grand civic gestures as an element of development,
these centers do not always get built or are a low priority within the project phasing, as seen with Silicon Roundabout’s failed civic space. By requiring District Hall to be completed before any other portion of the development, the City and BGI ensured that the entire innovation district would have a nucleus from day one.

Third, the fact that the building was required as a public benefit is important. The city could have simply required more parks, public art, contributions to fund schools and libraries, or for BGI to only include public space within the lobby of an office building. For comparison, the neighboring 2002 Fan Pier PDA (20 acres, 9 buildings) required the construction of Fan Pier Park and the Public Green, a marina, and the Harbowalk in addition to the land for the ICA. Seaport Square took the extra step to create a new community benefit—District Hall is a building constructed out of a public mission to build the local economy. Not only does it offer a new public benefit, but it also provides a new framework for public-private partnerships. Not equipped to act as an innovation center operator, the City chose an experienced non-profit organization to fully engage the space without losing sight of its public mission. Nicole Fichera explains the partnership as such:

I always tell people on tours that this is a public-private-partnership with a triple-capital P: it was a Public vision by the City of Boston, it was Privately funded and built by BGI, and it has a Public, civic mission which is executed by a Private operator. And the city still has reporting oversight over activities here even though they aren’t really the owner of the building. (Nicole Fichera Interview)

Is District Hall effective as a public benefit? (Did it boost economic development? Did it create jobs?)

It is incredibly hard to measure how social interaction and networking has directly affected job creation. The City of Boston estimates that in the Innovation District as a whole, over 200 companies have located within the District since 2010, adding an estimated 6,000 jobs to the area (City of Boston). However, the term “company” could mean a single individual working on a startup or a full-fledged corporation. Additionally, these statistics do not always measure movement of jobs—while it might bring much-needed jobs to the Boston core, it might mean relocating them from neighboring cities such as Cambridge or elsewhere in the region.

Anecdotally, the role of public space has been observed by members of the innovation community as an important part of the innovation ecosystem. Nicole
Fichera, Director of District Hall in Boston, recalls how the users of District Hall reflect the surrounding district. When it first opened, many of the users were students or members of MassChallenge working on their next pitch. One could observe the evolution of a startup: a two-person weekly meeting in the lounge could transform into a small group and then grow into needing a conference room for a full team. Among one of the first users of the space was Keryx BioPharmaceuticals. For months as the company waited for its new office to be ready for occupancy, its staff met at nearby District Hall. After moving into its space at One Marina Park Drive, Keryx then decided to become a sponsor of District hall to “support the important role it plays in facilitating innovation in Boston” (Keryx, 2014). Chief Operating Officer Greg Madison elaborated on this relationship: “Our sponsorship reflects our appreciation of the critical role a public space like District Hall can play in helping companies of all shapes and sizes through times of transitions and in bringing innovative minds together in a collaborative environment” (Keryx, 2014).

Is it open to the public? Is it a fair tradeoff for development rights?

District Hall operates within a gray area of the public and private realm. The building is meant to be open to the public but it is not legally a public space as it is operated by a non-profit corporation. However, the City has oversight when it comes to programming and does an accounting review of all revenue. So while the building was meant to be a public benefit, it also serves a very specific purpose of supporting the innovation ecosystem, which is what separates it from a community center. The “public” in this case is therefore all participants of the innovation ecosystem. I would argue that it could do a better job at reaching out to the local innovation community through outreach and increased educational events. The Boston startup community is close-knit and tends to draw a very specific group of people to public events and meetings. While this gives strong support to those within the network, there is surely untapped talent outside of the highly-educated upper-middle class circles that comprise the majority of the startup community.

District Hall was part of a public benefit agreement that allowed a private developer to obtain development approval. A public benefit such as open space usually carries with it indeterminate public access tied to the land. If public funding is involved, this may take the form of a public easement, such as the BRA’s easement for public access over the Harborwalk and infrastructure associated with Fan Pier’s I-Cubed funding. Either way, the spirit of the public space is meant to be a long-term benefit to the community if not in perpetuity. Seaport Square will likely remain
for decades on its South Boston Waterfront site, however, District Hall only has a 10-year lease requiring it to operate as a public innovation center. This could be a good thing or a bad thing. Ten years from now, the Innovation District may no longer be a defined district—it could be status-quo to include innovation and shared space within an office development. Conversely, the area could become a haven for luxury apartment owners, foreign investors, and global corporations. Nicole Fichera explains this relatively short-term agreement for District Hall as part of the nature of the Innovation District:

This goes back to the positioning of the Innovation District from the beginning—it’s an urban lab. It’s a place to test stuff and see how it goes. And if it works then you incorporate it into policy and things for other parts of the city. So there’s a lot of that ethos that went into the planning of the innovation amenities in the Seaport in that we want to get something done, we want to try it and we are going to see how it goes. And if it works really well it can get rolled into policy that might be something more concrete like the Open space/FAR tradeoff. (Nicole Interview)

WHERE IS THE INNOVATION DISTRICT HEADED?
In thinking about the effectiveness of community benefits, one must consider both the current environment of the project and the long-range vision for the neighborhood. Today, District Hall helps to identify the Innovation District and it continues to fill a need for space that brings the innovation community together. However, as the surrounding neighborhood continues to grow and develop, its role in the community may also evolve. When asked about the future of District Hall beyond its 10 year lease (2023), Nicole Fichera replied: “There is lots of innovation space going into other buildings in this neighborhood too so I think there’s a philosophy of evolution that’s tied to this project. There are no immediate plans for 10 years and in the meantime we focus on driving impact,” (Nicole Fichera Interview, 2015).

An important shift in the neighborhood landscape is the arrival of new residents. The Innovation District concept promotes a mixed-use environment to promote a vibrant live-work neighborhood. While planners and developers foresaw young innovation workers being drawn to the area, it was somewhat unexpected when families with children also started moving in. As the resident population continues to rise, the lack of schools and grocery stores built into the development becomes more apparent (BizNow, 2014). This may also affect the future of a space like District Hall and
whether or not it will still be needed in a residential neighborhood if the population trends towards middle-aged employees of well-established firms.

Lastly, with the recent arrival of large corporations such as Goodwin Proctor and PwC, rents are rising to levels that are effectively pricing out startup companies. Coupled with the relocation of MassChallenge from the heart of the Innovation District to the Design Center in the Marine Industrial Park, one wonders if private developers can really cultivate a startup friendly atmosphere. Startups, design firms, and small tech companies had been attracted to the historic brick warehouses in Fort Point that offered cheap rent and open office space, but in the last two years, rent in Fort Point has increased by at least 40% (Acitelli, 2013). While certain PDAs in the Innovation District require “innovation space,” Boston does not have a system of providing stable rents for startups or innovation companies, leaving them to turn to either coworking spaces such as WeWork, or other areas of the city such as Downtown Crossing or Allston.

**POTENTIAL PITFALLS OF THIS MODEL:**

- Residential mix is good for retail, but how does a job-oriented public space serve such a residential-oriented community once it is fully built out?
- Is the building simply a means to an end? Will this tiny building be dwarfed within the next 6 months even? As luxury apartments also rise, will it feel more like a private club house than a community center?
- The model is hard to replicate because of Boston’s particular regulatory process through the BRA. “In a different city the deal here would probably look entirely different.” – Nicole Fichera
- No institutional or academic partner involved means no automatic talent pool or job creation engine. Conversely, institutions have used the space to host events and collaborations on neutral territory.
- When defined as a public benefit, it should benefit the public—programming and educational opportunities are needed for those outside the established tech/startup industry
SURVEY OF THE BOSTON/CAMBRIDGE INNOVATION ECOSYSTEM

The survey was emailed to 280 companies and individuals in the Boston metro area. 70 responses were recorded (25.7% response rate). The purpose of this survey was to gauge the importance of public space to active participants within the innovation ecosystem and to better understand their personal experiences in spaces such as District Hall and the Cambridge Innovation Center. Below is a sample of firms who responded:

- Mapkin
- Rifiniti
- New England Venture Capital Assoc.
- Scratch Marketing + Media
- Bison
- CommonAngles Ventures
- Project 11 Ventures
- coUrbanize
- Tank Utility
- Stock Rover
- GRIT
- Genzyme, a Sanofi Company
- Danger Awesome
- Cam Med LLC
- Ashton Instruments
- Help Scout
- Propel Marketing
- ArtLifting
- Ecovent
- SQZ Biotech
- Quantopian
- Grove labs
- Weft
- Sqrrl
- Massachusetts Institute of Technology
- Panorama Education
- Wigo
- LabMinds
- Jibo
- Social Fulcrum
- InCrowd, Inc.
- Ginkgo BioWorks
- Blade
- Splitzee
- InCrowd
- Ministry of Supply
- LogMeIn
- Robin
- SPOT

Survey Questions:
1. How would you describe yourself?
2. Name of your company/organization (optional)
3. Do you frequently (at least once a week) conduct work outside of your workplace or home?
4. Have you (or your company) ever rented a desk or workspace from a coworking establishment?
5. Is having a common area or gathering space within your building or neighborhood important to you/your company?
6. Cambridge Innovation Center (CIC) / Venture Cafe
   - Have you (or members of your company) ever been inside CIC?
   - Have you (or members of your company) ever rented work space at CIC?
   - Have you (or members of your company) attended an event at CIC?
   - Do you see the space as a useful community resource?

7. District Hall
   - Have you (or members of your company) ever been inside District Hall?
   - Have you (or members of your company) ever conducted work at District Hall?
   - Have you (or members of your company) ever rented meeting space at District Hall?
   - Have you (or members of your company) attended an event at District Hall?
   - Do you see the space as a useful community resource?

8. Do you feel welcome/comfortable attending public events hosted at private companies or institutions?

9. Do you think public places have an impact on startup culture or idea generation?

10. In your opinion, which of the following could continue to foster startups in the Boston area?

11. In your opinion, do Boston area startups represent a diverse range of socio-economic groups?

12. In your opinion, do you feel that the broader Cambridge/Boston startup culture is inclusive to those not working in the tech industry?

13. Comments
SURVEY RESULTS

How would you describe yourself?

- Employee of a small company/startup: 31%
- Employee of a large company: 26%
- Owner/Founder of a company or startup: 1%
- Employee of a Non-profit or Institution: 3%
- Self-Employed/Freelancer: 20%
- Other: 9%

Do you frequently (at least once a week) conduct work outside of your workplace or home?

- Other: 28%
- Yes- Coworking space or innovation center: 37%
- Yes- Academic Institution: 22%
- Yes- Public Library: 1%
- Yes- Coffee Shop or Restaurant: 1%
- No: 28%

Have you (or your company) ever rented a desk or workspace from a coworking establishment?

- No: 22
- Yes: 48

Is having a common area or gathering space within your building or neighborhood important to you/your company?

- No: 10
- Yes: 60
ANALYSIS OF DISTRICT HALL

### Cambridge Innovation Center (CIC)/ Venture Cafe

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Do you feel welcome/comfortable attending public events hosted at private companies or institutions?

- Yes: 67
- No: 3

Do you think public places have an impact on startup culture or idea generation?

- Yes: 67
- No: 3

In your opinion, do Boston area startups represent a diverse range of socio-economic groups?

- No: 44
- Yes: 26

In your opinion, do you feel that the broader Cambridge/Boston startup culture is inclusive to those not working in the tech industry?

- No: 38
- Yes: 32
In your opinion, which of the following could continue to foster startups in the Boston area?

- Increased educational opportunities and programming
- Additional innovation centers
- More networking and events open to the public
- Affordable office space
- Other

Survey Analysis
The results of this survey are based on the opinions of 70 respondents, 59% of which are owners of a startup or company, allowing me to draw conclusions about their spatial needs and experience as part of Boston’s innovation community. The results from this survey are telling. Some responses were expected, such as 28% of respondents work at a coworking space or innovation center at least once a week. A total of 37% of respondents work in a coffee shop or restaurant at least once a week, suggesting untapped tenant potential from a large number of innovation workers as well as the increasing need for workspace outside the home or office.

68.5% of the respondents have rented space from a coworking establishment, demonstrating the popularity of these types of work spaces for small firms. However, only 35% of respondents have rented space from CIC and only 17% rented from District Hall, meaning that the majority of space is rented through other private operators such as WeWork.

Although only 17% rented space from District Hall, 31% have conducted work at the space, meaning that the public gathering area with free access to wifi is in fact being utilized by some members of the community who would not otherwise rent the larger spaces.
40% of the respondents have never been to District Hall, the so-called beating heart of the innovation district, yet 75% still consider it a useful community resource. Conversely, 91% of the respondents had been to Cambridge Innovation Center and similarly, 93% see it as a useful resource. This may be due in part to a disproportionate amount of respondents from the Cambridge area (the survey is anonymous so it is unclear if this is the case), however, seeing as these two innovation centers are less than 3 miles apart, I still find this data to be informative. The majority of respondents who had been to either District Hall or the CIC have visited to attend an event.

Surprisingly, 96% of people feel comfortable attending events at private companies but 54% of people do not think the startup culture is inclusive. I believe this is reflective of the participation of large corporations, such as Microsoft, in the innovation community. It becomes second nature for members of the startup community to attend an event and the NERD Center.

96% of individuals agree that public places have an impact on startup culture or idea generation. I believe this overwhelming agreement is a direct reflection of the large degree of innovation and collaboration that happens within the public realm. People have personal experiences being part of this exchange and more than ever they are aware of how valuable it is to interact with one another.

Not only do 54% of respondents not think that the startup culture is inclusive, but 63% do not believe area startups represent a diverse range of socio-economic groups. Women and minorities have been documented as being absent from the ecosystem, but additionally, those of lower socio-economic status and education are being left out of the equation. This is something to consider when planning the public benefits and public programming that may accompany innovation districts.

Importantly, 43 respondents (61%) agree that affordable office space is the most important factor in sustaining startups, with the second-most important factor being increased educational opportunities and programming. Startups need affordable space in order to grow and this data confirms that there is clearly not enough space in the Boston area for them to take root. The implications of these sentiments will be discussed in the following chapter as part of the framework for creating recommendations.
SELECTED SURVEY COMMENTS:

“There are actually way too many co-working spaces right now. Our company runs one with our extra space, but places like WeWork are undercutting everyone, and PivotDesk are helping increase the supply, but demand does not seem to be there. More informal meeting places would be a plus.”

“I had never heard of district hall, so can’t say if it is or isn’t useful.”

“Our offices are located at WeWork, a major co-working company. We believe that taking a commercial lease is an unnecessary risk for an early stage company. It is in fact one of the leading causes of startup failures.”

“Public, shared spaces are useful to facilitate random people collisions that help drive business and innovation.”

“I broke into the Innovation community but found it hard to connect and make friends.”

“There is a glamour to the startup world that feels inherently exclusive to me. The culture feels a little overblown and self-congratulatory and works best for extroverted types. That said, I think it’s fantastic that there is so much general enthusiasm and peer support for innovation.”

“Rent is too high! Making it very hard to get space. We had to move to South Boston (Venture Dev. Center) to save costs.”

“The Startup Community here in Boston all but shuts out black and latino folks. As with all things, the folks with the money (local VCs and Angels) tend to want to fund people like them because they can relate to them leading to overfunding mediocre ideas... and a complete lack of funding for women or minority led companies.”

We looked into renting space at District Hall for a few meetings, but it was ridiculously expensive.
District Hall Entrance; District Hall and future public park (Source: Hacin+ Associates, 2015)
Innovation districts in London, Seattle, Boston, and Cambridge are successful in attracting talent, spurring development, and creating jobs. However, each of these cities is now facing the problem of how to retain this momentum while keeping in the spirit of innovation and fostering the innovation ecosystem. There are different steps that each of these cities are taking to help maintain the presence of entrepreneurs, many of which involve the preservation or incorporation of public space.

LESSONS

- Affordability of office space and the presence of housing are equally as important as the public realm to sustain innovation.
- The Public Realm is important, but it is hard to quantify its effects on innovation, idea creation, and worker productivity.
- Developers are starting to recognize the value of public space and are more willing to provide these types of spaces within large projects.

Despite the lack of concrete data that demonstrates a correlation between increased returns and a connection to the public realm or broader ecosystem, many companies are embracing this notion as a business philosophy. The Cambridge Innovation Center is one of many private companies with a mission to further the public realm. Brian Dacey, President of the CIC, explains his company’s goal to support the broader community as a good business practice:

> We are believers that it isn’t just a building, it is a district. We make sure that we are going to be a part of a bigger community. We will do a lot to help build that community and that district. We are very focused on not just a space—2 floors of a building— but what’s happening in the building, what’s happening around us, and how to support that and make all that better. (Brian Dacey Interview, 2015).

Microsoft New England and Google London have similar attitudes. Further evidence of this trend can be seen in development proposals that willingly provide innovation space and connections to the public realm. Developers are realizing that if one
would otherwise have to make the capital investment to furnish, condition, and staff a ground-floor lobby, leveraging a similar capital investment to activate the space for an economic development agenda such as innovation space makes sense.

CONCLUSIONS

• As Innovation Districts emerge there is a need for public benefits to support job growth and economic resiliency.
• There is no one-size-fits-all solution for community benefits.
• Innovation space (incubators, accelerators, coworking spaces) + public space and community benefits together have the potential to create something unique.
• Innovation centers offer the public access to the innovation ecosystem while helping to generate new ideas, products and jobs.
  • Public innovation centers provide needed community space and programming, helping to preserve a healthy tenant mix of emerging startups and established firms.

Community Benefits: The Innovation Center
Public infrastructure projects like District Hall could be successful in other cities that have a specific plan for economic development and a goal for urban redevelopment. These public-private relationships result in the best projects, and are more likely to happen in cities with a strong regulatory authority and a strong real estate market. However, there may be opportunities to use these innovative approaches in cities that are trying to reinvest in downtown centers. The next generation of innovation centers conceived as a community benefit should respond to the broader community and consider outreach to bring new members into the innovation economy beyond existing networks.

RECOMMENDATIONS

The Future of Innovation Districts:
1. Economic Development is currently favoring flex space, new economy, startups, and alternative growth: there is a need for supportive infrastructure and connection to the public realm.
2. Future Innovation Districts should include a strong public realm plan and facilities to attract talent and jobs.
3. A district gateway or identifier is important: District Hall is a good model for creating a district’s identity and a central gathering space early in the development phase.

4. Innovation centers could do better by reaching out to a broader population and fully engaging the community; public-private partnership are generally the most successful.

5. Many Innovation Districts are in danger of transitioning into corporate campuses: better public infrastructure and policy are necessary to protect small business and allow new jobs to grow:
   - Encourage the private sector to include innovation space and flexible office space for startup tenants
   - Build policy from the public sector that protects the affordability of housing and office space within Innovation Districts to prevent local companies from getting edged out
   - Create a network of smaller locally-focused innovation districts to support the core

**Recommendations For Private Developers:**

1. Build affordable flex space into development plans and allow larger tenants to subsidize the cost.

2. Consider public space when doing build-out: office lobbies can easily transition into ground-floor public space for the innovation community

3. Value the public realm as part of a project’s development potential: providing community benefits such as an innovation center attracts tenants and also gains flexibility with development regulations

**Recommendations For the Public Sector:**

1. Create affordable office space where possible:
   - Consider inclusionary zoning as a mechanism to require a certain level of alternative office space within a development or office affordability to prevent a district of purely large tenants.
   - Implement rent caps on said office space where possible.

2. In cities with a core innovation district, consider implementing a local innovation district initiative to identify other neighborhoods with local innovation potential.

3. Public realm activation and connection is necessary for a district to thrive.

4. Consider alternative community benefits:
   - Buildings such as District Hall can be a crucial placemaking step to identify an innovation district.
Timing is key: for community benefits should come early-on in the development process to allow for maximum community buy-in.

Aside from incentive zoning to create more affordable office space within new development, the public sector can continue to encourage the mix of startups and larger corporations within private development, especially through the implementation of coworking space. Coworking spaces mediate the scale between large real estate deals and high price tag space with the needs of small companies. Bringing in developers who are willing to take a risk on startup tenants is another effective way to keep startups in an area. Nicole Fichera offers her insight on how to sustain the innovation district neighborhoods:

If you’re trying to build a neighborhood, you still need developers to build buildings and if you want to build a big building you still need [a high-credit tenant] on your proforma so you can guarantee your loan. That’s really important. The approach of being creative with percentages plus some key scale mediators like coworking spaces I think is a good sweet spot for keeping startups around and helping neighborhoods grow at scale. (Nicole Fichera Interview, 2015)

Startups have changing needs and as they are just starting out, they do not have a credit rating, which makes them a high-risk tenant to developers. If a developer can achieve 80-90% occupancy of high-value tenants, they have room to experiment with no credit tenants, giving the startup economy room to grow. Drydock Labs in Boston’s Marine Industrial Park is one example of a developer mixing high-value good credit tenants with smaller startup spaces on the ground floor for life science companies that are just getting started.

Increasing the level of public-private partnerships is another step that cities can take to ensure that the public realm fosters economic development and remains inclusive. Projects like the Silicon Roundabout lacked community input and without buy-in from the existing startup community, it is unclear that the potential benefits of newly-created public space will develop.

Recognizing the early success of the Boston Innovation District, in 2014 the City of Boston created a city-wide task force to identify other areas prime for mini-innovation districts and the types of public spaces that could operate within these districts to
CONCLUSIONS

As Innovation Districts continue to emerge across the country, there is a need for public benefits to support job growth and economic resiliency. Shared space such as incubators, accelerators, coworking spaces, and makerspaces are relatively new to the real estate market. However, when these new product types become public space or a community benefit, the public innovation center is born. In the spirit of a community center, an innovation center offers the broader public access to the innovation ecosystem and startup network, while providing space within the public realm to generate new ideas and products.

Lifespan of the Innovation District

Innovation districts have existed organically in clusters long before they were designated mechanisms for urban planning and economic development. In today’s market, economic development is the driver behind urban growth and change. I believe this is partially a reaction to job loss during the Great Recession as a means to bolster the local economy and support job creation. However, as millennials enter
the job force and more companies transition to urban locations, the idea of a thriving live-work urban realm is not likely to disappear. Whether or not the emphasis on industry clusters continues to be based in digital technology remains to be seen, but the premise of co-locating an ecosystem of firms and workers will continue to thrive in cities such as Boston, Seattle, London, and San Francisco.

**Final Thoughts for Future Research**

While once it was the role of the city planner to extract public benefits from a developer, today’s market sees much more collaboration and mutual agreement between the public and private sectors. With this in mind, moving forward, one must consider whose role it is to determine public benefits, who they are meant to serve, and how they are integrated, measured, paid for, and justified.


Boston Redevelopment Authority, Seaport Square PDA, Approved 2010.

--- PDA No. 78, November 15, 2012


Jacobs, Jane. The Death and Life of Great American Cities. 1992


