The Imperative to Anticipate and Respond to Tech-Driven Disruptions

AARON N. GRUEN

Not every town can become a Silicon Valley. But they can invest in their own competitive advantages.

THE DIGITAL REVOLUTION has disrupted and will increasingly disrupt industries; shift consumer demands, attitudes, and tastes; and influence the future of cities.

For example, Uber's and Lyft's peer-to-peer models of ride-sharing services, as well as the development of driverless vehicles, are transforming urban transportation by combining technological innovation, behavioral science, and economic principles to provide superior transportation alternatives. Not only does the ride-sharing model doom the traditional cab industry, but also the development of ride-sharing services, driverless cars, and other transportation innovations suggests that public investments in 20th-century transportation innovations of fixed-rail systems and streetcar systems that fail to cover their operating costs—let alone provide returns on capital investment—may be akin to doubling down in the 1870s on the steamboat industry right before railroads supplanted steamboats as the dominant source of transport of both goods and people.

What Cities Can Do

Public investments in convention centers, football stadiums, and other frequently popular megaprojects in cities trying to regain their former status will not make up for deficiencies in the prerequisites for innovation. Prerequisites for innovation include economic diversity, a culture of entrepreneurship, high-quality education, a positive business climate, and basic public safety and infrastructure and related municipal services.

Public resources should instead be focused on creating the framework for place reinvention. Effective public investments accelerate innovation, improve private firms' productivity, and enhance residents' quality of life and incomes. They achieve these things by facilitating the agglomeration of high-quality, efficient places that attract, retain, and connect talented people and by creating land use plans and regulations that foster entrepreneurial networks and exports.

To succeed in an era of globalization and rapid innovation, firms must develop new structural and organizational resources, cultures, and capabilities as they move to locations preferred by entrepreneurs that can attract skilled labor and

Public investments in convention centers, football stadiums, and other frequently popular megaprojects in cities trying to regain their former status will not make up for deficiencies in the prerequisites for innovation.

have ready access to markets and suppliers. These locations must also provide access to state-of-the-art communication facilities and air travel connections. Creating the conditions and capability for innovation can serve as a catalyst for dramatic economic growth and the demand for real estate such as that exemplified by Silicon Valley and downtown San Francisco, where firms have strong linkages to the regional economy. Silicon Valley, for example, benefits from not only a wonderful climate, but also superior education institutions such as Stanford University and a deep venture capital base that values proximity to innovative companies, TES

risk taking, a highly educated workforce, and startup firms.

Public investments should help cities change and reorient themselves to provide services, amenities, building space, and mixes and scales of land uses that attract and hold the talented labor on which innovative companies depend, and increase agglomeration economies to firms, institutions, and talent. Chattanooga, Tennessee, for instance, created its own municipal fiber-optic network, increasing its broadband speeds tenfold. As described in an October 2, 2015, *Urban Land* article citing Chattanooga, the high-speed fiber-optic network has drawn highly skilled individuals and technology firms that otherwise would not have been attracted to the city and represents a continuing transformation of the community from heavy manufacturing to the technology and business service sectors with support from a variety of public investments. The evolution of the economy and the downtown renaissance occurring in Chattanooga show the importance of public investments to help cities sustain and reinvent themselves through secular changes.

In addition, cities and other governmental jurisdictions need to be strategic about how to use regulatory policy to respond to new peer-to-peer platforms or other new business models to provide services and goods that disrupt traditional and entrenched firms and industries. To continue with the example of ride-sharing services, while Uber and Lyft should be subject to appropriate taxation, regulators should recognize that these services enable levels and quality of service that make many traditional taxi regulations unnecessary. Riders, for example, know in advance how much a ride will cost and use reviews to assess the quality of drivers, negating the need for extensive rules intended to prevent drivers from taking advantage of uninformed riders. Accordingly, municipal regulators can appropriately have a light regulatory touch, focusing their interventions instead on basic safety concerns and providing tax treatment comparable to that of the traditional taxi industry rather than limiting the supply of service providers.

Schools of sufficiently high quality are one of the basics of place shaping and economic development. The case for private sector engagement, including by real estate developers, in improving schools is compelling: a well-educated and skilled workforce is crucial to corporate competitiveness and to economic growth, particularly in the knowledge-based, globalized economy of the 21st century. In 1989, ULI visionary member Daniel Rose of Rose Associates founded and funded a significant educational reform venture—the Harlem Educational Activities Fund (HEAF), an after-school, weekend, and summer program serving disadvantaged minorities in the central Harlem, Washington Heights, and south Bronx areas of New York City. The student outcomes of the HEAF programs have been dramatic. HEAF has conducted research and development to identify best practices and is an example of the kind of innovation that the private sector can bring to education.

Improving the quality of education not only improves students' skills, but also helps cities attract and retain households that value high-quality education, creating a virtuous feedback mechanism. Cities with better-educated residents are better able to reinvent themselves to respond to change and competition. Cities should capitalize on the growth in the availability of high-quality online education as an alternative that can help families and students who are priced out of traditional higher-cost higher-education institutions or who live in neighborhoods that offer inferior K–12 public education.

Examples of Adaptation

Consider the successive shifts experienced in the San Francisco Bay area, for example. During the 1970s, the region shifted from the previous decade's emphasis on industrial activities to a new focus on finance, insurance, and real estate, and professional and technical services. In the 1980s, the region shifted again to high-technology hardware. In the 1990s, the emphasis went to life sciences and software; and during the 2000s, the shift was to the internet. Most recently, the shift has been toward social media, cloud computing, and clean technology.

The Bay Area constitutes a prime example of a local economy reinventing, reordering, and reshaping itself to adapt to new opportunities. The prerequisites for innovation and adaptation present in the San Francisco Bay area contrast with Detroit, which, with the dominance of the Big Three automakers—General Motors, Ford, and Chrysler—developed a less diverse economic base, a poorly educated workforce that was disproportionately large, and an insular culture. This led in the 1970s to the Big Three being caught unprepared to compete with the Japanese and German automakers that emerged to respond better to consumers' changing preferences and tastes.

The municipal basics for providing the conditions for innovation also include transportation infrastructure, digital connectivity, a well-maintained public realm, and civic and social infrastructure. These conditions create an environment for firms and organizations to adapt and remain successful and not be constrained by barriers that local government has the power to remove or mitigate. Cities can therefore make prudently sized public investments in amenities and services that help attract and retain skilled residents.

Authentic, sustainable amenities and services will appeal to tourists, too. Consider the following examples:

Chicago's iconic 25-acre (10 ha) Millennium Park, now nearly 11 years old, transformed the East Loop neighborhood into a 24-hour mixed-use activity center teeming with tourists, residents, and visitors from the suburbs. The city's share of the development cost totaled $270 million while private donations totaled $220 million. The real estate, economic, fiscal, cultural, and branding benefits generated by the park greatly exceed the development cost. Millennium Park is a classic example of an investment in public amenities spurring private investment and development that appeals to both residents and tourists.

The case for private sector engagement, including by real estate developers, in improving schools is compelling.

In the Philadelphia area, the transformation of the Schuylkill Banks riverfront over the past ten-plus years—including the completion of a boardwalk in 2014 that provides an important link to the Schuylkill River Trail and to Center City from University City and West Philadelphia—has spurred major development on both sides of the river in New Jersey and Pennsylvania and is helping bridge the traditional divide between the Center City and University City/West Philadelphia neighborhoods.

The 2006 design of Redwood City's Courthouse Square helped the downtown of this San Francisco peninsula city 27 miles (44 km) south of San Francisco shake off its longstanding "deadwood city" reputation. The walkable, amenity-laden downtown with transit service and proximity to booming technology companies accelerated the development of entertainment, residential, and employment uses in the city's downtown. However, such investments are best made once sufficient basic public services and infrastructure are provided and in conjunction with the establishment of a growing and diverse economic base.

Planning policy also can be used as a lever to encourage mixed-use development, including sufficient housing, which enhances business and resident productivity significantly more than conventional single-use, stand-alone corporate sites do. For instance, Deerfield, Illinois—where the headquarters of Walgreens, Baxter International (a large health care firm), and Takeda Pharmaceutical Company are located near each other in office parks and stand-alone corporate campuses—recently permitted the first apartment projects to be built in and near these longstanding office developments.

Policy makers, however, need to be realistic and should not use subsidies to encourage the development of new buildings where demand for more space is absent and should recognize that not every community or region will become a biotechnology hub or a green technology center. A better approach is to build on existing strengths and identify innovative activities already being pursued by the private sector locally, and to identify complementary activities that may be effectively targeted and which can be scaled up by helping existing local firms create and sustain their competitive advantages. This requires identifying the unique abilities inherent in local communities to effectively compete and the changes in the local environment needed to enhance the ability of businesses and professions to serve domestic and global markets. This can be accomplished through analysis of employment growth and the shifts in the shares of employment by economic sector and an assessment of how firms in the industrial sectors are related. Also required is an analysis of the demographic and labor force characteristics and the associated commute shed.

One way of identifying the type of firms likely to benefit from existing or cultivated local advantages is through surveys of businesses that reveal the following: 1) the assets and liabilities of the municipality or region from the perspective of firms currently or formerly located in the area or which considered the area but decided against moving there; 2) the factors important in attracting new firms and encouraging the health and retention of existing ones and the factors inhibiting economic development; and 3) target industries that would derive comparative advantages from the location. Insights into the scale and mix of businesses that can benefit from the locality can also be inferred from the identification of the businesses moving into and growing in employment centers within the same market area.

Implications for Successful Places

Advances in "big data," cloud computing, robotics, artificial intelligence, and life sciences are likely to increasingly be applied to disrupt established business models, change how goods and services are provided, and alter consumer attitudes and tastes—and, ultimately, the structure of economies. To cope with such disruptions—and especially to thrive—communities and regions must improve the stock of human capital. This will require reforming K–12 school systems to encourage the attraction and retention of effective, knowledgeable teachers; early childhood interventions such as those pioneered by HEAF; and improvements induced by competition and increased choice. Communities must facilitate through land use and other public policies and investments the agglomeration of benefits to businesses, residents, and visitors. Successful regions and places will, above all, foster the conditions that allow households, firms, and cities to embrace change and reinvent themselves to respond to anticipated and unforeseen pressures and opportunities. **UL**

AARON N. GRUEN is a principal of the urban economics, market research, and land use policy and predevelopment services firm of Gruen Gruen + Associates, which has offices in San Francisco, Denver, and Deerfield, Illinois. The author benefited from sources of information and insight from a variety of books, including *Triumph of the City: How Our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier, and Happier* by Edward Glaeser (2011) and *The New Geography of Jobs* by Enrico Moretti (2013).