

Case Studies in Innovation District Planning and Development

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Case Study: Cortex Innovation Community

The Cortex Innovation Community is an innovation district comprised of approximately 200 acres in the heart of Midtown St. Louis. It is the product of a partnership between BJC HealthCare, the Missouri Botanical Garden, St. Louis University, the University of Missouri-St. Louis (UMSL) and Washington University in St. Louis.⁴⁷ These institutions banded together in 2002 to transform a once blighted industrial area into a setting ripe for entrepreneurial activity in the life sciences and biotechnology fields. An ambitious master plan calls for approximately 4.5 million square feet of mixed-use space, 13,000 jobs and over \$2 billion in capital investment. Over 1 million square feet of office, lab and retail space have already been constructed at a cost exceeding \$500 million. Land for additional development remains available.



Cortex 1, the first multitenant office/research facility in the Cortex district, includes approximately 177,000 square feet and was completed in 2006.

Image courtesy of Washington University in St. Louis Magazine

Inception

Concentrated efforts to develop an innovation district in St. Louis began in earnest with the work of BioSTL, an organization that was formed in 2001 as the Coalition for Plant and Life Sciences to promote entrepreneurialism in that sector of the economy. Its leadership embraced the idea of an economic development strategy led by a consortium of local institutions after visiting Kendall Square in Cambridge, Massachusetts. They became convinced that a similar environment could be created in St. Louis by leveraging its extant resources.

Several of the city's major universities and life science research centers agreed to provide approximately \$125,000 in funding for preliminary planning activities, which ultimately resulted in the formation of Cortex as

a nonprofit corporation in 2002. BioSTL supported the initiative by establishing a committee comprised predominately of local real estate professionals to evaluate the space needs of emerging biotech companies and prevailing market demand. After conducting considerable market research and evaluating alternative locations, the committee chose a development site in Midtown St. Louis comprised largely of functionally obsolete industrial buildings.

The Midtown site was selected primarily because of its close proximity to the campuses of BJC HealthCare, the Missouri Botanical Garden, St. Louis University and Washington University. It also benefits from nearby green space in Forest Park, several impressive public museums and the Central West End MetroLink (light rail) Station. All of these features supported existing efforts to promote entrepreneurial activity in the area.

The Center for Emerging Technologies (CET), a state-designated innovation center offering incubator space and support services to startups, already operated two buildings in the district. The first of these is owned by the city of St. Louis and leased to CET at a nominal rate, while the second is a historic redevelopment project funded with a combination of Historic Tax Credits and New Markets Tax Credits. CET had an established track record of launching technology-driven firms, but struggled to expand the scope of its operations because of resource constraints. Development of an innovation district offered the nonprofit group an opportunity to reinvent itself as one piece of a much more comprehensive economic development strategy.

Putting the Resources in Place

Partnering institutions made financial commitments to move Cortex forward. Washington University and UMSL invested \$15 million and \$4 million, respectively, while St. Louis University and BJC HealthCare each contributed another \$5 million. These resources allowed Cortex's board of directors to begin marketing the district and acquiring land on an opportunistic basis to support future development. BioSTL contributed by persuading the state of Missouri to award \$12 million in tax credits to further aid in land assembly.

The district's first major break came in 2005, when Stereotaxis, a successful medical technology company launched at CET, agreed to serve as the anchor in a new multitenant office/research facility located in the Cortex district. Just over a year later, the 177,000-square-foot Cortex 1 building was delivered to the market at a cost of \$36 million, with Cortex serving as the developer and Clayco as the general contractor.

A second major break came in 2006, when the city of St. Louis granted Cortex zoning authority, eminent domain power, the ability to offer tax abatements and permission to enter into binding development agreements governing the use of land within its jurisdiction. This made it possible for the organization to control the character of development throughout the district, even though it owned very little of the property located within it.

A third major break followed shortly thereafter when Solae, a subsidiary of DuPont specializing in soy protein research, agreed to move its world headquarters to Midtown St. Louis.⁴⁸ Cortex negotiated a 15-year lease with

the company before conveying the development rights to Clayco, which served as both the general contractor and developer of the project. The 175,000-square-foot project was completed in 2008 and soon after sold to Equity Capital Management for \$44 million.

Experienced Leadership and Public Sector Support

After facilitating the development of two buildings and assembling over 30 acres of land, Cortex maxed out its ability to further advance its interests while relying exclusively on the efforts of a volunteer board of directors. The board therefore appointed a full-time executive in 2010 to oversee the non-profit group's operations. Strong, experienced, centralized leadership proved to be just what the organization needed to move into the next phase of its evolution after two years of stagnation.



Cortex's location in Midtown St. Louis was chosen to take advantage of an underutilized parcel of urban land in close proximity to several of the institutional partners participating in the development project.

Source: ESRI; image courtesy of Spencer Shanholtz

BioSTL helped reorganize CET as a subsidiary of Cortex and, in 2012, Cortex unveiled a new master plan emphasizing the need to create a dynamic mixed-use environment throughout the district. Key elements included enhanced access to public transportation, the attraction of retail amenities and the integration of attractive common areas into a research park setting. The refined objectives helped Cortex obtain approval for approximately \$168 million in public aid from the St. Louis Tax Increment Financing Commission.⁴⁹ The district was split into 10 project areas, allowing it to access TIF bond proceeds over time in response to new development proposals, with Cortex serving as the master developer responsible for implementing the vision.

The opportunity to defray some of the costs associated with infrastructure improvements and land assembly via TIF funding sparked a second wave of development throughout the Cortex district. BJC HealthCare commenced

construction of a 220,000-square-foot administrative office building at an estimated cost of \$44 million. Shriners Hospital for Children commissioned a 90,000-square-foot orthopedic center at a cost approaching \$50 million. Plans also were put in place for an 8.4-acre common area offering outdoor seating, recreational spaces and a variety of programs. These projects were delivered over a three-year period following implementation of the new master plan.



Adaptive reuse projects found throughout Cortex, such as the @4240 building, serve as home to both emerging technology companies and established firms of significant scale.

Image courtesy of Jordan Read

Cortex also entered into a partnership with Baltimore-based Wexford Science & Technology to help energize the district and make it a more attractive option for startup companies. Wexford agreed to acquire the Cortex 1 building and invest \$5 million to retrofit it in accordance with the needs of entrepreneurial technology firms. It also obtained the right to redevelop a historic warehouse previously acquired by Cortex into a \$73 million multitenant building comprised of 183,000 square feet of office and lab space. Washington University made the latter of these projects, called @4240, possible by master leasing 40 percent of the space, moving its Office of Technology Management and Research Administration from its main campus to Cortex and aiding in the procurement of debt financing via mortgage guarantees.

Activating the District With Innovation Centers, Retail Space, Housing and Urban Amenities

In addition to CET, Cortex frequently refers to four other so-called innovation centers that emerged throughout the planning and development of the Cortex district. Each offers a unique means of stimulating creativity and entrepreneurialism. The first of these resulted from an agreement with Cambridge Innovation Center, now known as CIC, to lease 30,000 square feet in the @4240 building to operate its first facility outside of Kendall Square in Cambridge, Massachusetts. CIC offers office and lab space to companies through short-term membership agreements ranging in cost from \$200 per month for co-working space to \$1,200 per month for a two-person

private office. Membership includes access to conference rooms, concierge services, printing/copying facilities, kitchens and high-speed internet. All are made available to the companies in residence to minimize the burden of facilities management.

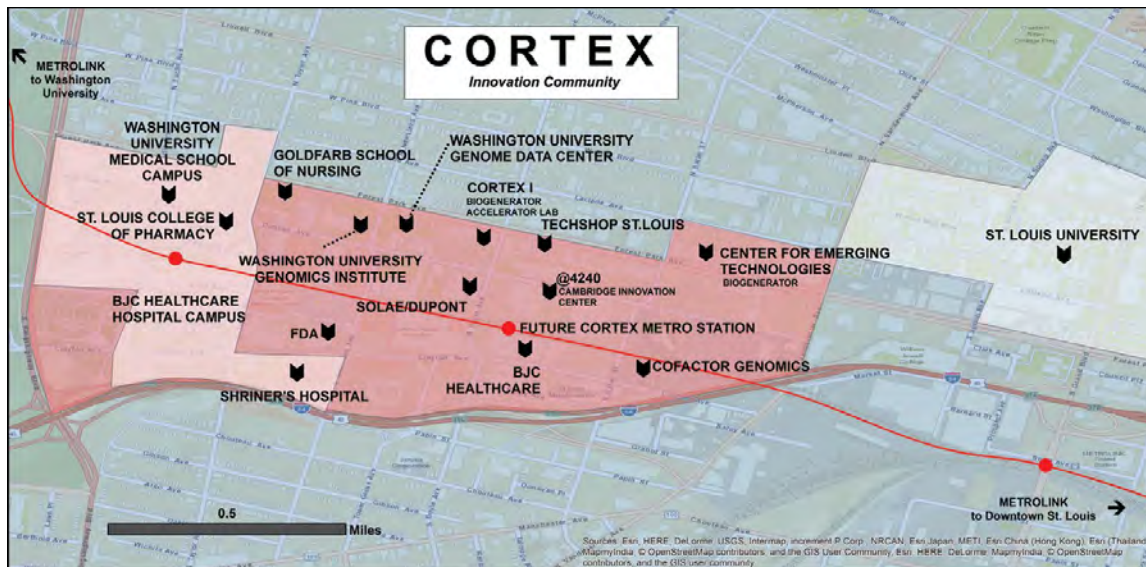
CIC also took over the operation of approximately 88,000 square feet of co-working, office and lab space previously operated by CET, thereby freeing up CET to focus on the delivery of training programs designed to help startup companies develop business plans, identify market opportunities and access capital. One such program, Square One (SQ1), offers a 10-week boot camp and two four-week Ignite training programs to support early-stage entrepreneurs interested in monetizing their ideas. Another program, Advance St. Louis, assists more established companies by providing them with continuing education. CET also runs a variety of other workshops to support venture growth, including National Institutes of Health (NIH) Small Business Innovation Research and Small Business Technology Transfer (SBIR/STTR) training activities to improve the likelihood that local companies can successfully compete for federal research grants.

The remaining innovation centers include BioGenerator, Venture Café and Tech Shop. BioGenerator is a nonprofit subsidiary of BioSTL created to support high-potential biotech firms on a competitive basis through the provision of lab space, access to executives in residence and investments made in the form of debt financing convertible into equity. It serves approximately 50 companies operating in Cortex and regularly collaborates with St. Louis University and Washington University to provide startups with access to institutional research facilities.

Venture Café is a weekly program developed by the Venture Café Foundation and operated on-site by CIC. It attracts as many as 500 attendees to listen to speakers and engage in informal networking. Venture Café simultaneously serves as a meeting place for those working at Cortex and an access point for external parties interested in leveraging the district's resources.

Tech Shop operates fabrication studios across the country that are equipped with machinery and software used in the design and production of prototypes. The company plans to bring 18,000 square feet of makerspace to the Cortex district in August 2016.⁵⁰

Cortex's leadership sought to further activate the district through the attraction of a major retailer. These efforts paid off in late 2013, when Ikea announced plans to build a 380,000-square-foot store in the district. The \$80 million facility opened in 2015. Ikea used \$32 million in TIF proceeds to reduce the cost of assembling and developing a 20-acre site.⁵¹ This project served as yet another catalyst for development throughout the Midtown submarket, which will include several planned residential projects serving the area's growing population. Notable examples in the vicinity of Cortex include projects proposed by Cornerstone Development, Hallmark Communities and Landmark Properties that are expected to bring hundreds of multifamily housing units to the area.⁵² The projects target a combination of students, young professionals and other knowledge workers.



The developers of Cortex plan for over 4.5 million square feet of mixed-use space on approximately 200 acres of land upon project completion.

Image courtesy of Washington University in St. Louis Magazine

A number of other urban amenities are planned in and around Cortex to complement the emerging mixed-use environment. Funding is in place to connect the district to the Great Rivers Greenway in 2017, and St. Louis' first new MetroLink station in over a decade is scheduled to open on-site in the same year. These projects represent only a small portion of over \$100 million in planned public infrastructure improvements. Spillover real estate development immediately outside of the Cortex district continues at a torrid pace and is expected to eclipse the value of projects completed within the district in the years to come. Cortex as an organization has recognized this trend by strategically acquiring land outside its jurisdictional boundaries. It recently purchased 3.5 acres of land across the street from Ikea for \$3 million to accommodate future development supporting its mission.⁵³

Factors Contributing to Success

Many of those involved in the planning and development of the Cortex Innovation Community attribute its success to the long-term commitments made by its institutional partners, coupled with enthusiastic and effective leadership in both the public and private sectors. Consistent efforts were made to leverage St. Louis' competitive strengths and sufficient financial resources were put in place to produce visible signs of progress in the early stages of development. These decisions, among others, helped the development team and the development concept build credibility in the marketplace, contributing to the project's economic viability. Political support was garnered by taking into account social policy goals such as workforce participation and urban revitalization within the framework of a comprehensive economic development strategy. Control over regulatory approvals and construction activity throughout the district as a whole also allowed Cortex as an organization to implement its development strategy over a multiyear period.

Cortex devoted a significant amount of attention to creating a tenant mix comprised of large corporations and startup enterprises. The large corporations helped legitimize the district and provide it with a strong foundation, while the startups created energy. The combination has not only proven attractive to life science and biotechnology companies, but has also appealed to those in other industries interested in innovation. Boeing, for example, moved its innovation group, known as Boeing Ventures, from its Hazelwood, Missouri, campus to a 7,500-square-foot suite in the @4240 building in 2014 to take advantage of the entrepreneurial climate there.⁵⁴ The group focuses on commercializing technologies developed by the company's engineers that fall outside the aerospace industry.⁵⁵

Technology firms including Pandora, Square and Uber moved operations to the district in 2015. These operations range in size from relatively modest co-working space to a 17,000-square-foot facility.⁵⁶ Square opened its fourth domestic office in the district, housing approximately 200 employees, largely because it needed to operate in an environment attractive to the millennial workforce.⁵⁷ Pandora's and Uber's decisions to open smaller regional sales and marketing offices in Cortex were influenced by similar factors.⁵⁸ These additions helped @4240 approach full occupancy, with over 60 companies operating on-site by mid 2015.⁵⁹

Efforts to promote social equity and environmental sustainability can also be observed throughout the Cortex district. Projects funded with TIF proceeds are subject to workforce participation goals requiring 25 percent of labor hours to be performed by minorities, 5 percent by women and 15 percent by apprentices participating in approved programs. Partnerships are emerging with the public school system to increase awareness of career paths in the science, technology, engineering and math (STEM) disciplines and to provide access to makerspace available in the district's innovation centers.

These endeavors complement the work of nonprofit organizations such as LaunchCode, which operates on-site to help individuals with nontraditional credentials obtain training and entry-level employment in the field of computer programming. A commitment to environmental sustainability is reflected in LEED-certified buildings on-site, as well as a number of historic redevelopment projects serving the space needs of technology firms. Ikea boasts one of the largest solar roofs in the state. Cortex Commons benefits from an innovative stormwater capture system. These examples represent just a few of the steps taken by Cortex and its partners to address social equity and environmental issues.

Challenges Moving Forward

Cortex has significant momentum and is making great strides to encourage entrepreneurialism and innovation in the St. Louis region. Nonetheless, managing expectations remains a very real challenge for the organization's leadership. Some members of the community expect immediate returns on the sizable public sector investment made in the project, despite the fact that it may take 20 to 30 years for it to reach its full potential. The need to

negotiate with a disparate group of landowners within the district can also slow the pace of progress and increase the number of factors that must be taken into account before important decisions are made. These considerations complicate the development process even though Cortex has a clear vision, significant resources and an enviable amount of control over what goes on within its jurisdiction. The organization must continually encourage community engagement, maintain an atmosphere of cooperation and trust among stakeholders and operate transparently to address these concerns.



Institutional partners such as BJC HealthCare demonstrated a commitment to Cortex by establishing a durable presence on site through the construction of new facilities.

Image courtesy of Jordan Read

A second challenge for Cortex relates to the prioritization of programming. Real estate decisions were all-consuming in the district's early stages, when much less attention was devoted to encouraging meaningful interaction among the companies, individuals and institutions working on-site. This initial misstep has been addressed in a variety of ways, including the Venture Café program and the opening of Tech Shop. However, several of those involved in the development acknowledge a need to keep an eye on the “bigger picture” and continually focus on promoting synergistic interactions among tenants. This can prove difficult in the presence of intense pressure to attract capital investment and stimulate construction activity. The long-term viability of Cortex as an innovation district is likely to depend on its leadership's ability to let programming continue to drive real estate decisions instead of the other way around.

Only by remaining mission driven and focusing on defined economic development goals can Cortex address a final challenge, which relates to maintaining its identity. The project started as a concentrated effort to promote entrepreneurship in the life sciences and biotech fields. The tenant mix has diversified greatly over time, however. This type of growth is advantageous because it facilitates knowledge spillovers across industries that lead to innovative new products and services. It can, nonetheless, be difficult to manage because it creates a need to build trust and a common culture among individuals with very different professional backgrounds, while clearly articulating a value proposition that is applicable to companies with very different characteristics. Resources are in place to respond to these challenges at Cortex, but they must remain a priority.