Next City: City Design and Urban Planning Innovation for the New Era

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“In a period of flow, men have the opportunity to remodel themselves and their institutions.” – Lewis Mumford, 1925.¹

“The economic and social pattern is always in a state of flux. However, there are periods of unusual activity. For decades at a time there may be a marked drift in a particular direction. We now appear to be on the threshold of a period in which a strongly marked new trend will be established.” – Report of the Commission of Housing and Regional Planning to Governor Alfred E. Smith, 1926.²

While the planning and design community remains justifiably fixated on advancing sustainability, the world of business and economic development has shifted its focus to the emergent innovation economy. Richard Florida’s The Rise of the Creative Class has been the most visible contribution to a substantial and growing body of urban sociology and management research documenting a massive transformation in work, daily life, and the drivers of prosperity.³ This work demonstrates that we have entered one of Lewis Mumford’s periods of “unusual activity,” equal to that brought on by the steam engine and electrification at the dawn of the industrial age. As before, this economic transformation makes many of the customary ways of developing a successful career, business or city obsolete. But whereas the new imperatives for individuals and businesses have been receiving sustained attention, the implications for the planning and development professionals must respond with long overdue innovations in how we plan, design, develop, regulate, and think about cities that address not only ecological sustainability, but also the new imperatives of economic prosperity.

¹ Lewis Mumford, Survey Graphic 7 (May 1925): pp. 130-133.
design of cities have not—even though it is becoming increasingly clear that urban environments are the preferred venue for innovation and for innovators. To make the most of the rapidly unfolding new era, urban design and development professionals must respond with long overdue innovations in how we plan, design, develop, regulate, and think about cities that address not only ecological sustainability, but also the new imperatives of economic prosperity.

We can get a sense of the magnitude and dynamics of what we are in for by examining the last period of such transformational change. Not much more than 150 years ago, we were an agricultural society, tied to the land for our sustenance. Communities were centered loosely on mill towns and trading posts located within horse-riding distance of farms, ranches, mines, fisheries, and logging operations. This settlement pattern was sparsely populated but fine-grained—a legion of closely spaced tiny towns distributed across farmland and countryside. Major cities (housing less than 5% of the population) were anomalies in this pattern. They were critical players in the growing network of national and international trade, but peripheral to most people’s lifestyles and experiences of the world.4

That long-enduring pattern of urbanism was completely transformed by the explosion of invention and mass-mechanization that began in the mid-19th century.5 Machine-assisted labor and mechanized transportation made it possible to make much more of everything (especially food) with less human effort, and to serve distant and larger markets from bigger and more productive facilities and farms. But the real wealth-generating potential of these new technologies was unlocked by the advent of the assembly line, a method of organizing human work in a machine-like way. The assembly line optimized productivity by breaking down, segregating, and optimizing each specialized task in the production process. By reducing the required human labor to standardized sets of repetitive instructions, the assembly line allowed factories to employ massive numbers of untrained, unskilled laborers to manufacture complex products. The rise of these labor-intensive workplaces set off a tidal wave of migration from farms and tiny towns to factories, which were clustered around nodes on the new railroad networks for access to fuel for steam-driven machinery. Big industrial cities emerged and began to dominate the built environment, bringing urban lifestyles to a rapidly growing proportion of the population.

The factory-centered economy catalyzed a complete transformation of daily life, social conventions, and our mental construction of the world. Assembly line work had to be tightly controlled and synchronized to maximize productivity. Everyone tied to the factory slept, woke, worked, ate lunch, quit work, went home, relaxed, played, and prayed at the same times and on the same days, in accordance with the new “workday,” “work week,” and “week-end.”6 The new

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regime swiftly became the modern lifestyle and mind-set, reflected in media, fashion, and language.

About 80 years into this process, the Congrès Internationaux d'Architecture Moderne (CIAM), a group of architects from the leading industrial nations, proposed a radical reorganization of cities based on the principles of the assembly line. They envisioned the standardization and mass-production of the component parts of cities, with land development and building type segregated and optimized according to specialized function. Separate-function zones would be connected by wide arterial roadways (like mechanical conveyor belts) similarly optimized for a single function—mobility.

The timing was perfect. CIAM’s radical ideas became fashionable during the period of enormous pent-up demand for new building unleashed after 15 years of the Great Depression and World War II. One after another, the residential subdivision, commercial strip, shopping mall, business park, central business district, and theme park became the standardized, segregated, mass-produced components of the modern built environment.

The Modernist experiment fit the assembly-line economy to a tee. It was based on the transition to standardized new lifestyles and uniform household structure; it harnessed the exciting new technologies of automobiles, electrical grid, telephones, and refrigeration; and it was supported by abundant land and cheap domestic energy. Society loved it—everyone wanted to be modern. The restructuring of cities to fit the imperatives of industrial work and lifestyles drove a post-war building boom that was a central pillar of the American economy for decades. This restructuring played a key role in the immense burst of prosperity that propelled the United States to global leadership.

Looking back, we can see that the essential driver of this extraordinary period of social and urban evolution was a fundamental shift in the nature and organization of work, catalyzed by a new form of energy (fossil fuels). Changes in the workplace filtered in to daily lifestyles and market trends. The new logic of wealth creation became an integral part of the modern mind-set. These new paradigms were inevitably applied to city planning and urban development, instigating dramatic changes to the pattern of the built environment.

An equally profound shift is now underway, one once again ushered in by technological change and its effect on the nature of work. In the late 20th century, a new energy source began to assert itself in the workplace—computing power. Just as fossil fuels enabled humanity to vault past the productivity limits of human and animal muscle, computing power is rapidly increasing human productivity in a wide range of industries. This began with the automation of repetitive tasks—like those found on assembly lines, vastly reducing the amount (and type) of human labor needed to produce standardized products. Advances in computer-driven telecommunications, in combination with political and regulatory changes have also provided unprecedented connectivity across the world, enabling multitudes of highly motivated people and companies in

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emerging economies to work, collaborate, and compete in the global marketplace.\textsuperscript{10} Instead of the well-known products of a few large national firms dominating the marketplace, an expanding range of competing products and services (as well as mass production manufacturing now available on sub-contract) flood the global marketplace with increasing speed. Widespread, miniaturized, wireless personal computing tools make it easy to find products and services and instantly compare their price and quality.

To compete in this environment, large firms have fundamentally reorganized their business models. Formerly vertically integrated companies now typically outsource the wide range of tasks that are peripheral to their core competencies. Instead of focusing on expanding the size and efficiency of mass-production operations, firms focus on using highly skilled people and computing power to invent new and improved products and services with increased speed and creativity.\textsuperscript{11} The heightened importance of rapid creative invention has affected all industries—from mining and agriculture to computing.\textsuperscript{12}

Business publications and culture are currently fixated on understanding and nurturing innovation—now understood to be the mainstay of competitive advantage.\textsuperscript{13} Industry-sponsored research into the sources of new products and processes has shown that the great majority of innovations have resulted from group collaboration rather than individual effort.\textsuperscript{14} We have learned that innovation arises from conversation and exchange of ideas among people with different specializations and experiences, and from planned (and especially unplanned) interactions of knowledgeable people with unfamiliar perspectives and ideas.\textsuperscript{15} “Innovation is a social process,” explains Doug Henton and his team at Collaborative Economics in Silicon Valley.\textsuperscript{16} The critical roles of unplanned meetings and serendipity make face-to-face interactions particularly essential.\textsuperscript{17}

\textsuperscript{13} Between December 2010 and October 2012, the top two keyword categories for a wider range of business publications including \textit{Harvard Business Review} articles were “creativity” and “innovation,” returning 67 and 41 tagged articles, respectively. In contrast, “leadership” returned 12 tagged articles. See http://www.mindwerx.com/blogs/topics/134?page=4.
\textsuperscript{14} Steven Johnson, \textit{Where Do Good Ideas Come From: The Natural History of Innovation} (New York: Riverhead Books, 2010).
\textsuperscript{15} Legendary companies with world-beating records of innovation such as 3M, Google, and Pixar, employ these processes. Early innovators like the iconic 3M were the first to formalize a work process that involves not only deliberately mixing specialists with different technical expertise, but also changing the mixtures at regular intervals to freshen the exchange with different types of knowledge and perspectives. See Jonah Lehrer, \textit{Imagine: How Creativity Works} (Boston: Houghton Mifflin Harcourt, 2012).
\textsuperscript{16} Collaborative Economics, \textit{Innovative Regions: The Importance of Place and Networks in the Innovative Economy} (Heinz Endowments, 1999).
The realization that innovation is fostered by providing settings that bring people together to collaborate and exchange ideas (rather than segregating work by specialty as in the assembly line model) has already resulted in profound changes inside the workplace. Vertical integration and top-down control worked well when business models were based on mass-production, repetition, and standardization; the shift to innovation has resulted in a widespread reorganization around networks of smaller and much more interdisciplinary creative teams of skilled people that operate very independently within as well as outside of large companies. There has been intense interest in the specific interior designs implemented by leading innovators such as Pixar, 3M and Google, all of whom have redesigned their offices to accommodate group collaboration and to actually force maximum interaction and exchange. New organizational formats and office designs such as co-work, work cafes and incubators have also emerged to fit the creative focus of the growing legion of start-ups and small businesses that make up the fastest growing segment of the innovation economy.

As in the 19th and 20th centuries, fundamental changes in how we work are spilling over into daily life. Lifestyles, consumer preferences, and real estate demand are all affected. Because synchronized labor is no longer necessary as it was for the mass production assembly line economy, the 9-to-5 workday is being replaced by work happening “24/7.” The lock-step domestic lifestyles that fit the rhythms of the factory are losing relevance. In addition to happening anytime, work is also increasingly happening anywhere. The use of traditional office space continues to shrink significantly as work has reorganized and also spread to coffee shops, temporary work spaces, home offices, co-work spaces, and other non-traditional work environments. The widening range of temporal and locational choice permits a much broader variety of lifestyles, inviting a similarly widened spectrum of personalities and talents to engage in productive contributions to the economy. It is also giving rise to a growing demand for more choice in living and working environments, and especially for places that mix work, home and socializing. Dense, mixed-use, pedestrian-friendly districts with transit service have become the preferred location for a significant portion of knowledge workers and companies.

This is in many ways a repetition of the same sequence of transformation we saw in the early phases of the industrial economy: changes in the nature of work are again rippling out in ever-widening influence on businesses, lifestyles, ideas and, ultimately cities. The urban design that so closely fit the assembly line economy is now very much out of sync with the requirements of

19 There are still plenty of repetitive work tasks: call centers, data entry, etc. And not everyone is involved in cutting-edge innovation. One of the largest types of employment falls within the wide range of pink-collar service jobs from fast food to hair cutting and home care assistants. Richard Florida advocates that we find a way to unleash the creative potential of people in these jobs, to make these jobs more valuable.
the innovation economy and the society that is emerging in its wake. The Modernist, assembly-line city facilitated work-and-life synchronization, separation of work from home and other daily functions, and compartmentalization of specialized work types—all of which are no longer relevant in the innovation economy. Once again, changes in how we engage in productive work and daily life are transforming many of the things we need the city to do for us.

This is a time of enormous opportunity. But to secure the full benefits of the rapidly unfolding new economy, we must realign our city-building ideas, practices, and institutions with the new drivers of prosperity.

**The Regional Pattern.** To make our metropolitan regions prosperous as well as sustainable, we must “nucleate” them. Urbane, compact districts—each characterized by a particular mix of concentrated workplaces, homes, shops, and services at the crossroads of the transportation infrastructure—are now critical to prosperity. By offering settings with sufficient charm, liveliness, and public amenities to bring people out and in contact with one another, these centers are magnets for serendipitous exchange and information spillover. Revitalized downtowns, industrial districts re-inhabited by start-ups, co-work and small businesses, redeveloped shopping mall sites, the activity centers of “Next Generation” business districts, and the campus towns of educational and medical districts will become the critical urban design infrastructure for innovative regions.

The old mind-set of downtown and suburb that dominates our city planning policies and conversations hampers our progress. As the innovation economy takes hold, the craving for a multitude of venues for meeting and exchange is providing a growing source of market demand. Determining appropriate locations in the region to reinforce or build new centers characterized by density and a synergistic mixture of uses (while protecting and properly serving existing single-family neighborhoods) is a critical strategic decision for business, municipal, and regional success.

**Workplace Districts.** The 20th century Business Park and central business district (CBD) are legacies of the industrial economy and are now entirely out of sync with the demands of the innovation economy and the preferences of innovators. The parts of our cities that house the primary drivers of our economy can no longer be isolated, sprawling, single-use employment zones filled with uniform building types. They must be cohesive and connected urban districts, brimming with diversity and vitality.

Creative industry and municipal leaders can be expected to begin infusing the old formats with the clustering and density, synergy and mix, public places and amenities that enable the frothy interchange critical to the innovation process. A vital district public realm is an essential part of this. Walking and bicycling connections that enable street life and links to transit will be enhanced by pedestrian-scaled ground-floor architecture, smaller blocks, and a more nuanced hierarchy of walking streets and service streets (the latter especially where trucks and freight still play an important role). Instead of being used to separate and privatize company facilities,

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parking and landscaping will need to be configured to maximize activity and interaction both within secure company compounds and among businesses.

Instead of strip malls for workers to drive to for lunch or office supplies, 21st-century workplace districts will need to be organized around the all-important activity centers—centrally located shops and services in settings that instigate “collision,” and conversation. Flexible, market-based workplace district master plans should ensure that buildings with greater concentrations of employees will be positioned closest to (as well as in floors above) these centers. To add to the mix and vitality, it will make sense in many instances for side streets and outer layers of workplace districts to feature a range of work-live, live-work, and apartment buildings amid smaller office buildings than those likely to dominate the district’s workplace core.

**The Role of Retail Development.** In all of its forms over the past half century—strip mall, superstore-anchored center, power-center—the pattern of retail development has been exclusively single-function and auto-oriented in keeping with the principles of the assembly-line city. In the years following the Great Recession, the location and configuration of new shops, services, eateries and entertainment venues will be precious to a city’s success in ways that go beyond sales tax revenues. Now we need the retail uses to generate movement and interaction between people, not to generate auto trips. Competitive cities will deploy retail as an activity generator in innovation districts and to provide places for meeting and socializing—which are key to attracting many knowledge workers. Those that fritter away their supportable market share of retail as stand-alone, auto-oriented developments will lose out.

**Mobility.** Value in the industrial economy was created by making and moving vast quantities of physical products, including information products like files, correspondence, reports, drawings, recordings, and pictures. Combined with the synchronization and segregation of work and daily life functions, this created an insatiable demand for roadway vehicular capacity. Twentieth century city-building practices necessarily placed the highest priority on mobility, dedicating most of the street space in cities to the movement and parking of vehicles. Sidewalks shrank, trees and other amenities disappeared, and street life went with them as engineers were tasked with squeezing as much vehicular capacity into the spaces between buildings as possible.

In the innovation economy, cities derive their value from attracting and delighting a large population of knowledge workers. Market demand has begun to favor walkable urban districts instead of segregated sprawl. Leading city decision-makers are shifting their priorities to providing the infrastructure and amenities that support social interaction, even when it requires that some auto-mobility capacity be sacrificed. In today’s digital world, the singular priority of moving physical goods and people is giving way to the need for a high-quality public realm featuring comfortable sidewalks, street furniture, café tables, protected bicycle lanes, and pocket parks, especially in urban centers.

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Transit infrastructure is critical to this change. Incorporating transit is the only way to provide sufficient mobility for the type of city centers we need to remain competitive. Modern, comfortable, and probably Wi-Fi-serviced transit is essential to enable—and to stimulate investment in—the necessary minimum densities of employment and/or residences in and adjacent to urban centers. Equally important, we need transit to free up street space: public transit simply uses much less street space than private automobiles. To thrive in the innovation economy, a city must use a far greater proportion of public space in next-generation business districts, downtowns, campus towns, city centers, and regional centers to provide sidewalks, boulevards, plazas, courtyards, and green spaces. These are the amenities that generate the street life and urban vitality that are essential to fostering innovation and attracting innovators.\footnote{26}

**Planning for Prosperity and Sustainability in the New Era.** The urban framework required for prosperity today is a network of great urban districts that function as places of interaction and idea exchange at the dense hubs of our social and transportation networks. Aligning with the innovation economy requires retrofitting our still sprawling, auto-oriented metropolitan areas to ones structured around transit networks and characterized by clustering and density, synergy and mix, public spaces and pedestrian amenities. These are the same urban design outcomes needed to conserve energy, decrease greenhouse gas emissions, reduce the waste of land and natural resources, and preserve species habitats.

The confluence of the requirements of sustainability and prosperity will change everything. While new kinds of jobs and investment may be the most urgently needed, they are a part of general hunger for a better future, for a new vision that describes where we are going and why that is good and worth working for. To move forward, the primary challenge for the planning and design community is to help community leaders and stakeholders to understand the opportunities and imperatives of the new era. The last time work changed, Americans eagerly remade the world and its cities—and got rich doing so. Work is changing again, opening up a space for conversation, innovation and a new basis for prosperity.

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\footnote{26}Robert Cervero of the University of California, Berkeley has published the results of research into ground-breaking efforts in Seoul, San Francisco and Hong Kong that respond to the mandates of the innovation economy by trading off some auto-mobility capacity for amenity. Professor Cervero’s research demonstrates that these efforts have proven successful, particularly when measured in terms of appreciating real estate values. The investment in transit plus amenity is shown to be an economically viable response to the mandates of the knowledge economy. See Robert Cervero, *Transport Infrastructure and Global Competitiveness: Balancing Mobility and Livability* in *The Annals of the American Academy of Political and Social Science*, Vol. 626, Los Angeles: Sage Publications, Vol. 626, November, 2009.