METROPOLITAN POLICY PROGRAM

Using Information to Drive Change:
New Ways to Move Urban Markets

J. Pari Sabety and Virginia L. Carlson

Unleashing the potential of America's cities depends on developing a systematic view of how information influences market investment decisions, especially as America moves to a more knowledge-based economy. This brief examines the critical role of information in urban markets. It begins by describing the information cycle: how information is created, reported, collected, disseminated and turned into "actionable knowledge" used to make investment decisions in urban areas. When critical information is not available, not accurate, or not used by market actors, an "information gap" exists. The authors postulate that closing this gap will help markets to function more effectively to build healthy communities, laying the basis for a robust investment climate, a vibrant labor market and residents with strong connections to the economic mainstream. The brief concludes by suggesting actions in three major areas to address the gap and introduces the Urban Markets Initiative program—an initiative to advance thought and practice in the field of urban information.

I. Introduction

Home Depot, the big-box home-improvement retailer, made national news when it opened its Mills Basin Brooklyn store in 2002.[1] This store was to serve as a test case for evaluating the profitability of small-format urban retail markets and proved to be an unexpected success.[2] Home Depot is now also opening a store in Manhattan, and counts seven urban stores within the city of Chicago. Their experience demonstrates what urban economic development professionals have known for some time: the market potential in urban neighborhoods is only beginning to be tapped. "We haven't been able to feel the bottom of the Chicago market yet," states a Home Depot spokesman.[3]

Better information about urban populations and unmet demand was a critical component in Home Depot's interest in urban locations. After their initial success in an urban location, Home Depot was persuaded to re-examine the demand forecast models they use for urban areas.

Recent interest in urban development opportunities suggests that new information sources and analytical tools are needed to reveal the potential scope and breadth of investment opportunities in urban, rather than non-urban places. Urban areas may be currently experiencing a shortage of investment and market activity because their investment potential is not well-captured by current information resources. In general, quality, reliable information for middle-class and wealthier populations primarily located outside urban and inner city areas has been easier to obtain than information about low-income communities.

Urban Markets Initiative

THE BROOKINGS INSTITUTION WASHINGTON, DC

URBAN MARKETS INITIATIVE

Addressing this information gap will improve the effectiveness of efforts to bring market activity to previously under-served urban communities and to illuminate new opportunities for investors.

The development of new information and analysis tools to understand opportunities in underserved urban and metropolitan markets has been a focused effort of such corporations as MetroEdge, a subsidiary of ShoreBank Advisory Services in Chicago, and the national not-for-profit initiative Social Compact. Both groups have pioneered the use of new datasets to create better information for understanding urban markets. For example, they have introduced the notion of daytime populations as a driver of consumer markets in downtown areas, championed the need for understanding urban lifestyles, and worked to develop models which can take into account the diverse nature of urban geographies.

Historically, urban areas have functioned as vital centers for commercial investment, innovation, and exchange within national and regional economies. The magnitude and density of people and activities in urban areas facilitates the development and exchange of information and products through easy face-to-face interactions, the development of mass media, the concentration of intellectual capital, and the construction of intricate transportation networks. Healthy communities and neighborhoods within these well-functioning urban areas typically have a vibrant investment climate, a robust labor market, and a wide array of neighborhood social and retail services.

"Information drives urban market investment decisions."

WHY INFORMATION MATTERS: A BASEBALL ANALOGY

For years, baseball scouts had relied on hunches and an idealized image of how a good baseball body should look, sprinkled with their best guesses about potential to build teams. "Moneyball," by Michael Lewis, is the story of the Oakland A's under the management of Billy Beame. He discarded conventional wisdom, used new information sources, tools, and analysis to develop new performance-based statistics, and uncover hidden, unrecognized baseball talents. In so doing, they built team after team that, on a fraction of the budget enjoyed by teams like the New York Yankees, won more games than any other team in their division, and made it into the playoffs. Nimble business competitors, they used better information to correct the highly imperfect market for baseball players, flying in the face of the preconceptions of thousands of baseball scouts, fans, players, and owners. Their methods—better, more complete information, solid analysis and, performance-driven statistics—are setting the baseball industry on its ear.

In the last several decades, urban neighborhoods have faced major economic and social changes with radically mixed results. Some are still grappling with the challenges of concentrated poverty and its attendant problems: few retail options, a lack of neighborhood jobs, scarce services, etc. Others are becoming immigrant Meccas and enjoying the associated benefits and challenges: new population growth, cultural diversification, and an increased demand for city services. Others still are home to a growing mix of single professionals and families from all income levels looking for 24-hour urban amenities. And the function of urban neighborhoods within a metropolitan economy varies depending on whether they are located in the hot markets of the South and West or slower growing areas in the Midwest. Despite these marked differences, investors' perceptions of urban neighborhoods is largely a stereotypical view of a declining urban core, with limited market potential and scarce investment opportunities.

The Urban Markets Initiative (UMI), an initiative of the Brookings Institution Metropolitan Policy Program, aims to address the issue of the urban information gap systematically, with funding from Living Cities.[4] This paper outlines a fundamental approach to under-

standing the role of information in describing investment opportunities. It also describes the nature of the urban information gap and its impact on investment decisions, suggests actions in three major areas to address this gap, and introduces the UMI program—an initiative to advance thought and practice in the field of urban information.

II. A Primer: The Use of Information in Urban Market Decisions

A market investment decision may be defined as an investment of current resources (usually cash, but also personnel, transportation or infrastructure improvements, or new social service programs) in projects which will provide more efficient market activity in the future. Information can spur investment in market activity by improving production, exchange, or consumption. It can encourage the creation of new products for low and middle income consumers, enable new methods of exchange, accelerate the rate of transactions, widen access for new and current market participants, and expose hidden assets. Like the analogies shown in the adjacent boxes, information can revolutionize markets, changing the relationships between suppliers, producers, consumers and competitors.

WHY INFORMATION MATTERS: AN INSURANCE INDUSTRY ANALOGY

Progressive Insurance, based in Cleveland, Ohio, views itself as an "information company in the insurance industry". For years, it used the power of sophisticated data-mining tools to extract a profitable business from marketing auto insurance to high-risk drivers that other insurance firms viewed as uninsurable. As they moved into more mainline product offerings, Progressive pioneered the use of the Internet as a way to allow consumers unparalleled power to comparison shop for insurance policies. In 2001, their website featured live data from competitors' pricing models, which allowed consumers to compare the price for a Progressive policy with others. With this tool alone, Progressive totally disrupted the market for insurance—from a sales engine powered by individual relationships between agents and their customers, to a market where the balance in negotiating power between the buyer and the seller was changed, and the buyer had far more information about alternative product offerings that might be of more value.

Financial institutions, government, and community-based organizations are important investors in urban markets, spurring affordable housing developments, funneling block grants to specific neighborhoods, investing in new programs responsive to the needs of new, immigrant populations, or encouraging business growth in a retail corridor. These market investment decisions lay the groundwork for economic progress and development, and are important components of a community's health and innovative capacity.

A wide range of investors (or "market actors") make investment decisions in urban markets, from private, for-profit enterprises to non-profit and governmental agencies, to individual consumers. Depending on the market actor, the market project may take the form of construction of a new manufacturing facility, opening of a new store, development of a new product, investment in the creation of a new commercial strip or affordable housing, or purchase of a new home. Such activity in urban areas may be termed "urban market activity" or "urban investments" and the investors "urban market actors."

Market actors employ a wide variety of formal and informal sources of information and information tools to make market investment decisions. Depending on the type of investment, questions need to be answered such as—where will we build it? What product lines

Sources of the Urban Information Gap

Urban Market Actor	Examples of Investment Decisions	Standard Information Sources	Potential Urban Information Gap
Banks	Personal and business loans, other financial services	Credit-scoring models Personal income reports Credit reports	• Credit scoring models do not include typical urban expenses, such as rent • Reported business or personal income may not reflect significant cash or barter transactions
Government	The siting of new schools and libraries; investments in transportation infrastructure	U.S. Decennial Census, local data on commuting trip patterns	• Misstate the balance between suburban and urban needs • Variable intercensal estimates of local population changes • Undercount at-risk populations
Commercial and Retail	New retail locations, commercial establishments	U.S. Decennial Census, drive-by inventories of existing stores, speed of zoning or permitting process	• Underestimate daytime commuting population, foot traffic, disposable income • Misestimate time for zoning or permitting decisions
Community-based Organizations	Develop new types of constituent services, workforce development programs, reinvestment strategies, etc.	U.S. Decennial Census, Home Mortgage Disclosure Act data	• Undercount immigrants, homeless populations • Unreliable intercensal estimates of local population changes
Chambers of Commerce, Economic Development Organizations	Industrial retention strategies, workforce training programs, etc	Census Employment data Dun and Bradstreet ESRI Business Analyst	• Understate personal income • No employment data for small areas • Accurate business establishment location data is not available
Consumers	Locate new housing alternatives, transportation, jobs, schools	Real Estate listings, transit schedules, job applications, online government services, school outcomes information	• Consumers may not have access to these listings or tools
Industry	Locate warehouse, new suppliers or customers	Real Estate listings, CBRE's Real Estate Index, Dun and Bradstreet, other industry datasources	• Inaccurate or incomplete real estate and parcel information

should we offer? How large should our investment be? Where will our inputs and employees come from? Where are our competitors? Where are our suppliers? Where are our customers? What is the potential for long-term success? Will the home value appreciate? To the extent that answers to these questions are found in information that accurately describes the asset base and investment potential of urban, as well as non-urban, areas, urban communities and residents have the opportunity to compete for new market activity on a level playing field.

When critical urban information is *not available, not accurate,* or *not used* by market actors an "information gap" exists and the opportunity for new market activities which will benefit urban residents may be foregone. The typology on the preceding page illustrates the range of market actors, their market actions, the information sources on which their market decisions rely, and the potential for an urban information gap.
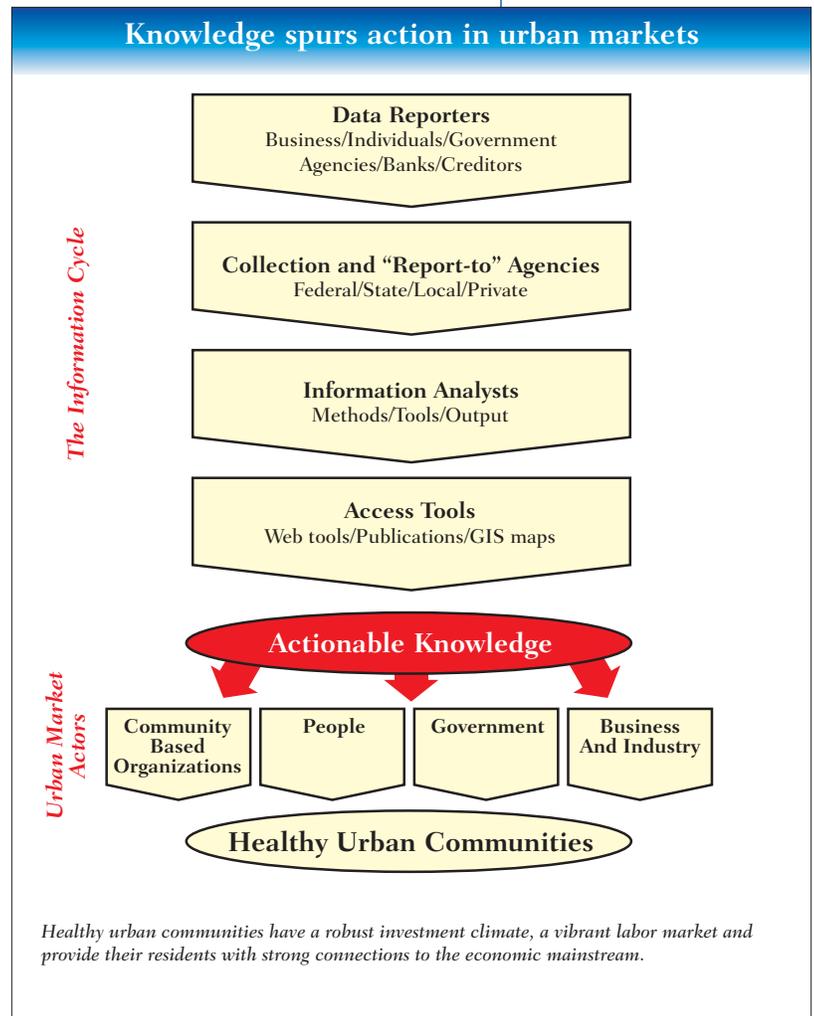
III. From A to Z: The Information Cycle Creates Actionable Knowledge

Thousands of decisions to invest or purchase are made in urban markets every day—by firms, retailers, consumers, government, workers, residents, and community-based organizations. These decisions may take the form of private site investments (locating a retail establishment or a new manufacturing facility), public infrastructure projects (street improvements, flood control facilities), product developments designed to meet the needs of urban consumers (Location Efficient Mortgages, integrated transit fare cards), government policy (support for particular industrial sectors), or consumer decisions (where to buy a house, choose a school, daycare provider or what kind of financial services to use).

Understanding the Information Cycle
The impact of information on market decisions can be understood through a discussion of the process, or cycle, by which data becomes information and information becomes knowledge available to market decision makers—beginning with reporting a simple transaction, to constructing and using a complex GIS-based dataset or decision-making model built upon consumer preferences. This is the "information cycle": the process of creating actionable knowledge from data.

A simple depiction of the process data takes to become information is presented to the right. First, beginning on the top, data are created and reported: by businesses, government, individuals, and not-for-profit organizations. When an individual makes a payment on a automobile loan, for example, data about that transaction are created (amount, date of payment, whether on time, to whom it was paid, whether the loan is now retired, etc.). These data are reported by the loan holder to a credit reporting agency, to a repossession firm, or to the state department of motor vehicle registration. In another example, a household creates data when it reports its charac-

Knowledge spurs action in urban markets

The Information Cycle

Data Reporters
Business/Individuals/Government
Agencies/Banks/Creditors

Collection and "Report-to" Agencies
Federal/State/Local/Private

Information Analysts
Methods/Tools/Output

Access Tools
Web tools/Publications/GIS maps

Actionable Knowledge

Urban Market Actors

| Community Based Organizations | People | Government | Business And Industry |

Healthy Urban Communities

Healthy urban communities have a robust investment climate, a vibrant labor market and provide their residents with strong connections to the economic mainstream.
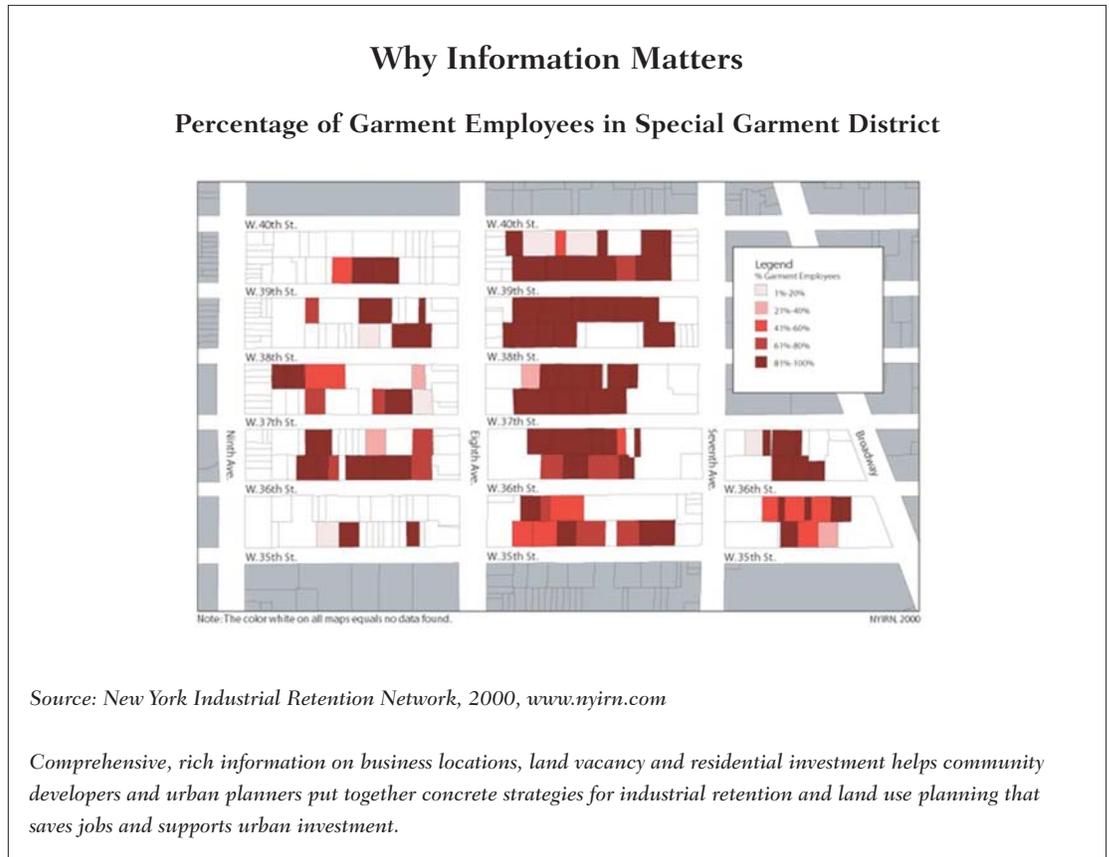
teristics on the questionnaire sent to it by the U.S. Census Bureau for the decennial Census of Population and Housing. Employment records are a third example. Employee social security number, dates of employment, hours and weeks of pay, pay rate, are all data elements reported by firms to state agencies in charge of unemployment security benefits.

At this early point, *what is an important piece of data* and *whether or not it should be reported* is decided. This is often subject to an individual agency's or business' short-term, limited reporting requirements. Sometimes, it is a decision made in a decidedly political arena. For example, until the early 1990s, multi-establishment firms were not required to break out their employment totals and report to state agencies where the employees worked, geographically. This made it difficult for economic and neighborhood development officials to fully understand aspects of their local economy: the location of sources of employment, potential linkages, and employment at separate geographic locations. Another example is the highly politicized process around selecting questions for the decennial Census. For Census 2000, Congress, highly concerned about privacy and federal intrusiveness, allowed only those questions required by law or necessary for the administration of federal programs.

In addition, the decision regarding "what" data will be reported and collected, and published through the information cycle is certainly not linear. As noted above, these decisions may be political, or limited to collecting information on just those elements necessary for a specific business or programmatic purpose. Thus, those actors at the "end" of the information cycle who are using the information to make market decisions may find themselves lacking particular data and ask or demand that other kinds of data be reported.

Next are shown the collection or "report to" agencies—those agencies and enterprises charged with recording, documenting, and saving data, and often with data dissemination. These can be government agencies (U.S. Census Bureau, state employment security offices, IRS, etc) or private enterprises (Dun & Bradstreet, Equifax, Harris, etc.), where

"When critical urban information is not available, not accurate, or not used an urban information gap exists."

Why Information Matters

Percentage of Garment Employees in Special Garment District

Note: The color white on all maps equals no data found.   NYIRN, 2000

Source: New York Industrial Retention Network, 2000, www.nyirn.com

Comprehensive, rich information on business locations, land vacancy and residential investment helps community developers and urban planners put together concrete strategies for industrial retention and land use planning that saves jobs and supports urban investment.

they are aggregated for public or private release. These agencies have tremendous power over the final information used for decision making in that they decide what data are collected and saved, in what format, and then have control over how and when the data are disseminated.

In the following analysis step, information is created from the data. Analysts use both publicly available and their own collected data and apply various methods and tools to turn data into *information*. By applying analysis techniques such as coding, summarizing, imputing, etc., raw data are turned into more usable information. The analysts include federal agencies such as the Bureau of Transportation, the Economic Research Service, and the Census Bureau; as well as private sector firms such as Claritas, ESRI, Brandow, and Cushman & Wakefield, etc. Techniques used for analysis vary from standard, public, widely-accepted procedures such as simple statistical descriptive analysis to sophisticated, proprietary economic models. The more proprietary and non-standard are the analysis techniques used, the more control the analyst has over the information "output" and knowledge created from the analysis. This analysis step is crucial in that it produces the information that market actors can use to inform their investment decisions—where to open a bank branch, locate a store, offer consumer credit, place a warehouse or develop a product.

Next, the analysts decide how to give access to the information they have created: to whom, through what media, how much of the information to give access to, how much to charge, etc. Cost and regulatory constraints inhibit the amount of information which can be released and under what conditions. Technology, especially web services and GIS tools, has enabled more information to flow faster and further, but it comes with added concerns about privacy and confidentiality. For example, the Census Bureau must adhere to strict confidentiality regulations when deciding how much data they can disseminate and in what form (electronic, print, web).

Finally, market actors make decisions about market investments based on this information—this is how information becomes *actionable knowledge*. Actionable knowledge is the most potent form of information, which spurs action by its user, usually a market actor. Market actors add their own impressions, prior knowledge, biases, and experience to the information they are given and decide whether and how to take an action in a particular market. While information plays a key role in "setting the stage" it is these intangible factors that often tilt the decision in one direction or another, taking the form of "gut instinct" or preferences. The entrepreneur relies on his or her own instinct to decide that the retail location just "seems" right; the city manager decides that an infrastructure investment is worth making in a speculative real estate venture; or a community program decides to offer a new service in a foreign language to meet the needs of its newest group of immigrants. It is only at the point when information is matched with intangible, internal preferences of the decision-maker that it becomes actionable knowledge. At this point, the journey is completed from raw data to a final decision—a plant location, a retail store location, a new product, a new customer service, a new method of delivering services to a previously underserved population or geographic location.

Each step in the information cycle is a critical part of the journey from raw data to the types of information sources on which decision-makers rely to make business and personal investment decisions. Biases or inaccuracies, such as incomplete datasets, imprecise methods of collection, biased aggregation tools, or inequitable access to information can be introduced at each step in the process. In addition, because each step in the information cycle is based upon the results of the previous phase, a minor imperfection in the way in which data are collected or reported, aggregated, or analyzed, could have a magnified effect on the knowledge, and ultimately, the action that is taken.[6]

The key issue is to understand what causes this urban information gap to occur, and how it might be filled. The following discussion and the agenda for action suggests ways in which some of these issues might be addressed.

"Actionable knowledge is the most potent form of information."

Why Information Matters

Source: http://lila.ucla.edu
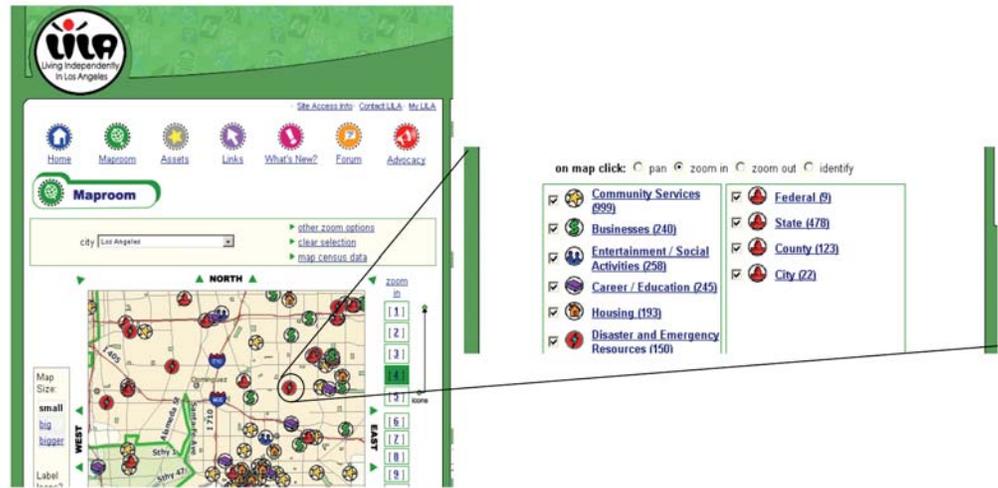
Individuals with significant disabilities participate in a lively online community and have created a mapping tool that promotes independence, productivity, and quality of life. LILA creates, for the first time, a county-level model for using electronic online technologies to reduce barriers to information for people with disabilities, as it brings empowerment and independent living services into the high-tech information age. The system allows each individual to add their own "expert" knowledge to a system that aggregates information about accessible places, services and programs.

IV. Barriers and Distortions to the Information Cycle for Urban Markets

Many data that would reveal the investment potential of urban locations are *not available* because they are not collected or not disseminated in a way which effectively captures urban characteristics. *Inaccuracies* in the way in which income and cost structures operate for low income individuals may limit the number and types of products developed for these groups. Knowledge may be *unused* inasmuch as some decision-makers may decide to use more impressionistic knowledge to make decisions than to rely on data that has been rigorously laid out. Information is also social and political in nature: some decision-makers may explicitly decide to ignore information presented. For example, when presented with evidence that his ward is eligible for Community Development Block Grant (CDBG) funding by a local agency, a local elected official may decide to ignore the information rather than have it be known that his ward is "blighted."

An analysis of the specific stages within the information cycle illuminates several reasons why knowledge on urban neighborhoods and residents may be unavailable, inaccurate, or unused.

First, at the "report" stage, economic activity in urban areas is more likely to be unreported and thus unmeasured than in non-urban areas. Retail stores are more likely to be smaller "mom and pop" shops, and not required to report their location or employment to unemployment insurance agencies which use agency records to track the health of local economies. Unreported cash transactions are a larger part of urban economies. Informal social network exchanges (e.g., barters and exchanges) take the place of direct market transactions using cash or credit, and thus are not captured in "normal" transaction reporting.

Why Information Matters
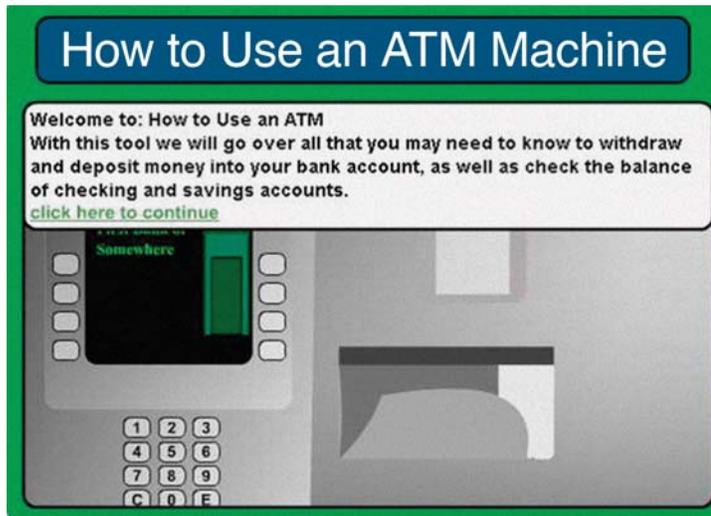
Source: www.Beehive.org, 2004

Innovative use of information tools and web technologies provide easy-to-use gateways for low income populations and new immigrants to learn about how to access healthcare, financial and community services in their neighborhoods. Resources like this can help to better integrate and connect urban residents and families to the economic mainstream.

In the second stage, the types of data typically collected are often not reflective of urban populations and lifestyles. For example, more people are renters in urban than suburban areas; however, credit reporting agencies do not collect rent payments as part of the data they use for credit scoring. Undercounts in what is perhaps the nation's most important data set, the Decennial Census of Population and Housing, are typically urban in nature: minorities, those living in non-household living arrangements, and children living in poverty. The income available for grocery purchases in many urban communities is augmented by state and federal food stamp supplements. Yet this additional income is rarely taken into account by grocery chains.

Third, information analysis can be blind to measuring diversity—analytical techniques make it much easier to measure the average than to measure diversity. Cities and urban areas are more likely to have multiple heterogeneous and distinct internal sub-populations. Measured in these areas, an average salary, or family type, or spending pattern, would reflect none of the real population's characteristics. High rates in one small neighborhood are lost when averaged with the low rates of another enclave classified as part of the same community. An example is a site location model used by many national retail chains in determining locations for new stores. These models are often based upon median characteristics of larger communities, and, for multiple reasons, use a geographic scale which ill-reflects the realities of American urban neighborhoods today: dense, heterogeneous, vibrant, full of contradictions, and potential.

Finally, access to information is not without cost. Inasmuch as urban residents tend to be less affluent than their suburban counterparts, they will command fewer resources with which to access information. Whether in electronic format or print, gathered by formal or informal means, accessing information requires resources. With the rapid adoption of e-government and e-business tools, government services, employment services (especially for entry-level jobs), and business services are using Internet-based tools for citizens, appli-

"Often, urban information ill-reflects the realities of neighborhoods today: dense, heterogeneous, vibrant, full of contradictions, and potential."

cants, and clients for routine transactions. As these tools are deployed more widely, the adoption, use, access to, and affordability of computing tools and broadband technologies will continue to be a barrier for low-income urban populations. Although urban areas are typically well-served by broadband connectivity and services, access to Internet services can be expensive and difficult to understand.

In addition, statutory, regulatory and resource barriers restrict access to much information that may be of use to urban investors. Data on small areas (e.g., below county-level geography) are not accessible due to confidentiality requirements, resource constraints on the volume of data that can be processed and made available, etc. As a result, the distinct characteristics of small areas are masked.

Lastly, information sources on urban neighborhoods are often unintelligible or not available to many decisionmakers. To respond to this need, an industry of knowledgeable data intermediaries, external consultants, and analysts fill the gap by accessing technical data, analyzing their meaning and helping investors in urban areas make decisions. Examples of these organizations are site location consultants, such as CB Richard Ellis and Ernst & Young. CB Richard Ellis, for example, publishes a "Market Index Brief" that provides data on local area's recent economic, vacancy, absorption, rental rate, and construction trends. Examples of community-based organizations working to overcome local data gaps can be found at the National Neighborhood Indicators Partnership, led by the Urban Institute, which has developed the practice and use of parcel-based data to spur local decision-making and strategic planning in 19 cities nationwide. As mentioned above, financial institutions, such as Shorebank Advisory Services' MetroEdge and the not-for-profit company Social Compact, have pioneered the development and use of new datasets to better and more accurately portray the robustness, activity, and size of urban neighborhood markets. In this way, external consultants, or knowledgeable data intermediaries, attempt to influence the way in which the decisions of their clients are made.

When information is unavailable, inaccurate or unused, this urban information gap may result in the undervaluing of assets of low-income people and neighborhoods. With urban market potential unrecognized and untapped, urban communities can be further isolated from streams of innovation, new capital sources, job opportunities, and the economic mainstream. Both urban consumer and investors miss out. For example:

- Retail site-location firms consistently undervalue the purchasing power and have trouble understanding the potential retail niches and level of demand for diverse urban neighborhoods

- Urban residents have fewer choices about where to spend their dollars and may spend more for groceries and other items than residents of better-retailed communities. The result may be fewer dollars to invest in assets such as home improvements, education, or health care.

- Community developers may struggle to understand opportunities for building assets in their local economies: employment prospects for community residents, inter-firm production networks, land availability, or retail opportunities.

- Employment-generating firms need to know more about the labor, real estate, and infrastructure assets of central city locations

- Mayors, community development corporations, and others miss opportunities to use federal investments in transportation infrastructure in a way which will connect local residents to the financial mainstream and strengthen family incomes

"The urban information gap undervalues the assets of low-income people and neighborhoods."

V. Turning Data Into Action to Build Healthy Neighborhoods

What are the information gaps that distort investment decisions against urban areas? Where might be intervention points in the information cycle that can reduce these gaps? To date, the production of information and its presence in the investment decision-making process has been largely unexplored. There is a critical need to more systematically address the pervasive effect of information on investment decisions in urban markets, and its impact on the creation, operation, and efficiency of urban markets. Focused work in four major areas would inform these questions:

- Improving accessibility, availability and usage of federal, state, and local information on urban markets

- Improving the use of information tools to spur local innovation

- Advocating for federal urban information policy

- Role of local data innovation, outreach, and constituency-building

Work in these areas will advance knowledge of the links between information and investment decisions, and help guide advocates for healthy urban communities in developing and applying transformative information tools to achieve more efficient outcomes in urban markets.

Why Information Matters

Source: http://www.trfund.com/policy/ntis.htm

Community-based investment funds can use detailed parcel-based data to identify neighborhoods where strategic investments can make a significant difference in their development. These information sources help to develop robust investment strategies to bridge the community capital gap.

> *"The federal government plays a key role in providing and generating information critical to urban markets."*

Improving Accessibility, Availability and Usage of Federal, State and Local Information on Urban Markets

This paper has outlined a number of reasons why information on urban areas is unavailable, inaccurate or unused. To better understand the implications of this gap for urban growth strategies, an initial area of focus needs to be a systematic review of the impact of these information gaps on key issues and tools by which urban areas are actively seeking to build wealth, but face daunting information barriers. For example, accurate data on the location of business establishments and their employees' characteristics are difficult to access and use, though this information is vital to civic leaders, developers and others formulating urban competitiveness and business development strategies. Another example is the availability of data on local utilization rates for the USDA Food Stamp program. This program can be a powerful wealth-building tool for low-income populations. But accurate local data on utilization rates and eligibility is difficult to access. UMI will be publishing a series of data briefs that will outline these problems, and proffer potential solutions.

To better understand the impact of this gap for effective market development in urban areas, more rigorous inquiry is needed into how investment decisions, generally and in specific markets, are driven by deficient information: incomplete, inaccurate, impressionistic, incorrectly modeled, etc. The relative importance of, and interplay between, formal information sources and impressionistic "gut perceptions" must be considered. The profile of these two factors in investment decisions will, of course, vary, based upon the type of decision-maker, and the nature of the investment decision being made.

UMI research and findings in this area will better inform urban policymakers, data collectors, providers, urban economic and community developers, and practitioners about the critical role of information in driving urban investment decisions and markets.

Improving Information Tools to Spur Market Innovation

To better understand the extent to which information flows have an impact on business investment decisionmaking, some practical experimentation needs to be seeded and analyzed to help to understand the dynamics of information and the way in which information makes markets work at the local level.

Investments in innovative experiments and pilot projects that spur efficiencies in urban markets will help to advance the theory and understanding of the role of information in powering urban markets. These experiments can reveal opportunities for creating new products for low and middle income consumers; developing new methods of exchange; accelerating the rate of transactions; widening access for new and current participants; and exposing hidden community and individual assets. Experimentation in this area must be designed to demonstrate an intervention in the information cycle that will spur demonstrable, measurable changes in the behavior of urban market actors.

These projects would also more clearly reveal the limits and opportunities of improvements in information reporting, collecting, analysis, and dissemination. That is, interventions in the information cycle may be a necessary but not sufficient condition to bring about changes in decisions on the part of market actors. Other factors that influence market behavior cannot be affected solely by information improvements—factors such as inertia, class or race bias, political pressure, prejudice, uncertainty, accepted group norms, etc. Experimentation in this field can reveal where these other factors come into play—in which markets, for which actors, and in which situations.

As any new product developer or community advocate knows, an innovation must have both the power to achieve its goals and the opportunity to be adopted by its target constituency. Only with both these ingredients will the project be successful, widely adopted, or encourage broad social and economic change.

By seeding investments in these types of tools, the role of information in investment decisions in urban markets can be observed. UMI will be making a series of strategic investments designed to illuminate these issues through innovative pilot projects in the next three years.

Advocating for Federal Information Policy

The federal government plays a fundamental role in providing and generating information critical to decisionmaking by urban market actors and investors. First, the federal government reports data on its own investments in urban places, people, and markets. These include direct investments, such as in transportation infrastructure, grants for research and development, monies for prisons, as well as income support and transfer programs, such as CDBGs, food stamps, and small business loan insurance. It thus reports data on its own activities as a direct market investor and as an administrator of public programs. Aggregated through the Consolidated Federal Funds Report (CFFR), the Federal Assistance Awards Data System (FAADS), Federal Procurement Data System (FPDS), Office of Personnel Management (OPM), U.S. Postal Service, and the Federal Aid to States Report (FAS), the federal government releases data that reveal the flow of federal spending to individuals, firms, organizations, states and local units of governments. the federal government releases data that reveal the flow of federal spending to individuals, firms, organizations, states and local units of governments.[7] Despite the multitude of reports available on federal investments and programs, there is no easily accessible dataset which summarizes the federal investment in urban people and places. Little is known about the patterns and impact of federal spending in urban areas. Clearly, for community leaders to make good decisions on capital allocation, transportation, services or products, they need a comprehensive, accurate picture of the demographic and geographic distribution of federal investments in their communities.

Second, the federal government collects the vast majority of data used to ultimately drive market decisions and adds value to these data at every point in the information cycle. It collects questionnaire data from demographic surveys such as the Decennial Census, the Survey of Income and Program Participation, the Current Population Survey, and Surveys of Current Businesses; as well as gathering data from mandatory administrative records taken from business, taxpayers, and local governments (e.g., Social Security records, national crime statistics, and Home Mortgage Disclosure Act (HMDA) data).

"Little is known about the patterns and impact of federal spending in urban areas."

Why Information Matters

http://www.tbf.org/indicators/

Community-based organizations have used information tools to aggregate and disseminate regional performance on a wide variety of indicators of social and economic progress. These efforts are important ways for civic leadership to build consensus around long-term strategic imperatives and action plans that require broad public input and support to be successful.

These data are the backbone of a multi-million dollar industry that creates information to drive both public sector and private sector investment. For example, indices of economic performance drive stock market investment; population estimates influence the location of new homebuilding activity; and HMDA data partially determine bank accreditation scores. The federal government produces information to answer investment questions such as: "Would there be an available labor force if I located my business in XYZ county?"; "Are those persons who need income support actually getting it?"; "Where should I deploy my police force?"; and "Would there be consumer demand for my product if I opened a store nearby?"[8]

Finally, the federal government adds additional value along the information cycle by implicitly or explicitly setting standards for data display and dissemination as it develops new ways to access its own data through websites, hard copy dissemination, and electronic files. It also attempts to explicitly set standards through initiatives such as the National Spatial Data Infrastructure Geospatial One-Stop and efforts spearheaded by the Statistical Policy Office of the Office of Management and Budget.

Continued collection of and access to both kinds of federal data—those that reveal federal investments as a market actor, and those it collects in its role as a data producer—powers innumerable private and public sector decisions on investments. For this reason, the currency, transparency, and usability of these data, as well as their continued improvement and viability, are crucial to addressing the challenge of the Urban Markets Initiative: using better information to move neighborhood markets, identify inner-city business opportunities, promote business development, and thriving urban markets.[9]
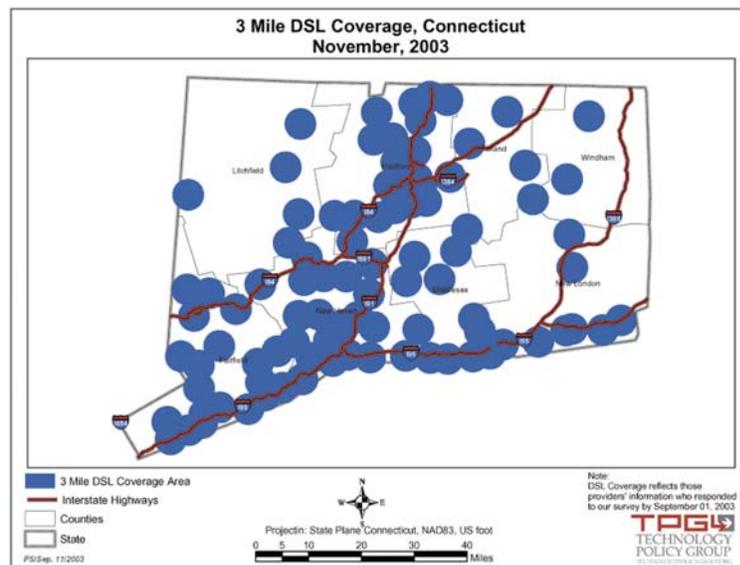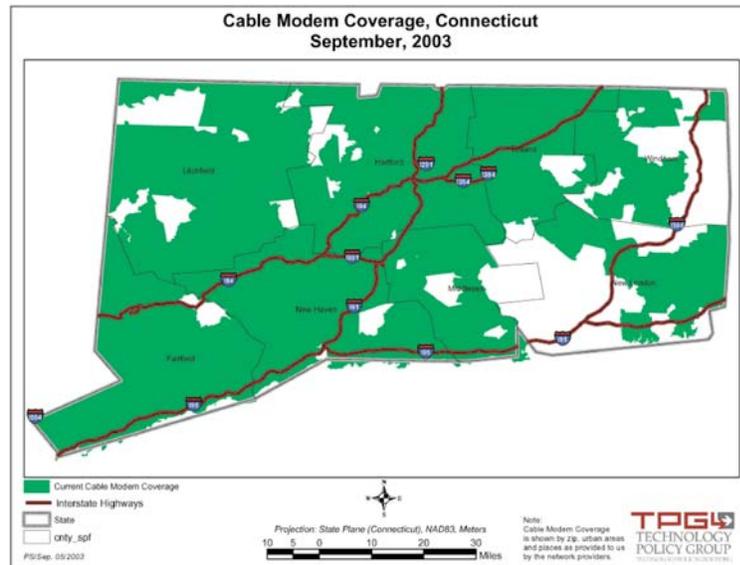
The Critical Role of Local Data Innovation, Outreach and Constituency-building
As in most fields, the most exciting innovations in information for urban markets are occurring at the local level. Although nascent, partnerships are springing up in major cities nationwide to develop and assemble local sources of data, and pair them with federal data on housing, census and employment to help local urban leaders better grapple with fundamental structural and demographic changes in their local economies. GIS mapping tools have significantly eased the burden for local enterprises that need to turn raw data into actionable knowledge that will catalyze effective community change. For these tools to be even more effective, new sources of federal and local data must be opened up for public access and made easy to use for business decision-makers, local community organizers, and planners.

Despite this recent and exciting progress, many challenges remain for the field. Local leaders concerned with urban issues must begin to cross "silos" of interest—rarely are information sources on affordable housing, healthcare outcomes, criminal justice statistics, business location and employment, or consumer demographics joined to develop well-balanced growth and development policies. And the technology must also be developed aggressively—"next generation tools" must be built. New decision support systems that can be adopted and used in multiple cities can provide community leadership the ability to make investment and capital allocation decisions while accessing real-time data on land use and development. Middleware can perform complex integration tasks, implement statistical analysis, and automate data collection. These tools will help to offset the costs of ambitious, labor-intensive local efforts, and will bring the field to a new level of breadth, performance and effectiveness. UMI will continue to support these efforts at both the federal and local levels.

It is clear that the vitality and health of federal, state, local, and private sector data collection efforts are, in part, dependent on an active and engaged user community that is aware of the clear limitations, as well as the potential, of better information to improve outcomes and market performance in urban neighborhoods across the nation. UMI will be working at a number of levels to enhance focus and communication among those interested in the impact of information on urban markets.

Why Information Matters

Cable Modem Coverage, Connecticut
September, 2003

3 Mile DSL Coverage, Connecticut
November, 2003

Source: Technology Policy Group (www.technologypolicygroup.org), 2003

Finding ways to collect and display detailed information on the hidden assets of urban areas can provide the basis for aggressive technology-based economic development strategies. Here, the Connecticut Office for Workforce Competitiveness used data from telecommunications providers on broadband technology buildout to capitalize on the fact that 97% of Connecticut's citizens and businesses have access to some type of broadband technology throughout the state's urban and suburban areas. They are using this analysis to spur economic growth in information technology and software jobs, particularly those firms servicing the state's manufacturing base.

Conclusion

Information is at the core of creating markets and generating wealth. It drives investment decisions on business location and private and public investment. And it structures the debate over issues as diverse as welfare reform and homeland security policy. This paper has outlined some of the fundamental issues around barriers to progress in urban development because of imperfections and biases in the generation, collection, aggregation, and use of information.

For America's metropolitan economies, the challenge is to understand how to harness information to spur market development in neighborhoods, cities and metropolitan areas benefiting urban businesses, government, community-based organizations and better connecting residents to the economic mainstream—all critical components in building a community's health and innovative capacity.

The Urban Markets Initiative is committed to meeting this challenge, developing new ways to bridge the urban information gap, and catalyzing a new dynamism in U.S. urban markets. By focusing urban thought and practice on areas where information is a critical barrier to positive urban investment decisions, the Urban Markets Initiative can help to propel U.S. cities, their residents, and businesses to a new level of productivity, vibrancy, and wealth.

The Urban Markets Initiative welcomes all contributions to this new and emerging field of thought and practice. We have developed a variety of ways you can get involved in our program and learn more about information and its impact on your urban neighborhood. Log onto our website at **www.brookings.edu/metro/UMI.htm**.

Endnotes

1. Lorrie Grant, "Home Depot Courts City Dwellers." *USA Today,* March 28, 2002.

2. The Brooklyn store has 61,000 square feet, compared with as much as 160,000 square feet for a traditional Home Depot.

3. "Home Depot to Build Another South Side Store," *Chicago Sun-Times,* February 19, 2004.

4. Living Cities is the founding funder for the Urban Markets Initiative (**www.livingcities.org**). Living Cities is a partnership of leading foundations, financial institutions, nonprofit organizations, and the federal government committed to improving the vitality of cities and urban communities. The authors gratefully acknowledge their foresight in providing early encouragement and support to the pioneers in this field—Bruce Katz, Scott Bernstein, and Robert Weissbourd—and the resources to continue this exploration.

5. Amy Helling and David Sawicki, "Race and Residential Accessibility to Shopping and Services," *Housing Policy Debate* 14 (1 and 2) (2003): 69–101. This study systematically explores the impact of different market barriers to explain the low level of access to retail and shopping opportunities in inner city, minority neighborhoods.

6. This is an open question. These errors, taken together, could be offsetting and just as well have no impact on the way decisions are made.

7. Available at **www.census.gov/govs/www/cffr.html**; (**www.census.gov/govs/www/faads.html**); www.fpdc.gov; and **www.census.gov/prod/2003pubs/fas02.pdf**.

8. Robert H. McGuckin, "What Role for the Private Sector in Public Statistics"; papers presented at the Census History Forum, March 3–6, 2004.

9. Lynn Elaine Browne, "Perspective on Public and Private Economic Data Collection & Analysis", paper presented at the Census History Forum, March 3–6, 2004.

10. Michael Lewis, *Moneyball: The Art of Winning an Unfair Game* (New York: W.W. Norton, 2003).

References and further reading on information and urban markets:

Brin, David. 1999. *The Transparent Society.* Reading, MA: Perseus Books.

Brynjolfsson, Erik and Brian Kahin, eds. 2000. *Understanding the Digital Economy: Data, Tools and Research.* Cambridge: MIT Press.

Brown, John Seely and Paul Duguid. 2002. *The Social Life of Information.* Cambridge: Harvard Business School Press.

Castells, Manuel and Peter Hall. 1994. *Technopoles of the World.* New York and London: Routledge.

Coulton, Claudia, Lisa Nelson, and Peter Tatian. 1997. "Catalog of Administrative Data Sources." National Neighborhood Indicators Partnership, (**http://www.urban.org/nnip/pdf/catalog.pdf**).

DeSoto, Hernando. 2000. *The Mystery of Capital.* New York: Basic Books.

Foray, Dominique. 2004. *The Economics of Knowledge.* Cambridge: MIT Press.

Hayek, F. A. 1945, "The Use of Knowledge in Society", *American Economic Review.* September: 519–530.

Horan, Thomas A. 2000. *Digital Places: Building Our City of Bits.* Washington: Urban Land Institute.

Kingsley, G. Thomas. 2002. "Information and Impact: The Transformative Potential of Information in Revitalizing America's Distressed Communities." Working Paper for NCDI Technology Summit, November 13–15 (available from **www.livingcities.org**)

Kotkin, Joel. 2000. *The New Geography: How the Digital Revolution is Reshaping the American Landscape,* New York: Random House.

Lewis, Michael. 2003. *Moneyball: The Art of Winning an Unfair Game.* New York: W.W. Norton.

Persky, Joseph and Haydar Kurban. 2001. "Do Federal Funds Better Support Cities or Suburbs? A Spatial Analysis of Federal Spending In the Chicago Metropolis." Washington: Brookings.

Reamer, Andrew. 1999. *Socioeconomic Data for Economic Development: An Assessment* (with Joseph Cortright, for U.S. Economic Development Administration). **http://www.eda.gov/PDF/1g3_2_edarept.pdf**

Saxenian, Annalee. 1994. *Regional Advantage.* Cambridge: Harvard University Press.

Stiglitz, Joseph E. 2001. "Information and the Change in the Paradigm in Economics", Nobel Prize Lecture. (**http://www-1.gsb.columbia.edu/faculty/jstiglitz/download/NobelLecture.pdf**).

Stigler, George, 1968. "The Economics of Information." *In The Organization of Industry.* Chicago: University of Chicago Press.

Weissbourd, Robert. 1999. "The Market Potential of Inner-City Neighborhoods: Filling the Information Gap." Washington: Brookings.

Weissbourd, Robert and Ricardo Bodini. 2004. "Using Information Resources to Drive Market-Based Community Economic Development." (Forthcoming).

About the Authors

Pari Sabety directs the Urban Markets Initiative for the Brookings Metropolitan Policy Program. Virginia Carlson is associate professor, Department of Urban Planning, University of Wisconsin-Milwaukee. She helped prepare this paper while serving as deputy director for data policy at the Urban Markets Initiative.

For More Information

Pari Sabety
Director, Urban Markets Initiative
Brookings Institution Metropolitan Policy Program
(202) 797-4397
psabety@brookings.edu
www.brookings.edu/metro/UMI.htm

Virginia Carlson
Department of Urban Planning
University of Wisconsin-Milwaukee
(414) 229.5323
vcarlson@uwm.edu