

Leveraging Private Industry Intellectual Property Assets

A New Strategy for Regional Technology-Led Economic Development

Five Ways for Communities to Shape Their Broadband Futures

Creating the Infrastructure to Participate in the Global Economy

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Seattle Area's Support of the Emerging Technology Cluster of Video Games

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Robin Roberts Krieger, FM
IEDC Chair

dear colleague

As we all know, the U.S. has entered an era of high energy prices, and the consequences are complicated and far-reaching. It is transforming workforce commuting patterns and access to workers, business location priorities from lower cost locations to denser locations closer to markets and distribution channels, and where and how people play and consume. In our efforts to inform and gather information on the impact of rising energy prices, IEDC is offering an important new Web seminar on October 2, "The Future of Economic Development at \$5 a Gallon." Please join us to discuss what communities can do to adjust and prosper in this new era.

I am looking forward to this year's Annual Conference, which focuses on the growing world population. Preparing for such accelerated growth requires a fresh approach to economic development, provision of infrastructure, environmental sustainability, and workforce development. Atlanta provides a great background for the conference theme, "The Next Billion: Mobility, Flexibility, Agility, Livability." We are expecting over 1,500 economic development professionals from across the United States and around the world to gather on October 19-22.

Peggy McCormick, president of the Atlanta Development Authority, and Maria Mullins, executive director of The DeKalb County Office of Economic Development, have been outstanding and I would like to thank them for their leadership as co-chairs for the Atlanta, Georgia, Host Committee. Additionally, thank you to the entire Atlanta, Georgia, Host Committee for its support and enthusiasm for hosting this year's event.

The 2008 Annual Conference will showcase many new speakers, leading trends, and networking opportunities. I highly encourage you to arrive early to take advantage of the Town Hall Forums for urban, suburban, and rural communities. These interactive sessions will address issues directly related to communities' geography. Also, on Sunday morning the International Committee will be showcasing international best practices in FDI. For our colleagues who have been attending IEDC conferences for many years, we have a series of sessions entitled "On the Cutting Edge," discussing the latest trends in economic development that are new to the Annual Conference.

It is important to note that there is more to the Annual Conference than sessions. While at the conference, venture into the exhibit hall and learn from different vendors about the services available to your community. New to this year's conference in the exhibit hall is the Learning Lab, which will showcase award winning best practices and community resources.

I hope you will join me at two networking receptions – Sunday night's Chairman's Reception and Tuesday night's International Cross Border Connection Event – the conference's signature international business networking reception. I look forward to seeing all of you in Atlanta at the world's largest gathering of economic developers. Atlanta is truly the ideal location for the IEDC Annual Conference – stimulating new ideas and discovery in a unique and burgeoning city.

Robin Roberts Krieger, FM
IEDC Chair

THE IEDC Economic Development Journal

TABLE OF CONTENTS



PAGE 13

Leveraging Private Industry Intellectual Property Assets5 *A New Strategy for Regional Technology-Led Economic Development*

by Matthew Wagner

The Center for Advanced Technology and Innovation in Southeastern Wisconsin has developed a unique, technology-led economic development strategy that leverages late-stage, applied research from private industry as a tool for regional entrepreneurial and small business expansion.

Five Ways for Communities to Shape Their Broadband Futures13

Creating the Infrastructure to Participate in the Global Economy

by Robert Bell

This article identifies the issues that have driven local governments to become involved in bringing broadband to their constituents, and outlines five strategies that communities have successfully taken to create the broadband infrastructure they need to participate in the global economy.



PAGE 20

Fostering the Business of Games20 *Seattle Area's Support of the Emerging Technology Cluster of Video Games*

by Kristina Erickson Hudson

The Washington Interactive Media Program began with one staff person and zero dollars. Driving this economic development program are strategies based on partnerships which give a laser beam focus on what is needed to achieve results with limited funding.



PAGE 27

A Green Paradigm27 *Sustainable Economic Development Practices*

by Kaizer Rangwala, CEcD, AICP

The green and sustainable focus is increasingly becoming evident in a number of core economic development initiatives. This article explores how a green economy can produce new jobs, sustain a high quality of life, and grow our small business base.

A Unique Partnership Protects Defense Economy & Ecosystems36 *The Northwest Florida Greenway*

by Kay Rasmussen

With the growing needs of our population and our national security, the Northwest Florida Greenway is providing a very valuable and mutually beneficial answer to preventing encroachment.

Social Capital42 *A Local Development Tool*

by John P. Blair and Michael C. Carroll

The ability to use social capital is an increasingly important element in the local developer's tool kit.

IEDC News34

IEDC Calendar of Events35



INTERNATIONAL
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INDUSTRY INTELLECTUAL PROPERTY ASSETS

By Matthew Wagner

INTRODUCTION

With a changing global marketplace in which U.S. manufacturing is shifting unskilled labor production off-shore, communities across the United States are searching for that next big economic shift. First it was the Internet, which created incredible growth in areas such as San Francisco, Portland, Seattle, Boston, and Austin. During and since this time, a more technology-based economic development strategy arose with a focus on regions, such as the Boston 128 corridor, Silicon Valley, and the Research Triangle. Today, it is hard to find a region of the country that hasn't launched some sort of biotech/life sciences initiative.

The focus for much of this transformation is America's academic institutions. Fueled by the 1980 passage of the Bayh-Dole Act, which allowed universities to license patented technologies funded by federal research dollars, academic institutions across the country find themselves as a centerpiece for regional economic development by spawning the knowledge worker needed by modern industry, entrepreneurs to fuel the technology boom, and research made available to the public through growing technology transfer operations.

While the likes of Thomas Friedman contend the "world is flat," many regions may argue, like Richard Florida, the world is actually spiky



CATI's offices in Sturtevant, WI, represent a one-stop shop for economic development, education and training, technology transfer, and business incubation services.

and development still rather uneven at best. Communities and regions undeniably have had barriers lowered as far as communication and technology access. However, it is apparent not all regions of the country have enjoyed the employment, tax base, and new business growth promised by the New Economy.

In examining leading communities one is struck by a commonality not based on traditional economic development factors such as utility costs, access to natural resources/materials, or property

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A NEW STRATEGY FOR REGIONAL TECHNOLOGY-LED ECONOMIC DEVELOPMENT

Technology-led economic development has tended to focus on methods and best practices for commercializing university-based research. However, like spatial and skills mismatch, regions can also have a technology mismatch. Southeastern Wisconsin is just one of the many U.S. regions with a mature manufacturing base ill-prepared to develop early stage, basic research. As a response, the Center for Advanced Technology and Innovation (CATI) developed a unique technology-led economic development strategy that leverages late-stage, applied research from private industry as a tool for regional entrepreneurial and small business expansion. While nearly 70 percent of U.S. applied research is conducted within private industry, the vast majority of the resulting patented technologies remain on the shelves as a source of untapped innovation. CATI's comprehensive methodology focuses on acquiring these underutilized technologies and matching those with the strategic industry clusters and needs of entrepreneurs and existing firms within the regional economy.

taxes. Instead, economic development now requires a new fuel for growth, defined by sources of innovation. A common characteristic seems to be the ability for that community or region to create internal economic development through innovation drivers, such as a large company with growing R&D intensity, a cluster of like-type R&D driven-industries, or a major university that serves as a pipeline for economic growth through federally-funded research and development.

Faced with the changing nature of economic development, what do regions do to compete in this new global marketplace where U.S. competitiveness is based on value-added production and services? In order for regions to be competitive, they must move beyond simply following the latest economic development fad, rather there has to be a strategic focus and executable plan based on a region's core competitive strengths matched with potential sources of innovation. The critical point is those sources of innovation must be matched with the region's economic infrastructure in order to drive new business development and existing business growth.

As identified earlier, the majority of communities have turned their focus to universities as that source. However, like spatial and skills mismatch, regions can also have a technology mismatch. Technology mismatch can be evaluated on several levels such as the stage of technology and resources required to successfully transfer the technology, including know-how talent and capital. One solution to this mismatch is to move beyond simply focusing on the university as the only technology transfer model for regional economic development. A complementary approach is a technology-based economic development model designed to leverage under-utilized or off-strategy private industry intellectual property assets as a source of innovation for more mature industrial-based regions. According to U.S. Patent and Trademark Office statistics, academic institutions along with U.S. federal labs account for less than 5 percent of annual granted patents. U.S. corporations represent more than 40 percent of all granted patents. However, economic development has tended to solely focus on university patenting activity as a gauge and source of innovation for economic growth. In other words, we're missing a large part of the innovation market.

BACKGROUND - SOUTHEASTERN WISCONSIN: IN SEARCH OF INNOVATION

Due to the national transformation from a manufacturing based economy to service economy, a burgeoning global labor marketplace, and an aggressive move to automated systems of manufacturing, Southeastern Wisconsin has seen its fair share of job losses and plant closures. Racine County is centered in the heart of the Milwaukee-Chicago region and serves as a microcosm for the impacts of the region's deindustrialization. It is estimated that Racine County, for example, has lost 3,000 manufacturing jobs since 1999. During the 2001 through 2003 time period, a total of 15 companies

announced significant layoffs or closings affecting 2,000 jobs.

Labor force data compiled by the Wisconsin Department of Workforce Development from data provided by the U.S. Bureau of Labor Statistics shows that the average unemployment rate in Racine County for the most recent 24-month period ending on June 2007 was 6.0 percent. A significant concern lies in the City of Racine, with an unemployment rate of 9.3 percent. The data also reveals the level of economic significance from manufacturing, which despite losses, still maintains nearly 38 percent of the total county payroll. (See Table 1.)

TABLE 1. Racine County 2007 Average Labor Force

	Racine County	City of Racine	Balance of County
Total Labor Force	99,366	37,952	61,414
Employed	93,442	34,437	59,005
Unemployed	5,924	3,515	2,409
Unemployment Rate	6.0%	9.3%	3.9%
Source: WI DWD			
2007 Manufacturing Employment Data			
2007 Average employment in Manufacturing: 17,975			
Number of Manufacturing Companies 2007: 248			
Total Payroll: 3,093,886,560			
Manufacturing Payroll: 1,173,844,204			
37.9%			
Source: WI DWD, Bureau of Workforce Training, Quarterly Census Employment and Wages, June 2008			

In order to address the challenges faced by local entrepreneurs and existing companies, the Center for Advanced Technology and Innovation (CATI), Inc. was launched in 2001 as a non-profit technology-led economic development organization by a partnership of academic, workforce development, and economic development agencies. Located in the heart of the Midwest manufacturing belt, strategically between Chicago and Milwaukee, CATI's challenge is to be a source of innovation for entrepreneurs, companies, and students seeking new product development and/or market opportunities designed to be more value-added.

In evaluating the region's strengths, a key recognition by CATI was the fact that traditional forms of technology transfer, as defined by basic research from a university being spun-out via licensing to produce a product, was not prevalent in the region. Wisconsin's flagship academic institution, the University of Wisconsin-Madison, represented a major powerhouse in federal research and development expenditures, typically cited as one of the top federally funded research universities in the United States with nearly \$800 million in federal research dollars. Table 2 represents the total R&D expenditures at universities in close proximity to the

TABLE 2. Level of Federal Research and Development Dollars for Wisconsin Academic Institutions (1996-2003)

FEDERAL R&D FUNDS (\$ '000)								
Ranking and Institution	1996	1997	1998	1999	2000	2001	2002	2003
4 U. WI Madison	412,570	419,810	443,695	499,688	554,361	604,143	662,101	721,248
112 Medical College of WI	47,365	51,629	56,021	61,446	70,581	83,857	96,700	108,608
195 U. WI Milwaukee	19,679	19,995	20,807	21,325	20,010	23,492	24,933	27,259
262 Marquette U.	5,946	5,855	6,763	6,469	7,653	7,236	9,807	11,385
372 Milwaukee School of Eng.	1,335	1,518	1,704	1,776	2,020	2,117	2,499	2,448
396 U. WI Stevens Point	1,649	1,324	1,112	1,302	1,227	1,827	1,849	1,980
422 U. WI La Crosse	1,310	1,045	1,185	1,113	1,404	1,563	1,939	1,483
427 U. WI Stout	1,523	1,306	1,386	976	1,236	1,070	1,358	1,437
452 U. WI Eau Claire	386	479	613	604	684	514	839	1,131
454 U. WI Green Bay	590	533	491	478	543	602	900	1,122
459 U. WI Superior	951	494	383	505	380	404	889	1,057
474 U. WI Oshkosh	396	574	636	603	585	670	662	942
518 U. WI Parkside	338	339	187	158	362	575	769	559
554 U. WI River Falls	146	262	242	231	152	288	332	331
578 U. WI Whitewater	356	395	282	148	272	260	236	224

Source: National Science Foundation

Racine County area. Unfortunately there is very little evidence to suggest this has translated into a resource for Racine County industries or as a stimulus for new company formation.

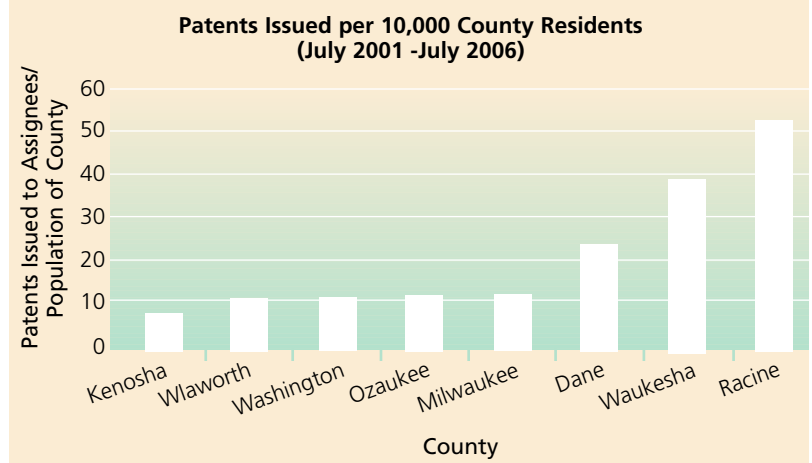
There are several potential reasons for the shortcomings of university technology transfer efforts in an area such as Racine County. A key to this may be the infrastructure of the local economy, based more in areas of manufacturing, resulting in a “technology mismatch” with university based research strengths in Wisconsin. For example, according to a Wisconsin report, UW-Madison’s research concentrations by subfields include strengths in Life Sciences, Physical Sciences and Environmental Sciences, but weaknesses in Engineering and Math and Computer Sciences, areas which would be better matches for the Racine County industry clusters.

Additionally, the reason may be a simple test of spatial considerations. A number of researchers suggest firms are much more likely to interact with sources of public research and development that are relatively close by. Racine County is approximately 100 miles away from UW-Madison.

The key is that university research is tacit, including its ability to be applied and how to manage a relationship with the university, so proximity is important to this sort of transaction. This is an important issue relative to regions of the country where small companies without comprehensive R&D activities are prevalent and the distance to a leading research firm is quite far.

However, we should not conclude that the area does not have a concentration in R&D. From 1990 to 1999, according to the U.S. Patent and Trademark Office, 599 patents were issued to Racine County companies, suggesting a strength more in line with applied research. In fact, Table 3 highlights that of the seven counties making up the Milwaukee metropolitan region, Racine County has the highest rate of patents issued per 10,000 capita. Dane County was added for comparison as the political jurisdiction location for the University of Wisconsin-Madison campus.

TABLE 3. Patents Issued in Milwaukee Metropolitan Counties (2001-2006)



Source: U.S. Patent and Trademark Office

Recognizing this key statistic and a fundamental knowledge of the Racine County economic infrastructure, CATI embarked on the creation of a holistic approach to technology transfer, teaming with local academic and economic development organizations. The goal was to design a methodology for transferring underutilized or off-strategy technologies from private industry to existing firms in Racine County or as a mechanism for spawning new ventures within the region.

The U.S. is a global leader in innovation and patenting activity through its locally-based corporations. However, anecdotally, most of those companies only utilize or maintain for defensive purposes approximately 60 percent of their in-house intellectual property. Of the underutilized or “orphan” patents remaining, there is typically 10 percent that have some economic merit either within that particular industry, or as a platform technology to be applied to multiple industry targets.

“Orphan” technologies, particularly from large companies, are a major source of licensed or purchased technology. Many companies develop technologies they never use or commercialize. Some firms recognize the inherent value of these innovative technologies and choose to license or sell them to benefit financially without having to commercialize them in-house. For example, IBM licensed its unused patents in 1990 and saw its royalty revenue jump from \$30 million a year to more than \$1 billion in 1999.

In 1999, U.S. businesses received one patent for every \$2.7 million in industrial R&D (total expenditures, \$180 billion); universities received one patent for every \$8.5-\$9.5 million in industrial R&D (\$28-32 billion); and the federal government had one patent for expenditures in the range of \$22-24 million in federally-performed R&D (\$22-\$24 billion). In terms of pure scale, consider this, in a typical year the number of patents granted to IBM will almost equal that to the number granted to all U.S. universities combined.

The key is understanding some of the fundamental differences between academic research and private industry R&D as it relates to regional economic development. Of the three phases of R&D activity (basic research, applied research, and development), industry dominates the latter two, the ones that most directly lead to patents. Industry provides over two-thirds of this country’s applied R&D expenditures and 89 percent of development expenditures, and spends 92 percent of its R&D funds on applied research and development. Unlike universities, private firms are intimately involved in the market for their products and can make good commercial judgments in areas of product or process development.

According to the National Science Foundation, **basic research** is directed toward increases in knowledge or understanding of the fundamental aspects of phenomena and of observable facts without the specific application toward processes or products in mind; **applied research** is directed toward gaining knowledge or understanding deemed useful in meeting a recognized and specific need; and **development** is the systematic



Assisting small and mid-sized manufacturers with top line growth through new product development is a critical element to CATI's technology transfer mission.

use of the knowledge or understanding gained from research directed toward the production of useful materials, devices, systems or methods, including design and development of prototypes and processes. More detailed definitions are available at <http://www.nsf.gov/sbe/srs/nsf99335/appa.htm#define>.

The other critical difference is in time to market as defined through commercialization. Typically, commercialization is a costly, lengthy process with a highly uncertain outcome. The costs of commercialization can run from between 10 and 100 times the costs of development and demonstration of a new technology. Moreover, success is rare – less than five percent of new technologies are successfully commercialized. Even when successful, technology commercialization does not happen quickly. On average, the commercialization of university research takes more than six years. Commercialization of radically new technologies can take well over a decade. Most small companies in mature markets can ill-afford to take that period of time to launch a product.

While much attention is paid to successful innovation in high-technology industries, such as biotechnology and software, market opportunities for innovative technology-based products exist throughout all goods-producing industries, such as carpets and automotive parts, for instance. In fact in 2001, less than 50 percent of the patents granted were for technologies in high-technology industries.

CATI'S TECHNOLOGY TRANSFER MODEL – THE SUPPLY SIDE

CATI's comprehensive technology transfer model was a direct response to this embedded need to provide sources of innovation for entrepreneurship and existing firms' new product development strategy. The model itself includes two programs designed to approach tech-

nology transfer from both the “supply” and “demand” side. InovaTECH™ is designed to create a “supply” of late-state, applied technologies from the private sector, which can be linked to existing firms and entrepreneurs in order to stimulate regional economic growth. The program is directly linked to the county’s economic development strategy and cluster analysis, and thus attempts to secure patented technologies that enhance that strategy and act as a tool for stimulating growth within the emerging industry clusters.

CATI’s first approach with inovaTECH™ was to leverage “orphaned” patents from private industry via donation. Patent donations were initiated in the United States during the 1990s as a patent portfolio management and mining technique, led by large patent holding companies such as Dupont, Dow Chemical, P&G, and Boeing. From 2003 to 2005, CATI acquired nearly 40 patented technologies, valued at \$36 million from companies such as Kraft Foods, S.C. Johnson, Boeing, and International Specialty Products. The result was four new Racine County companies launched from licensed property, as well as nine successful licensing agreements with existing local companies such as Alliance Enterprises for a new healthy milk ingredient called Benelact, and global firms such as Bayer CropSciences in the Research Triangle for more environmentally-friendly pesticide applications.

However, in late 2005 Congress passed the Jobs Bill which included a provision strongly supported by the Internal Revenue Service, which for all intents and purposes removed patent donations as a viable intellectual property management alternative for U.S. businesses. With a fairly cumbersome new valuation approach based more on long-term royalty return, CATI decided to utilize a new approach based on creating joint venture opportunities. A variety of hybrids to this approach have emerged, including one in which CATI receives

more of a “finders fee” with a portion of the royalties coming to the organization for completed licensing transactions, and a more CATI-driven joint venture model by which CATI receives a no-fee license to sublicense the technology and royalties are split based on pre-negotiated terms. In both cases, CATI no longer serves as the ownership arm. Nonetheless, the results are the same, and expenses are kept low as CATI no longer has to maintain the patents, and most important there remains the ability to leverage private industry intellectual property in order to serve as a source of innovation for regional entrepreneurs and existing companies. CATI today has grown inovaTECH™ to a point where it currently owns and/or manages nearly 300 patented technologies.

The following case study outlines the steps taken by CATI to develop an off-strategy, patented technology originally developed by Kraft Foods. Wisconsin is known as the “Dairy State,” and thus this particular technology fits quite well with growing this industry cluster. The case study serves as an example of the comprehensive nature of CATI’s technology transfer process and service delivery model.

Alliance Enterprises Case Study

In 2005, Kraft Foods donated six patented technologies to CATI Inc. The food-based technologies involved manufacturing processes for the extraction of cholesterol from eggs as well as milk. In addition, the process provided a more favorable ratio of saturated to unsaturated fats for finished products. Kraft had made an internal decision that the markets were too small for their internal product launch hurdles. Furthermore, as these were process oriented technologies, they were in opposition to Kraft’s business model of serving as a marketing and consumer branding company rather than a manufacturing or processing company.

There were several advantages to the technology. While the technology may have a market too small for Kraft, the market was huge for a small company or entrepreneurial team looking to supply a healthy dairy or egg product, which could still have the same taste and texture qualities as conventional high fat, high cholesterol products. In addition, Kraft had already taken the product through pilot production, with testing on a variety of products along with market focus groups, as well as provided access to R&D notes. Thus, not only did we have the technology to pass along for a new business start-up or existing business expansion, but it was much further along the commercialization path. This is actually fairly consistent with most of the deals completed with CATI and further adds to the value of the model, which stresses quickness to market at lower costs.

CATI’s first step was linking the technologies with area academic institutions to further develop the pathways to market. Carthage College, a private, liberal arts



Through a technology formally developed by Kraft Foods and licensed from CATI, Alliance is now producing a healthy milk ingredient with lower cholesterol and fat content, while still preserving the taste, texture, and baking properties of traditional dairy products.

institution, has “Scienceworks,” a well-respected entrepreneurship program directed towards science students. The program served as one of the original founding organizations for the National Collegiate Inventors and Innovators Alliance (NCIIA). A team of Scienceworks students developed a commercialization plan for using the dairy patents for a new line of healthy, Hispanic cheeses. Hispanic cheeses represented the fastest growing segment of the cheese industry but also represented some of the cheeses with the highest fat and cholesterol content.

One of the key steps in linking our technologies with existing companies or potential entrepreneurs is having solid partnerships with regional business and economic development organizations. Most technology transfer marketing efforts are rather passive, with available technologies displayed on an academic web site. While CATI offers that as well, deal flow is greatly enhanced by creating relationships with those entities whose job it is to engage existing businesses and entrepreneurs on a regular basis. Economic developers routinely interact in this fashion through business retention activities or a growing list of entrepreneurial development initiatives.

In this particular case, we approached a regional Hispanic business and professional association seeking interested parties. Ed Salinas, CEO of Alliance Enterprises, a food and consumer products packaging company, expressed early interest in the process and market potential. Seeking to further diversify, Mr. Salinas developed a comprehensive business model, based on the “Splenda” sweetener substitute model, which would use CATI’s dairy patents from Kraft as a new healthy milk ingredient.

CATI qualifies companies and entrepreneurs seeking its technology for licensing by evaluating the proposed business plan, commercialization strategy, management team, and capital structure. In some cases, an entrepreneur or company may want to review the technology prior to securing a licensing agreement. If this is an exclusive arrangement, there are typically fees associated with this agreement for a three- to five-month testing period.

In July 2006, Alliance Enterprises and CATI Inc. entered into an exclusive license agreement to manufacture and sell a new, healthy milk ingredient, “Benelact.” In January 2008, only 18 months later, Alliance Enterprises opened the doors to a new \$2 million R&D and pilot production facility within the CATI Center, which is a 40,000 sq.ft. incubator, education and technology transfer facility. The center was completed in 2003 through a partnership among Gateway Technical College, Racine County Economic Development Corporation, and CATI Inc.

Moving forward, the company will also receive additional technical assistance and internships through the Dairy Business Innovation Center, University of Wisconsin-Parkside, Gateway Technical College, Burlington High School, and Carthage College.



Alliance invested more than \$2 million in a new pilot production and R&D operation within the CATI incubator.

CATI’S TECHNOLOGY TRANSFER MODEL – THE DEMAND SIDE

The second product suite for driving innovation in existing industries is called inovaDRIVE™, a program designed to assess a business’s technology needs and either develop or acquire the appropriate technology or solution.

Through inovaDRIVE™, CATI works with the company to identify new product development opportunities or higher value-added markets to increase margins and provide a stronger market position in comparison to low-cost production countries. The key is the inovaDRIVE™ four-part process that results in a technology development strategy or solution based on key identified platform products and/or issues. In many cases, the strategy involves the identification of know-how expertise, new patent filings, enhanced strategic R&D partnerships with other non-competitive industries, or in-licensing of late-stage corporate, university or federal lab technologies. The critical factor is that the final product reflects a new long-term business development strategy that facilitates economic development growth in our region.

Since 2005, the inovaDRIVE™ process has evolved to address the business retention and expansion needs of our local firms. The following case studies outline the program’s successes, as well as its evolution as a technology-based economic development tool.

Case Studies

- **Cast Tools**, a boutique foundry operation, approached CATI with a problem it was experiencing with a new, low-cost casting process that would fundamentally position the firm as one of only two foundries in the world that could utilize this process. The company needed specialized know-how to solve a problem with “pitting” that was occurring during the casting process, resulting in costly imperfections. Using inovaDRIVE™, CATI assembled a diversified team including personnel from NASA Glenn in Ohio

and Oak Ridge Laboratories in Tennessee to ultimately develop a simple coating application to solve this critical issue for Cast Tools. This solution helped Cast Tools to retain a significant contract for tooling with Corning Company, the world's largest manufacturer of glassware for highway and street light fixtures.

- **KAO, LLC** is an automotive parts supplier and one of the largest African American-owned businesses in SE Wisconsin. Through a small acquisition, KAO had acquired a patented sanitizer product sold primarily to Boy Scouts of America. However, while the product had very large margins, KAO realized it could not increase product sales until a significant issue was solved regarding the lack of functionality in cold water applications. Leveraging university faculty and CATI staff, a new powder form was developed in addition to designs for more cost-efficient packaging. This project resulted in cost-savings for the company, as well as a new product line for international and disaster relief markets. The project was honored with the 2005 Small Business Times Innovation Quotient Award for manufacturing.



Through CATI's InovaDrive process, KAO was able to expand their product line into more value-added global markets.

- **Merit Models and Summit Tool Works** were experiencing similar problems when they jointly approached CATI. Both worked with companies to develop molds and tooling for high volume parts. They both also had a significant competitive dilemma....low cost tooling from China, which threatened to put both out of business. Working with the inovaDRIVE™ process, CATI assisted the two companies by forming a new entity mutually owned by both firms – Maha Solutions, LLC. Maha Solutions was created as an outgrowth of an ideation session on how to develop a value-added alternative for U.S. companies needing low cost tooling from China. The solution – Give U.S. companies the low cost tooling they require, but provide a value-added service solution to their problems of working in China, such as quality control, proprietary infringement, and lead

time delivery issues. The result for Maha Solutions and the SE Wisconsin region has been the retention of higher paying engineering, sales, and project management staff, while transitioning two, small local firms into global players. CATI's work with Maha Solutions was ultimately featured on a front cover story of the *Small Business Times*. In three years, Maha Solutions has nearly reached \$1 million in sales and operates a second office in Shanghai.

- **Vista International Packaging** is a food packaging supplier. Using inovaDRIVE™, CATI created a technology development strategy that outlined an aggressive leap frog technology platform for the company. The results have included the filing of two new patents, in-licensing of a university patent, as well as a new joint R&D partnership.

According to David Hagman, president and CEO, "Vista was searching for an outside resource, a 'think tank' for innovation and development of a technology strategy to accelerate the process on new product introductions and CATI came to the rescue. The relationship between Vista and CATI has evolved into a strategic partnership that will flesh out new market opportunities in packaging. Vista's goal is to be an industry leader and drive profitable revenue growth through innovation and offer value-added packaging to the food industry. I feel we can accomplish our strategic goals with CATI on the team."

CONCLUDING REMARKS


Technology transfer and commercialization programs have sprung up all across the country. While great strides have been made to link technology transfer with local economic development goals, there remains continuing efforts. For example, technology transfer organizations tend to operate on a scale more consistent with regions and states, while most economic development remains local in geographic scope. In addition, economic development agencies have tended to focus on business recruitment and retention, developing and implementing broad strategies, and helping businesses find the resources needed to be successful. Providing core services in technology transfer and commercialization may be more partnership oriented rather than driven with internal resources and capacity.

While CATI does not attempt to replicate a local or regional economic development agency, we have positioned the organization as another tool for economic development groups. In other words, the CATI model can be utilized as a resource when faced with businesses or entrepreneurs seeking innovation or struggling to develop more value-added products and services. As such in the last two years, CATI has developed relationships with nearly a dozen city and county economic development organizations in Southeastern Wisconsin.

However, we have recognized that the scale of a technology transfer model must go beyond the local and often regional level. In that regard, we believe there is

tremendous value in creating a national framework or exchange for linking private sector, underutilized patents with entrepreneurs and existing companies as part of a local or regional economic development strategy. The thought is that at a point in the future, technology in one region of the country that might be applied in Southeastern Wisconsin and vice versa can be linked by local and regional economic development groups.

CATI's first national engagement began in April 2006 when the state of Delaware's Economic Development Office awarded the organization a contract to manage its Patent Donation Initiative and establish a program based on the CATI model in order to commercialize patented technologies from the DuPont and Hercules corporations. Finally, while still in its relative infancy as a model, early successes have resulted in CATI receiving honors for inovaDRIVE™, and inovaTECH™, from the International Economic Development Council (IEDC) for Technology-Based Economic Development Programs in both 2007 and 2006 respectively.

Further information on CATI's unique private industry driven technology transfer efforts can be found at www.thecati.com or by contacting CATI staff directly at 262.898.7512. 

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five ways for communities

TO SHAPE THEIR BROADBAND FUTURES

By Robert Bell

In 1912 in the US, more farm households in remote rural areas had telephone service than households in major cities. In 1924, the state with the most telephones per person was not California or New York or Massachusetts, but the farm state of Iowa.

Why? In 1874 – two years before the invention of the telephone – Joseph Gliddens won a patent on his design for barbed wire. Manufactured in vast quantities, it was cheap and easy to install. Farmers and ranchers across the US nailed hundreds of thousands of miles of it to posts in order to fence in cattle and crops. Then, about two decades after the Gliddens patent, Alexander Graham Bell's original patents on the telephone expired. This kicked off a competitive race to wire the nation – or at least the big cities where lots of customers were conveniently close together. But paradoxically, it also created opportunities for farming cooperatives to offer phone service. Farmers bought batteries and telephones, and connected them to their barbed wire fences to create “party line” networks linking farms throughout the Midwest. Because their “wiring” was already in place, the farmers beat the phone companies to market.

Telecommunications has grown up differently in different places, but the stories have one thing in common. At their heart is tension between telecommunications as a business opportunity and telecommunications as a public good – between the profit motive and a public-service mandate. And that is as true today as it was in the 1890s.



The free WiFi network in Fredericton, New Brunswick, Canada uses the municipal government's fiber net as its backbone.

THE BROADBAND RACE

In the 1990s, carriers around the world began deploying broadband networks – DSL, cable, satellite and wireless – within neighborhoods, towns, and cities. At the same time, the costs of computer software and hardware, especially data storage, plummeted in obedience to Gordon Moore's famous law that the storage capacity of microchips doubles every 18 months. The result was the fastest growth of any communications technology in history. From 2000 to 2007, the number of Americans subscribing to broadband grew 684 percent. The French saw 2,800 percent growth during the same period, while the British boomed at a rate of 28,300 percent.

Robert Bell is executive director and co-founder of the Intelligent Community Forum (www.intelligentcommunity.org), a think tank that focuses on the creation of prosperous local economies in the Broadband Economy of the 21st Century. The examples in this article come from nominations for ICF's annual Intelligent Community Awards program, which provides the Forum with the research data it uses to promote best practices in economic and social development.

CREATING THE INFRASTRUCTURE TO PARTICIPATE IN THE GLOBAL ECONOMY

Some communities, particularly in urban and suburban markets, have been well served by the private sector when it comes to deploying broadband to businesses, institutions, and homes. In a global economy where broadband has become the next essential utility, however, others have not been so lucky, because they do not offer the same attractive business case to telecom carriers. This article identifies the issues that have driven local governments to become involved in bringing broadband to their constituents, and outlines five strategies that communities have successfully taken to create the broadband infrastructure they need to participate in the global economy.

Yet not everyone benefited equally. As they did in the 1890s, carriers naturally gave priority to places with the best short-term business case: urban areas, high-income neighborhoods, and business districts. Very high cost areas, such as rural regions, and low-income markets were at the bottom of the list and many remain there today.

But communities have not been willing to wait passively for private companies to invite them to the party. They have grasped that broadband is the new essential utility, as vital to economic growth as good roads and reliable power. Today, broadband is creating new kinds of companies like Yahoo and Google, even whole new industries. It is empowering small companies to be global exporters, including the export of skills and knowledge which were never before transportable across time zones or national borders. It is ensuring that schools in remote regions and inner cities have access to the latest information tools and reference sources. It links rural healthcare providers to leading medical centers and local law enforcement to national information grids. Individuals and businesses are going global in search of low-cost, quality vendors, and Web-based tools are increasing community involvement.

By boosting the economic and social well-being of communities, broadband can reduce the incentives for their young people to move away in search of opportunity and a better quality of life. It offers every community the opportunity to move from the periphery to the center in economic terms, and can play a key role in giving small towns a sustainable future in our ever-more-connected world.

WHY GOVERNMENT GETS INVOLVED

Why do local, state or provincial governments get involved in bringing connectivity to their communities, reviving tensions between public and private interests? There are three reasons:

1. **The Connectivity Gap.** Broadband becomes a political and governance issue in communities that believe they suffer from a lack of affordable, high-quality access. The broadband gap may take several forms, from complete market failure to unaffordable prices to poor quality of service.
2. **Connectivity “Holes.”** Even in communities with ample broadband resources, there are often locations

Local and regional governments have found many ways to involve themselves in spurring access to broadband for their constituents. The most successful have all begun with the same first step: establishing a clear vision and communicating why broadband access matters. If constituents believe that broadband is just about downloading music or playing online games, they will not provide political support when it is needed. But if they see broadband as a path to prosperity and greater citizen participation, it will be quite a different story.



The Gangnam District of Seoul, South Korea was ICF's 2008 Intelligent Community of the Year.

that go unwired. They may be old industrial zones, low-income neighborhoods, or areas that pose a geographic challenge to network developers.

3. **Connectivity Promotion.** Sometimes communities want to invest in broadband in order to make a statement. They may choose to wire (or “unwire”) the local airport, central business district, parks or other zones as a marketing or business development effort. They are sending a message that their community “gets it” when it comes to broadband.

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FIVE PATHS TO A BROADBAND FUTURE

Once communities know what they want to do and why, they take different paths to get there. The Intelligent Community Forum has identified five approaches taken by the communities we have studied.

1. Development Policy

Remaining safely within the bounds of tradition, governments direct the usual tools of development policy at broadband deployment. They offer tax credits and craft rights-of-way policies to support network development. They conduct inventories of existing broadband networks and access points. They jawbone carriers into doing a better job of meeting their needs.

In **Loma Linda, California**, city government created a Connected Community project that envisioned every home, commercial and government building connected with a 10 Gbps network. As part of implementation, it created what it called the Loma Linda Standard for all new residential and commercial construction as well as remodeling affecting more than 50 percent of a structure. The standard defined how internal cabling, the “wiring closet,” the demarcation and external conduit networks should be built to ensure that every resident or tenant had the potential to access high-speed broadband services. The standard created a “bias toward broadband” among developers that proved transformative for the community. From 2004 to 2007, nearly a dozen projects went into development that incorporated the Loma Linda Standard.

The city of **Whittlesea, Victoria, Australia** also seized the opportunity created by property development to set standards for a broadband future. Through a project it called WIRED Development, it changed local planning rules to require developers to install conduit as part of sub-division development and to turn ownership over to the city. Technical specifications for the conduit were included in the new rules. As part of the deal, the city agreed to lease the conduit at very attractive rates to carriers for the installation of a fiber-to-the-home network and delivery of “triple play” services. In 2005, the first developer to apply the rules issued a tender covering an 8,000-home development.

2. Networks for Government

Local and regional governments are big users of communications, and they are generally as free as any business to build private networks for their own use. To reduce costs and gain new capabilities, they construct a fiber or coaxial network linking all government offices, schools, libraries, hospitals, and other public facilities. Fears of terrorism have spurred many national governments to make funds available to communities to improve “first responder” communications, and communities have been quick to capitalize on this opportunity. They deploy wireless networks, using the fiber/coax network as a backbone, to extend network applications to police, fire, and emergency medical service vehicles as well. Having built out this sophisticated



Corpus Christi, Texas, reduced operating costs with a muni WiFi network that also served the public.

network, such communities often invest further in e-government applications that slash costs and improve service to constituents.

What does this have to do with improving public access to broadband? By making these investments in networks and services, governments become a vital anchor tenant for broadband and stimulate demand for broadband services. Public investment will frequently attract carriers interested in building and managing the network under a managed service contract – and it can be a short step from there to deploying services to constituents as well. Successful e-government programs increase overall broadband demand, further enhancing the opportunities for the private sector.

Corpus Christi, Texas, offers a comprehensive example. The city installed a Wi-Fi network in 2004 to automate the reading of utility meters for its municipal-owned utilities. It saved substantial money and improved the accuracy of billing data. Once the network had proved itself, the city enlisted all of its departments to study current business practices and identify other chances to save money by going digital. After identifying over 80 potential business process improvements, the city decided to install a network covering the entire municipality. County, state, federal, and independent agencies were invited to share the network to communicate with assets in the coverage area. Local colleges partnered with local businesses to upgrade their information technology systems and find ways to use the network for communication, Web access, dispatch, fleet location, inventory control, and Internet marketing. The Corpus Christi school district issued wireless laptops to students in disadvantaged areas. With the hardware came virtual textbooks, Internet connectivity, direct parent-teacher communications, lesson plans, and other educational resource access. The local bus company even installed mobile Internet service on buses in express routes to attract more commuters.



Ottawa, the nation's capital, is investing in becoming the "Innovation Capital" of Canada.

3. Public-Private Partnerships

In other cases, government sets its sights on building a public-access network from the start but chooses not to spend taxpayer money on telecom infrastructure. This decision may be driven by regulation, such as laws forbidding the public sector from providing telecommunications. Politics may also play a role: more than one local or state/provincial government has gotten into hot water by building networks that were drastically underused.

Public-private partnerships take many forms, limited only by the imagination and legal framework in which the municipality operates. In **LaGrange, Georgia**, the city negotiated a deal in the 1990s that motivated a cable television company to develop a state-of-the-art broadband network. The city issued a municipal bond to fund network construction under an agreement in which the cable carrier agreed to lease back the network for its own use, with lease payments covering the debt service on the bond. In addition, the city retained a percentage of bandwidth for its own use, and went on to become a network and IT services provider to communities throughout the county.

In **Northeast Ohio**, the city of Cleveland, Case Western Reserve University, and major healthcare and arts and cultural organizations formed a nonprofit called OneCommunity. OneCommunity forged partnerships with the region's telephone and cable carriers, under which the carriers donated unused fiber-optic circuits to OneCommunity and OneCommunity contracted for last-mile services from the carriers. For OneCommunity and its members, it was an opportunity to lower their costs while vastly expanding their capacity. For the carriers, who were in the depths of the telecom recession, the fiber was a sunk cost generating no income, and OneCommunity was guaranteeing a revenue stream in return for the transfer of ownership. But OneCommunity's impact was more profound. By creating what it called an "ultrabroadband" network, it significantly boosted demand for communications across the region.

In **Ottawa**, the capital of Canada, local government spurred the formation of a volunteer group, the Ottawa Rural Communities Network (ORCnet) to build awareness about broadband and aggregate demand in rural areas. Through workshops, community meetings, and work with the telecom sector, ORCnet helped service providers build a business case for extending broadband into low-density markets. To sweeten the pot, local government put C\$1 million into a public-private partnership that invested C\$3 million in a network build-out for completion in autumn 2007, which largely closed the urban-rural broadband gap.

4. Dark Fiber and Open Access Networks

Yet another variation on deployment strategy leverages the municipality's control of its roads and rights of way to encourage the private sector to invest. In these communities, government stops issuing permits to carriers to lay cable or fiber and instead builds its own system of conduits and lays "dark fiber" throughout the network. It then leases access to the fiber to carriers.

By digging up the streets once and then closing them to further construction, local governments protect their citizens from the disruption of repeated road work. Competitive carriers – though not necessarily incumbents – react positively, because starting up service becomes as quick and easy as connecting equipment to both ends of the cable or fiber. The municipalities price the leases to cover their construction and maintenance

In other cases, government sets its sights on building a public-access network from the start but chooses not to spend taxpayer money on telecom infrastructure. This decision may be driven by regulation, such as laws forbidding the public sector from providing telecommunications. Politics may also play a role: more than one local or state/provincial government has gotten into hot water by building networks that were drastically underused.

costs as well as providing a positive return on investment. In some cases, the municipalities go a step further by creating an “open network” management platform that permits carriers to provision services almost instantly, which encourages competition and innovation.

In Sweden, the city of **Karlskrona**, decided to make a revolutionary change in the way telecommunications were provided within its borders. Based on its success in attracting the corporate headquarters for mobile phone companies in the 1990s, Karlskrona branded itself “Telecom City” and directed its municipal utility company to build and operate a fiber network. The company, called Affarskverken, became a commercial ISP as well as a network operator. But the company’s services failed to generate subscriber growth. In 2004, city leadership changed the rules, directing that Affarskverken leave the services business and become an open network on which other providers would deliver services to customers. These service providers were strongly encouraged not to lock customers in with long-term contracts as the city sought to position itself as a test-bed for new services. Affarskverken reconfigured its network into a competition-neutral, open-access platform that allowed service providers to build and manage services on demand. Over the next two years, new providers flocked to the network, including seven ISPs, five IPTV providers, two VOIPs companies as well as suppliers of movies, music, and local news.

The Loma Linda Standard did boost broadband coverage in California’s **Loma Linda**, but it did nothing to bring more competitors into the market. The city went on to invest nearly US\$30 million to build an open-access fiber network to meet its own communications needs and interconnect the fast-expanding array of new developments and renovation projects. Like Karlskrona, Loma Linda entered the “transport” business without becoming a service provider: in the jargon of the telecom industry, it became a “carrier’s carrier” rather than a competitor. The municipality owns and operates a city-wide IP matrix consisting of multiple, redundant fiber optic loops with wireless communications coverage areas serving residential and business customers. Building cabling systems and other networks can connect to the city network so long as they follow the Loma Linda Standard codes. There is no requirement that anyone connect to the Loma Linda network but as a public utility it is able to offer considerable cost savings over alternatives. Increased competition has brought the price of fiber-to-the-home in Loma Linda down to \$1 per day.

5. Direct Competition

The most aggressive posture a community can take is to invest public funds in setting up a broadband carrier, building a network and delivering service to outside customers. Local government typically takes this path after repeated attempts to interest incumbent carriers in upgrading networks have failed because the carriers could not make a business case for investment. Since municipalities need to earn a return sufficient only to pay capital and operating costs, they can frequently make



Westchester County in New York State built an 800-mile fiber backbone to serve its mix of urban, suburban, and rural constituents.

such a case themselves – particularly if they already own and operate water, gas or electric utilities, as many small rural communities do. Owning these utilities means that the community already has facilities running into every home and business, as well as a backbone communications network in place to control operations.

Some communities simply decide to think differently about broadband. As the mayor of **Fredericton, New Brunswick, Canada** has put it, “we don’t charge people to walk on our sidewalks; why would we charge them for broadband?” This was the argument used to help justify development of the Fred-eZone in Fredericton. Having built a money-saving network for government and institutional customers starting in 2000, the city used it as a backbone for a network of 300 WiFi access points covering an eight-square-kilometer (3 sq mi) zone, and made access free to all. The costs are considered part of the city’s regular infrastructure operating budget.

When incumbent carriers ignored it in favor of neighboring New York City, **Westchester County** in New York State, responded by developing the Westchester Telecom Network, a multi-gigabit fiber backbone that now extends over 800 miles into every corner of the 500-square-mile county. The county government worked with 43 local governments, an independent library system, major hospitals, and dozens of school and water districts to pool communication budgets worth \$50 million over five years. This long and intensive effort provided all the incentive needed for a

cable TV company, Optimum Lightpath, to build the network. Over 3,500 companies have connected directly to the Westchester Telecom Network, as well as more than half of all municipal agencies in the county, and all of the county's schools, libraries, and hospitals.

MEETING THE OBSTACLES

Whatever path a community follows, it can expect to find obstacles in its way. Generally speaking, the obstacles grow with the community's ambition. Developmental policy favoring broadband adoption is unlikely to be controversial, since such policies are widely accepted. Having government go into the telecom business, on the other hand, can ignite controversies rising to the national level. What are some of the most common obstacles?

Sustainable Economic Models. Not every community can or should build its own network in competition with the private sector. No community should rely blindly on the wisdom and generosity of private-sector partners to meet the community's needs. In 2007 in the US, there were headlines about problems with municipal broadband networks. Communities including San Francisco, Chicago, and Houston had previously entered into partnerships with EarthLink in which the carrier agreed to pay all development costs for a wireless network. The agreements called for a minimum level of free service to low-income residents, in return for operating a paying service for others, with advertising revenue to help make the budget add up. In August 2007, the company reversed itself and demanded that cities pay for network construction. When its terms were rejected, EarthLink withdrew from the projects. Columnists bewailed the demise of muni wireless, but the real lesson was perhaps the oldest one in human history: you can't get something for nothing. The planned networks never had sustainable business models. It just took EarthLink some time to deliver the bad news to its customers. Communities considering any role in building telecom systems must find an economic model that makes basic business sense and is conservative in its estimates of revenue and expenses.

Competitive Response. When governments decide to spend public money on any kind of telecommunications investment, they should expect a competitive response from the private sector. This can come as a shock. Governments are not used to competition. They are further disadvantaged by the fact that, in democracies, all of their plans and budgets are public knowledge, whereas the private sector is entitled to keep secrets.

Private-sector competitors can respond in several ways. Legal and regulatory challenges are a nearly universal first response. Depending on the legal environment, the challenge may be offered in Council and other municipal public meetings, through appeal to state or

provincial agencies, or by introducing legislation at the state, provincial or even national level that creates roadblocks. Thanks to effective business lobbying, seven of the 50 US states have laws restricting the right of municipalities to offer communications services, and a further 13 specifically regulate municipalities in this area.

When communities win the right to deploy networks, however, there can be more challenges to come. Determined private-sector competitors can and frequently have priced their services at or below the offerings of the city, willing to risk losing money in order to maintain market share. Public investment also frequently motivates private carriers to make investments that they would not otherwise make. This is a net public benefit, whatever its impact on a municipal network project. But wise city planners take this possibility into account by ensuring that the business case makes sense even under strong competitive assault.

Managing Expectations and Priorities among Constituents and Partners. When government embarks on network development, it can be a long road. Successful Intelligent Communities create a high degree of collaboration among a broad range of partners: local government agencies, school districts, institutions such as hospitals and universities, local communications and


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technology providers, businesses and business groups, and community groups and important citizen leaders. It is a complex ecosystem with many moving parts, each with different needs and concerns but all drawn to an opportunity to make the community a better place – as well as for some kind of personal gain or avoidance of personal loss.

In any collaborative endeavor, human beings have two motives, and success typically requires that you address both. There is the higher purpose: economic growth, social inclusion, building a better future, cultural preservation, what have you. This is the “headline” that garners initial excitement and support. But the endeavor must also serve the self-interest of each party involved, whether it is for better service, increased income or reduction of risk. In a collaborative project, all parties will typically share an interest in the higher purpose, but each may have a different self-interest, and organizers should put time and effort into understanding the different motives and structuring the endeavor to serve as many of them as possible.

It is also vital to have a small group of effective, well-respected individuals define the vision for the project, agree on reasonable expectations and, most important of all, deliver a consistent message. Steady leadership that persuades everyone of the importance of the goal – and keeps everyone focused on it over the long haul – makes the difference between success and failure.

CONCLUSION

Mention municipal broadband, and most people think you are talking about direct competition with the private sector. But direct competition is just one of many strategies and by no means the most common. Intelligent Communities everywhere want the same thing: to get their citizens the broadband utility they need at a price they can afford. Controversy may rage about predatory competition from government or greedy private carriers, but it matters little. What matters is making it happen. 

Mention municipal broadband, and most people think you are talking about direct competition with the private sector. But direct competition is just one of many strategies and by no means the most common. Intelligent Communities everywhere want the same thing: to get their citizens the broadband utility they need at a price they can afford. Controversy may rage about predatory competition from government or greedy private carriers, but it matters little. What matters is making it happen.

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OF GAMES

By Kristina Erickson Hudson

When most people think of video games, they think kids, they think toys. At *enterpriseSeattle*, a public-private economic development partnership charged with the mission of building a competitive, world-class economy in the region, we think business. *enterpriseSeattle*'s primary mission is to grow the jobs and tax base for King County and its 39 cities. It achieves this mission through a customized client services program, that's offered free-of-charge, and executed by its team of business development professionals. There are several business development managers at *enterpriseSeattle*, each with an expertise in a particular business cluster. Interactive Media, or video games, is one of our industries of focus.

Why games? The video game is the first new storytelling medium to emerge since television. It has changed the way we experience entertainment and has changed our lifestyle. Interactive Media is video games which use sights and sounds to create virtual experiences. With creation of advanced animation and 5.1 surround sound, video games are a unique entertainment experience where you become a part of the storytelling and the music – not only are you watching and listening, but you are actively participating.

Additionally, there are big dollars in the video game industry, most of which goes to high salaried positions. According to the 2007 PricewaterhouseCoopers study, the global video game indus-



World Cyber Games brings the global video game industry to Seattle.

try will grow from \$31.6 billion in 2006 to \$48.9 billion in 2011, growing at a 9.1 percent compound annual rate. In the entertainment world, the game industry revenues surpassed film years ago and recently edged out music to be the dominant entertainment medium of today. Like film and other entertainment sectors, the game industry has also been labeled as recession proof. During times of an uncertain economy, this is exactly the industry we want to have in our community.

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SEATTLE AREA'S SUPPORT OF THE EMERGING TECHNOLOGY CLUSTER OF VIDEO GAMES

In times of budget cuts that limit staff and resources, great progress can still be made to support emerging clusters. The Washington Interactive Media Program began with one staff person and zero dollars. Driving this economic development program are strategies based on partnerships which give a laser beam focus on what is needed to achieve results with limited funding. With challenges came opportunities to be innovative and collaborative. Although this sector is unique to the Seattle region, this program's blueprint can be applied to other emerging clusters in any region.

TABLE 1. Game Definitions

- 1. Console Games** – These units are plugged into the TV. Purchase a game, plug it in the console, and play. The three major consoles are the Nintendo's Wii, Microsoft's Xbox 360, and Sony's Playstation3.
- 2. PC Games** – The game is purchased, loaded on the PC, and ready to play. Some PC games are also available on the consoles.
- 3. Massive Multi-Player Online Games (MMOs)** – Users download or purchase the software in stores. Most MMOs have subscriptions and players can participate with players from around the world at any time of the day.
- 4. Handheld Games** – These are the portable game devices like Nintendo's DS and Gameboy, and Sony's PSP
- 5. Casual Games** – games played on a computer or mobile phone – that usually can be figured out without having to read the directions. Popular games are Bejeweled, Diner Dash, and Text Twist.
- 6. Serious Games** – These are products that use game technology for education, training, health, and public policy.

WASHINGTON STATE'S VIDEO GAME ECONOMY

Here in the Puget Sound Area, video games are big business. This cluster is a fast-growing, technology-related industry that has become a large part of our local economy. Video games are commonly perceived as entertainment. This is the commercial and most public side of the industry. However, the technology behind the games is also the foundation that relates to future advancements in health sciences, education, military training, and homeland security.

In 2007, *enterpriseSeattle* commissioned Chris Mefford with Community Attributes, a local economist, to conduct an economic impact study of the local industry. We learned that in 2006, the video game industry brought in over \$4.6 billion in direct revenue to the state of Washington and has been growing at 30 percent a year. Although the study is focused on Washington State as a whole, most of the activity has clustered near the cities of Seattle, Bellevue, Kirkland, and Redmond. The study cites industry analysts as having recognized the Seattle region's strength in console games, as well as its leadership position in one of the newest segments of electronic game niches, casual games. With Nintendo, Microsoft, and RealNetworks in Seattle's backyard along with over 150 companies and more than 15,000 employees in this industry, the Puget Sound region is one of the top game development centers in the world. The full version of the study can be found at www.enterpriseSeattle.org in the Emerging Industries Category, under Interactive Media.

With Nintendo, Microsoft, and RealNetworks in Seattle's backyard along with over 150 companies and more than 15,000 employees in this industry, the Puget Sound region is one of the top game development centers in the world.

INDUSTRY BACKGROUND

There are several different types of video games: Console, PC, Handheld, Massive Multiplayer Online Games (MMOs), Casual, and Serious Games (see Table 1 for definitions). One of the newest segments is casual games, which have expanded into new segments of players including women, professionals, and retirees. A surprising demographic statistic is the typical player of casual games: female with an average age of 50. In terms of revenue, PricewaterhouseCoopers predicts MMOs to be the fastest growing segment over the next five years (see Table 2 for global industry revenue).

Similar to film and television, games also have different genres, each appealing to different demographics of

TABLE 2. Growth of the Industry

- The global industry of computer and video games will grow from \$31.6 billion in 2006 to \$ 48.9 billion in 2011, growing at a 9.1 percent compound annual rate.
- Console and handheld games will continue to dominate the market, growing at 4.2 percent and reaching \$7.9 billion in 2011.
- Multiplayer online games are the fastest growing segment of the industry whose revenue will grow from \$1.1 billion in 2006 to \$2.7 billion by 2011.
- Cell phone games are predicted to reach \$1 billion in 2007.
- Global entertainment and media industry is in its strongest position since 2000 and will grow at a rate of 7.3 percent to \$1.8 trillion by 2009.
- The Asia Pacific region is reported to be the fastest-growing market over the next five years, led by China, which is forecast to overtake Japan as the region's biggest market by 2008.

Source: PricewaterhouseCoopers 2007

the global audience. Just as there is a wide spectrum of movies, music, and books available to consumers, the video game industry provides a variety of choices for people of all ages. In addition, the video game industry also has a well established and respected rating system to inform the buyers of their purchasing choice (see Table 3 for more information on the rating systems).

TABLE 3. Rating System for Video Games

- Computer and video games are rated by the Entertainment Software Ratings Board (ESRB) whose system includes age recommendations and content descriptors.
- Entertainment industry watchdogs such as Senator Joseph Lieberman and the National Institute on Media and the Family, call the ESRB system the best media rating system in existence.
- In 2007, only 15.5 percent of games sold were rated "Mature (M)," as compared to the 84.5 percent of games sold rated "Everyone (E)", "Teen (T)", or Everyone 10+ (E10+)
[44.9 percent rated "E", 27.9 percent rated "T", and 11.6 percent rated "E10+"].
- The average American video game *player* is 33 years old. The average game *buyer* is 40 years old.
- Industry research shows that 90 percent of games are actually purchased by adults over 18.
- Ninety-one percent of parents report that they monitor the content of the games their children are playing.

Source: The Entertainment Software Association

THE BEGINNING OF THE WASHINGTON INTERACTIVE MEDIA PROGRAM

With three game-industry anchors in the Seattle-area, Microsoft, Nintendo, and RealNetworks, the climate for entrepreneurial and expanding companies in the region is favorable. The proximity to these major publishers and digital distributors, along with the strong support services available, makes the Seattle-area an ideal place to do business in the interactive media industry. However, just five years earlier, the perception wasn't quite the same.

In October 2003, there were some early signs of local game developers leaving the Seattle area. For instance, Electronic Arts had recently closed their Seattle-area offices and moved resources to their Canadian Headquarters in Vancouver. The question: Why? After months of thorough research and interviews with a handful of leaders in the game industry, a report was written for the state of Washington to raise awareness of the interactive media industry with local government. This garnered the attention of local leaders, and over the next six months, the development of the Interactive Media Industry Task Force began and was comprised of public and private sector participants. It became quite

apparent that some of the key issues were misperceptions about the local industry and a lack of knowledge about the business incentives available. For years this industry had flown under the radar in the eyes of the local business community.

Other regions were beginning to recognize the value of the game development industry and were beginning to put incentive packages in place. It was time to step up and recognize this industry in order to not lose our foothold as a global leader.

By working with C-level executives in the game industry, in cooperation with local and state governments, the Washington Interactive Media Program was developed. The purpose of the program is to promote and grow the interactive media industry in Washington State, thereby increasing its contributions to the economic development of the region. It is dedicated to serving the needs of companies involved in or supporting interactive media software, hardware, video games, handheld devices, personal computers, and the Internet.

PROGRAM STRATEGY

There are four objectives to this program: to promote the region as a major center for interactive media; to nurture and create opportunities for entrepreneurial and expanding businesses; to develop and recruit talent to Washington; and to educate government about the interactive media business.

Several strategies were laid out to help achieve these objectives. The first was to develop more responsive financial institutions. New platforms and business models are emerging for the interactive media industry. Due to the unique business models of this industry, it was important to maximize every opportunity to educate the financial entities about these opportunities.

The second strategy was to bring a large, existing industry conference to Seattle and/or create a unique Northwest conference or event. Large events draw press and the global game industry. To help increase awareness of the strength of our community, it was important to bring more of these large events to the Seattle area.

Strategy three was to raise public awareness. This involved educating local and state governments and communities about the strength of the industry through press releases, public speaking engagements, and feature articles.

Working with educational institutions on training and re-training was the fourth strategy. As with many technology-based clusters, the workforce is a huge issue. There are simply not enough employees who have the experience to fill the jobs that are open. Connecting industry to education was critical.

The last strategy was to develop the cluster by creating networking opportunities for executives. As there were no local events targeted toward this industry, there were no real opportunities for industry executives to come together to discuss ideas and to develop potential partnerships.

Due to limited staff and resources, it was imperative that local partnerships were developed to work toward accomplishing the objectives of this program

OBSTACLE 1: FUNDING

As referenced earlier, resources were scarce and the lack of funding was a major obstacle. In 2003, state coffers were low, many budgets were cut, and spending was reduced. Since the Washington State Film Office was already significantly under funded, there was no available budget to dedicate to this new effort. The resource crunch continued. Over the next year, the governor of Washington State listed the Film Office on her list of budget cuts. Then, more so than ever, it was imperative that solid partnerships be developed to maintain the vision of the Interactive Media Program. Today, this program is housed within *enterpriseSeattle* with one dedicated staff member. As resources continue to be limited, partnerships are leveraged among our local business community, local industry associations, and government leadership in order to achieve the goals of the program.

OBSTACLE 2: INDUSTRY BIAS AND LACK OF KNOWLEDGE

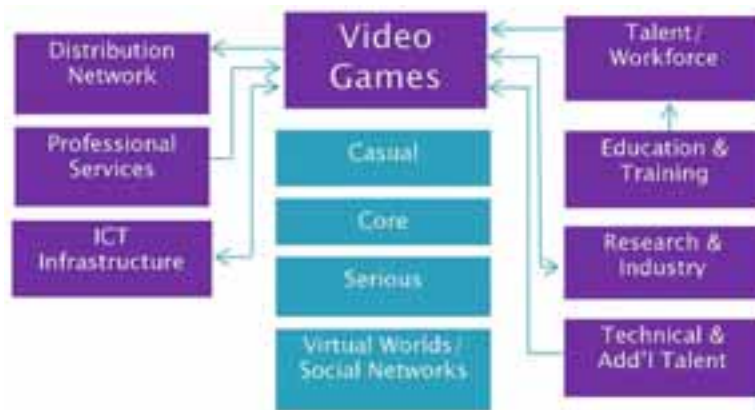
Since this was the first economic development program in the country specifically targeted toward the video game industry, community leaders had several questions and issues which soon came to light. The following needed to be addressed prior to moving forward with the program as these questions became obstacles in the minds of those who did not yet understand the industry. Who and what is our local industry? Aren't games just toys? What about violence and video games? All legitimate questions, all with surprising answers to those who asked.

Who and What Is Our Local Industry?

Looking back at the history of interactive media in the state of Washington, our local industry has early roots in games from two of Washington State's biggest companies. Microsoft's first game, Olympic Decathlon, was released in 1981 for the Apple II computer. And Boeing's contribution began in 1976 with its flight simulators for pilot training and aeronautic engineering applications.

Over the next decade, companies like Nintendo of America, RealNetworks, Amazon, and McCaw Cellular became a part of the local industry. Unbeknownst to many, by the mid-90s, the Seattle-area already had major corporations pioneering game-related technology, digital media distribution, e-commerce, and wireless technologies. However, it is more than the major companies that make this industry. Nearly all other independent companies in the video game industry have founders or execu-

FIGURE 1.



This diagram shows how the video game industry reaches across other industry sectors.

tives with direct roots with one of the three anchor companies – Microsoft, Nintendo, and RealNetworks. Paired with a workforce experienced in digital distribution and wireless technologies, the talent pool and expertise in the region are deep, which in turn promotes entrepreneurial activity. Support for start-up businesses was needed to assist with financing, workforce development, marketing, and community education.

The video game industry also includes many connections between other industry and economic sectors. As digital content converges, we see crossover in the fields of wireless, film, and music. Also, the industry significantly affects telecommunication hubs and finance entities with digital distribution and significant amounts of online transactions. To provide a clearer picture, an overview of this concept in Figure 1 includes publishers, manufacturing, distributors, financing, servers, networks, telecommunication companies, publishers, research, and more.



Lt. Governor Brad Owens of Washington State, and Jongwoo Park, President of Samsung Electronics, open the World Cyber Games in Seattle, Washington.



For three days, delegates from 70 countries compete for gold medals and the chance to be 2007 World Cyber Games Grand Champion.

Lastly, this industry produces high-paying, family wage jobs, both technical and creative. From programmers to graphic artists, engineers to actors, game designers to musicians, the video game industry is truly the amalgamation of arts and technology and absolutely part of the creative class that every region is striving to develop.

More Than Toys: Alternative Uses for Games

Interactive media technology is the foundation for future advancements in health sciences, education, military training, and homeland security. This is more than the intellectual property of entertainment, and it has far reaching applications to other industries.

In health sciences, interactive media is used to train surgeons for robotic surgery and to train ER doctors for responses in high stress environments. Scientific American reports that patients can get relief from pain or overcome their phobias by immersing themselves in computer-generated worlds. Burn patients use virtual reality and video game technology to navigate through "Snow World," specifically designed to ease their pain. Now we are seeing games like "Fold-It" from the University of Washington, which is a playful way to build proteins that could someday be the cure for the diseases that affect our world.



Team USA wins gold and becomes the 2007 World Cyber Games Grand Champions.

For education, it has been proven that children learn better through experience. Using interactive media, children can learn more effectively through virtual environments. Moreover, this technology can bring a world of experience to the student at the click of a mouse. A study, by the Institute of Education at London University, which claims that video games have a positive impact on children, sees games as culturally relevant as music, film or literature.

The US military uses interactive media in training for its men and women in combat. Because of this, they have the ability to reduce mortality rates as the soldiers have had virtual experience with similar situations. The Department of Defense continues to be a huge investor in this technology.

Homeland security is another way that interactive media can be used as a training ground. Every state continues to work with the federal government to quickly coordinate agencies, people, and procedures to prepare for possible homeland security issues. Costs could be significantly reduced if this training was done in a virtual environment rather than on the streets.

Video Games for Everyone

An issue that continues to be brought to light by media and politicians is the perception that violence is in every video game. It is imperative that factual information was readily available to those who had pre-existing and potentially negative biases to the industry.

Breaking down video game sales in 2006 by genre, the top genres are action games bringing in 27.5 percent of all sales followed by sport games with 17 percent and racing games with 10.8 percent. Early on, the industry saw the need for a rating system and developed it with the idea that parents are responsible for the products that their children under 18-years of age purchase. The Entertainment Software Rating Board (ESRB) is the rating system for video games that was initiated by the game industry itself, very similar to the movie rating system. Of all the titles purchased in 2007, the 85 percent of games sold were either rated "Everyone," "Everyone +10," or "Teen".

SUCCESSES

Company Growth

Research from local educational institutions, industry organizations, and the economic impact study indicates that the number of interactive media companies has grown dramatically from 37 in 2003 to well over 150 in the region. This is tremendous growth over the last five years, and many of the new companies benefited from the program's industry expertise and one-on-one client work.

Like most businesses, this industry is relationship driven. Our industry expertise showed the clients that we know and understand their business needs. Through

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both technical and creative.
From programmers to graphic artists,
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Winners of Warcraft III: The Frozen Throne - Norway, China, and Korea.

the Washington Interactive Media Program, we fostered the industry's growth by listening and responding to the most pressing issues of workforce, global promotion, industry advocacy, and financing. As we continued to deliver quality work, we began to earn the industry's respect as a leader in this field. This is when the doors were opened for the referral of new business leads.

Almost all of the leads are generated directly from the industry advising us of the latest business activity. Whether it is an international company that is looking for a US presence, or a new group of entrepreneurs who are spinning off to start their own endeavor, an industry-insider referral is the best vote of confidence. This is where the one-on-one client work begins, ensuring that all clients, big or small, have the information they need to make the best business decisions. From the education of our favorable tax structure and incentives, to available office space, to industry connections, we try to keep our clients focused on their business, while we work as their 'silent business partner.'

Over the last couple of years, we have grown and attracted many new game companies to the Seattle area. A typical client starts with 1-2 employees and grows to 30-60 employees in the next couple of years. Five-year growth rates for these companies are typically 100-150 employees with revenues of over \$2 million.

Financing

Creating responsive financial institutions and entities is an ongoing mission. To start, we partnered with existing organizations to create specific opportunities for digital and interactive media to present at their annual investment forums. We also educated local venture capitalists (VCs) through one-on-one meetings about the unique business model of interactive media. Today, there are a number of local VCs and angels investing in the space of video games, and we anticipate this to increase

over time as this business model becomes more and more accepted.

Marketing and Public Relations

External public relations is difficult when you don't have a budget. The Washington Interactive Media Program and industry task force worked very hard to recruit several events to the Seattle area over the last five years. Costs were relatively low as we targeted new and existing events looking for a host city and a venue. To aid in this effort, key partnerships were created with the Seattle and King County Convention and Visitors Bureau and the Seattle Sports Commission. By 2008, we brought in four annual video game industry events to the Seattle-area and three international events with participants from over 70 countries.

With these events came the global media, and this allowed us to further leverage the opportunity to promote the region as a global center for game development.

A simple way to start public awareness was through a web presence. This generation looks to the web first before picking up the phone, so it was important to have industry specific information on all partner websites. To begin, an interactive media webpage was added to the larger websites of both *enterpriseSeattle* and the state of Washington. Each provided an overview of the local industry, the

tax incentives available, educational and workforce resources, and links to industry support organizations. The pages were designed to be a single point of reference for interactive media businesses looking to locate in our region.

Public awareness also came in the form of news articles, interviews, and speeches. Articles about the business of the video game industry have appeared in various publications including: the Puget Sound Business Journal, Chinese Game Developer Magazine, Washington CEO, LA Times, and more. This is yet another opportunity for us to educate the audience not only about the industry, but also our expertise.

Workforce

The workforce is a huge issue in all technology sectors. However in the video game industry, there are not many people with 20+ years of experience as it is still considered an emerging sector. As schools are the suppliers to our local workforce, spending time with educational institutions on training and re-training is crucial. By sitting on a number of advisory boards, the program's task force works hard to make sure that our educational institutions are in line with industry needs.

The University of Washington's Computer Science Department is among the nation's elite computer science departments. Another world recognized school is locat-



Team France wins gold in Counter Strike competition.

ed in the city of Redmond. DigiPen is a four-year private college that offers the world's first accredited bachelors and Master of Science degrees in computer game development. In addition, this region has strong community college and technical programs which offer a broad range of programming and game development training as well. Support is crucial for these programs to ensure that they are adequately funded and recognized by leaders and our local communities.


Networking Opportunities for Executives

Very often the video game industry is so focused on their own deliverables that they rarely have time to exchange ideas and learn from each other. By partnering with existing organizations, we were able to organize panel discussions and roundtables for the local companies on topics that mattered to them. The most recent example of this was held in conjunction with the 2007 World Cyber Games (WCG) held at Seattle's Qwest Field in October 2007.

We created a business-to-business event that took place during WCG. This event was an opportunity for the industry to share the results of the economic impact study and to educate the local and national community about the region's strength in this sector. Moreover, it provided the opportunity for local industry leadership to network and gain promotional opportunities to a global audience.

CONCLUSION

Our past, present, and future are the three Interactive Media anchors in this region. Our industry draws heavily on their presence: Microsoft, RealNetworks, and Nintendo, all of which have established worldwide markets. Through the innovative nature of this industry and our 'anchor tenants,' we will continue to have opportunities to support and grow this business. Through the Washington Interactive Media Program, we have been able to strategically support all four pillars of economic development in relation to this industry: financing, education, marketing, and government. Although the cluster of video games is unique to our region, the structure of this program can be applied to any emerging industry in any region. Lack of resources is supplemented by strong partnerships.

In just five short years, significant results have been achieved through this innovative, economic development program. Since the program's inception in 2003, our local industry has grown from 37 companies to well over 150. Today we have four annual industry events that draw the global industry to Seattle. Through these events and the press received, the Seattle region is now a known center for game development. We are proud to have the largest concentration of video game developers in the United States, and we will continue our leadership role in developing the high tech cluster of interactive media. 

HIRING?

Seek a Certified Economic Developer (CEcD).

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a green paradigm

By Kaizer Rangwala, CECd, AICP

the perceived trade-off between the environment and the economy is an outdated belief that is no longer sustainable. The economy and the natural world are inextricably linked. The environment provides the raw materials, the natural capital without which the economy cannot prosper.

While our economy operates in a linear fashion, transforming energy and matter into products and services, nature operates in a cyclic manner. McDonough and Braungart in their book *Cradle to Cradle* call for a complete redesign of the product or processes. They suggest that buildings, like trees, produce more energy than they consume; factories produce effluents that are drinking water; and products be designed such that at the end of their life-cycle they decompose and become food for plants and animals rather than ending up in a landfill, or alternatively they become high-quality raw materials for new products. Technology has evolved to a point where corporations can shrink their carbon footprints, while still improving their bottom lines.

Leaders across the globe are gearing up to negotiate a new treaty when the Kyoto Protocol expires in 2012. Amid rising public outcry, it is inevitable that the US government will have to make adjustments to business as usual, which could include taxing or setting strict caps on greenhouse gas emissions. The public awareness of rising energy costs, preference for green products and services, and stricter climate controls is the perfect storm that could severely affect the bottom line of businesses, if they do not act now.

The green and sustainable focus is increasingly becoming evident in a number of core economic development initiatives. This article describes eco-



Photo credit: Sustainable South Bronx.

Sustainable South Bronx's (SSBx) Smart Roof Project. Dr. Majora Carter, a life-long resident of South Bronx, founded SSBx to advance the environmental and economic rebirth of the South Bronx. A green roof reduces heating and cooling costs, provides amenity space for building users, reduces stormwater run off, and filters pollutants and CO2 out of the air.

nomics development trends, and green initiatives and opportunities available in core economic development areas to innovate, prosper, and at the same time do good for our planet.

SMART GROWTH

Compared to suburban greenfield sites, developing infill brownfield property is complicated and costly. We must level the playing field by implementing policies that make infill properties desirable to investors. Many cities and states are following Maryland's example. In 1997, the state adopted a Smart Growth Areas Act that coordinates economic development with planning. The Act specifies that Maryland will only spend infrastructure

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SUSTAINABLE ECONOMIC DEVELOPMENT PRACTICES

It is a great time to be an economic developer. Over two-thirds of the buildings that we will need to house our population in 2050 have not been built. Much of what we have built in the last five decades will have to be replaced – the buildings are either poor quality or the pattern of development is not sustainable. The next 50 years will see a huge surge in new development as we house and employ the next 100 million people. The challenge is that we cannot continue in our old ways. We need to curb our energy consumption and emissions, and we must grow smartly. Inherent in this challenge is the opportunity to innovate. This article explores how a green economy can produce new jobs, sustain a high quality of life, and grow our small business base.

and economic development dollars in priority areas that are already served by infrastructure or are planning to build infrastructure – this policy has allowed Maryland to dramatically reinvest in repair, maintenance, and upgrade of existing infrastructure in its urban core.

The region is the fundamental economic unit of the world. For cities to prosper, the region must adopt smart growth policies and actions that favor infill growth over sprawl. Competitive sales wars between cities hurt the region. Businesses moving out of a city to a sprawling greenfield site results in declining revenues and services for the city and loss of land for agriculture and open space in the areas receiving the growth.¹ This is a net loss to the region's economy, environment, and quality of life. Reinvesting in the aging and struggling areas builds the revenue base of the city and benefits the urban core and the suburbs.

Smart growth and green development decisions make efficient use of taxpayers' investments in infrastructure improvements and services such as police and fire. Ventura, California, is currently implementing a smart growth-based General Plan that focuses on protecting natural resources while promoting high-quality, low-impact urban infill development. Smart and compact

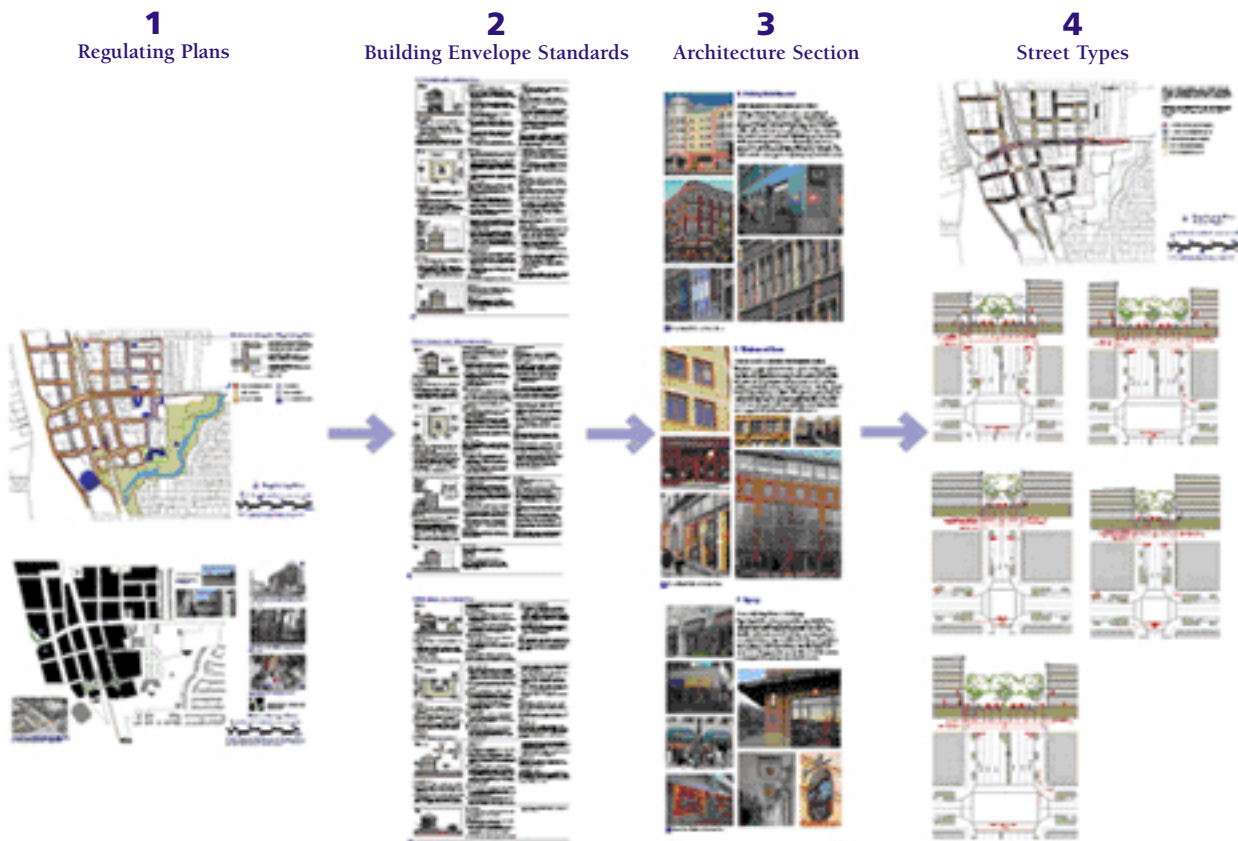
growth insures us against any limits that high energy costs may impose on our ability to drive everywhere.

"In the face of such global threats and opportunities, local communities must fundamentally reshape their approach to economic development away from targeting aggregate growth as an end in itself. Instead, our focus will need to be on fostering a healthy economy that is integrated with our concern for the environment and social equity, the three pillars of sustainability," says Ventura City Manager Rick Cole. "Easier said than done, of course. It is not enough to simply slap a 'green' label on recycled conventional strategies. We need to not only rethink, but redo our approach. In Ventura, for example, we pay less attention to sales tax revenue and more to the retention and creation of high-value, high-wage jobs that generate the wealth that is the underlying source of retail sales. In a time of transition, our need is not for a perfect academic model. Instead, it is time to experiment with fundamentally changed approaches. The communities that successfully do so will be the real models for the 21st century."

One obstacle to smart growth is the current zoning codes. Conventional zoning codes separate the daily needs of shopping, housing, and work into disjointed

4 easy steps

The Code



Form-Based Code pages from the Farmers Branch Station Area Code, TX: Typically, Form-Based Codes include easy to understand drawings, diagrams and photographs. The key to a Form-Based Code is a regulating plan, which specifies the function and location of streets and their relationship with buildings and open spaces. Building heights, the siting of buildings on a lot, and uses are defined in building envelope standards. Architectural standards regulate the important public elements of the facade. Street sections specify mobility and pedestrian comfort details.

zones accessible only by automobiles. A large number of cities are replacing their conventional zoning codes with form-based codes. Form-based coding is an integrated place-based approach that focuses on the careful design of the public realm: the street, open spaces, and the public face of private buildings. Land uses are not ignored but regulated by broad parameters that better respond to market economics and allow for a mix of uses serving daily needs within easy walking distances. Predictable outcomes and a streamlined process that reduces discretionary review are other business-friendly attributes of this coding method.

Peter Katz, an urban theorist and Form-Based Code Institute² president says, “Form-Based Codes are strongly linked to public participation programs and lead to more appropriately scaled projects that are more consistently linked with the needs of emerging economies.”

REAL ESTATE DEVELOPMENT AND REDEVELOPMENT

Buildings consume about 40 percent of the world's energy and materials. Buildings, more than the cars, are responsible for environmental damage. Sustainable buildings offer low operating costs, higher productivity, and better sales. While several case studies support this assertion, many businesses are still unaware that an efficient building which uses fewer resources will cost less, not more.

Careful orientation and siting based on climatic conditions maximize the energy efficiency of buildings. Eco-friendly buildings use renewable sources of energy, have energy efficient appliances, and reduce waste while increasing the use of recyclable building materials. Employing sensitive site design techniques can minimize disruption of existing trees and other local habitat. Use of drought tolerant native landscaping reduces reliance on periodic watering, while enhancing an authentic sense of place.

Over the past 50 years, buildings have been regarded as disposable. In Carrollton, Texas, a vacated Ethan Allen building in a commercial strip center, only a block away from City Hall, sat vacant for years while a new commercial building was built next to it. A new grocery store is built in the newer part of town, only a few blocks north, while the same grocery chain closes an existing store in an older part of town. In the new, green economy, buildings must be built to last, so they can be restored and recycled to reduce their environmental impact.

HOUSING

To control costs and maximize profits, conventional builders resort to standardization and a “build and flip” mindset. In the carbon-starved future, houses built today will require expensive retrofitting to renewable sources of energy and sustainable materials, in the long run. Energy-efficient features reduce operating costs, thereby increasing the value of the house. Some builders are recognizing that green building helps sell houses to a increasingly conscientious buyer.

GLOSSARY:

Eco-tourism: Responsible travel to environmentally sensitive places that minimizes impact, increases awareness, and improves the economic prosperity of local people.

Form-based Code: Form-based code is a method of regulating development to achieve a specific urban form. Form-based codes create a predictable public realm by controlling physical form primarily, with a lesser focus on land use.

Green Development: Green development emphasizes environment over economic and cultural considerations.

Industrial Ecology: Industrial ecology is an interdisciplinary framework for designing and operating closed loop business systems in which resource and capital investments move through the system to become waste and the waste then becomes inputs for new processes.

Smart Growth: Compact pattern of development that provides people with housing, employment, and recreation choices by focusing infill growth in built out areas while conserving the natural resources.

Sustainable Development: Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Sustainable developments preserve and reduce consumption of resources, and recycle used resources.

Mortgage lenders such as Citibank, Bank of America, and JP Morgan Chase offer up to \$1,000 off closing costs for mortgages on new homes that meet the government's Energy Star Program³ requirements.

California energy regulators have adopted a target that all new homes built after 2020 produce as much energy as they consume. This will be done by pursuing a combination of strategies such as: not purchasing energy from the electric or gas grid; use of energy-efficient design; and generating on-site energy thru solar cells or wind turbines. The state will offer financial incentives to promote this initiative.

BUSINESS ATTRACTION

Businesses are looking beyond traditional financial incentives to make more meaningful and socially conscious location decisions. Their decisions are motivated by the knowledge workers who are looking for more than a paycheck and want to be part of a company and place that share their values. This segment of the workforce constantly rejects the sterile suburban office complexes for a jolt of city life and urbanity.

The 2007 Cone Consumer Environmental National Survey reported that 93 percent of Americans believe companies have a responsibility to help preserve the environment, and 85 percent indicated they would consider switching to another company's products or services because of a company's environmentally irresponsible practices. These numbers are too significant for any size business to ignore and present a unique growth and marketing opportunity.



Green Exchange in Chicago: The country's largest sustainable business community is a landmark renovation of a 272,000-square-foot warehouse aspiring to LEED Platinum certification. Green Exchange aims to bring the eco-business industry from niche to mainstream by offering consumers a collection of more than 100 businesses purveying green products and services all under one green roof.

Green Marketing is the promotion or advertising of products and services with minimal negative impact on the environment.⁴ Green marketing allows businesses to use commitment to the environment as a competitive edge in attracting today's well-informed and environmentally responsive customer. Just as companies market their products as fat-free or all-natural, businesses of the future will try to outgreen each other by marketing the size of their carbon footprints. Cadbury and Timberland are interested in labeling their products with carbon emission data. Carbon labeling on Cadbury packaging will list how much carbon is released in the production and delivery of a milk chocolate bar, from the dairy farm to the distribution facility. Wal-Mart Inc is asking its suppliers to cut back on packaging and fossil fuel consumption, and disclose their energy and carbon-emission data.

Edward Jepson, Jr and Anna Haines in *Under Sustainability* published in the Summer 2003 issue of this Journal advocate new sustainable marketing tools. The existing economic development paradigm encourages export base industries that sell outside the community. The alternate sustainable paradigm could encourage businesses that achieve profitability through local sales in addition to export sales.⁵

TOURISM

The primary purpose of tourism is to develop and promote an area's assets to attract new income into the economy and increase land values. Communities and resorts that value the environment can identify and promote themselves to the growing number of "eco-tourists"

who yearn to experience nature. "Recent research has shown that nature-focused tourism is the most important source of self-generated revenue for protected area systems in countries like Ecuador, Peru and Bolivia," notes Andy Drumm, senior ecotourism specialist at the Nature Conservancy. In America, "the rediscovery of the Ivory-billed woodpecker in Arkansas has led to an economic boost for local communities in the area as hopeful birdwatchers have flocked in," says Drumm.

ENTREPRENEURIAL AND SMALL BUSINESS DEVELOPMENT

For small businesses dealing in eco-friendly products, there has never been a better time. Being green provides a competitive edge over bigger non-green corporations – the tax breaks and lower utility bills are a bonus.

Consumers of green products prefer and trust small and local businesses over large corporations. The popular Union Square Greenmarket and other farmers' markets carry food produced only within a limited distance from the city, reducing the carbon footprint while promoting an indigenous product. Shopping local products eliminates the energy expended in transporting the products and provides the consumer with an appreciation of where the resources come from and the environmental costs of production.

The preference for green carries over into the commercial real estate market as well. In Chicago, a four-story landmark manufacturing building was converted in accordance with Leadership in Energy and Environmental Design (LEED) standards established by the U.S. Green Building Council into a green business incubator that offers car share and bike programs to tenants. "More and more tenants are looking for green

For small businesses dealing in eco-friendly products, there has never been a better time. Being green provides a competitive edge over bigger non-green corporations – the tax breaks and lower utility bills are a bonus.



Sky Garden: Green Exchange will feature an 8,000 square foot sky garden as a central gathering place for tenants and visitors alike. The garden is on the second floor of the building and can be accessed directly from the organic café and glass enclosed event space. The various elements used in the creation of the garden will be culled from the most sustainable materials available including recycled paving stones, LED lighting and reclaimed wood decking. Even the water used to irrigate the garden will be recycled as it will come from a 41,000-gallon cistern underneath the garage that is designed to capture rainwater.



In a commitment to fulfilling the 10 visionary goals laid out in its General Plan, the City of Ventura approached its most recent budgeting cycle from the perspective of funding outcomes - not line items - to best fund and achieve goals for a community that is Natural, Prosperous, Well Planned & Designed, Accessible, Sustainable, Active, Healthy & Safe, Educated, Creative, Involved, and for a government that is Accountable.

spaces not only because it's consistent with their values but also because they recognize the economic benefits of being in a green building," says Phil Baugh, director of leasing for Green Exchange. "Evidence has shown that housing a business in a green building can lead to dramatic increases in employee productivity and in retail sales per square foot, and that drops right to the bottom line."

A green business incubator allows like-minded tenants and customers to share and benefit from being located under one roof. "Simply put, building green means you are building a better property for both the tenant and the landlord," says Baugh. "Our rental rates are competitive, but because Green Exchange offers a variety of green benefits, the demand for space is greater. This yields higher occupancy rates at a faster than normal pace and, in turn, creates a positive impact on the developer's return on investment."

Increasing sources of public funds are now available for small businesses involved in environmentally friendly industries and practices. The Department of Agriculture offers a Small Business Innovation Research Program (SBIR) that awards funds up to \$350,000⁶ and the Environmental Protection Agency gives grants to green initiatives.⁷

WORKFORCE DEVELOPMENT

Green for All, a national organization dedicated to building an inclusive green economy, advocates for a national commitment to training, employment, and entrepreneurial opportunities in the emerging green economy for people from disadvantaged communities. Van Jones, founder of *Green for All* says, "for too long, low-income communities and people of color have been hit first and worst by toxic pollution and ecological dis-

asters like Katrina. Meanwhile, they've benefited last and least from new economic growth. An investment in green-collar jobs would help reverse this cycle – by focusing some clean energy job training on those who most need work. Today, our society can create jobs that pay well and honor the environment – thereby fighting poverty and pollution at the same time."

Green-collar jobs involve manual work in fields that help the environment, like installing solar panels, weatherizing buildings, making bio-fuels, and maintaining wind farms. In Oakland, CA, the nation's first city-funded Green Jobs Corps is poised to train and employ at-risk youth and people with barriers to employment for a variety of green-collar jobs that heal the environment.

If residents do not have the skill sets to apply for jobs created by new or growing businesses located within their community, they are forced to travel elsewhere and

the businesses must import workers from outside – adding trips to the transportation systems. Welfare recipients and those unable to drive, who represent half the population and include the very poor, those under 18 years of age, and older people, cannot get to work and support services due to gaps in the transportation systems. Economic development practitioners must take an active interest in enhancing mobility options of their workforce by working with employers and transportation providers to ensure effective and timely access. Strong linkages must be established between economic development activities and education and training systems so residents can find employment closer to home, preferably within the same community.

Businesses that locate within a community after receiving incentives must be asked to get involved in developing the workforce that will be necessary for the business as it grows and matures within the community. Farmers Branch, a suburb of Dallas, developed a sales tax exemption program that allows a company to utilize the city's tax-exempt status to purchase equipment. The city holds a possessory interest in the property until the company chooses to replace the equipment.

"The development of this program was a key factor in attracting the relocation of Chase Manhattan from New York City to Farmers Branch," says Norma Nichols, economic development director. The program has increased the local tax base with a large capital project, provided necessary technology to the local school district and community college, and has created 1600 value added jobs. "Within the last three years, numerous computers have been put into use by the school district and local college that makes them available to students who may not have the equipment at home," notes Nichols. The city offers the equipment to minority businesses as well.

GLOBAL MARKETS

India and China have opened up their economies and are clocking in double-digit GDP growths. Their demands on energy are increasing. This is their time to grow and they are not likely to cap their growth based on CO2 emissions. To compete in the new world economy, America can use its current wealth, position, and influence to invent clean and green alternatives that will fuel the next green economic revolution and help America reclaim its moral ground and economic dominance.

CONCLUSION


We must retool to a new and better way. While this is a daunting task, it is also an unprecedented opportunity to innovate and create lasting value. Businesses that act now could reduce risk and find competitive advantage, improving profits while creating a social good.

Manufacturing industries have polluted the earth for a long time. Due to global outsourcing, manufacturing jobs have consistently declined in the last decade. The manufacturing sector can be revived by focusing on closed loop businesses (Industrial Ecology) that offer products and services that heal the earth.

John Ballbach, managing partner of the Cleantech Group says, "The promise of Cleantech is not only one of the greatest wealth generation opportunities of the 21st century, but the most powerful engine to drive ecological progress. Over the last 5 years, venture capital investments in the Cleantech category have increased 253%."

Preserving the environment needs to be at the core of any business strategy. Green initiatives allow businesses to tap into customer loyalty while reducing cost and liability. Dan Esty and Andrew Winston, authors of *Green to Gold*, remind us that companies that have a good product at a good price, and then offer environmental benefits, like Toyota's hybrid gas-electric Prius, increase their market share and cash flow. They advocate a market-based rather than a government led approach. The

private sector's innovation and technology based solutions together with public sector taxing and incentive policies can result in unprecedented job creation which will address some of our most pressing environmental challenges. Every business needs to find its own "Prius" and get it to the market soon.

The promise of a green economy is a convenient remedy to the inconvenient truth of \$4 a gallon gas and looming global warming impacts. The 21st century economy will be structured around the "green revolution". Are we ready? 

ENDNOTES

- 1 The 2008 IEDC report on *Forty Years of Urban Economic Development: A Retrospective*, points out that economic development activity: has not been effective in land use policy, creating sprawl; has not focused on housing, which is surfacing as a challenge in many cities; and has not sufficiently engaged in urban issues and urban neighborhoods.
- 2 The Form-Based Codes Institute is a group of multi-disciplinary practitioners involved in setting standards for the practice of form-based coding; education and outreach; and creating a forum for discussion about and advancement of form-based codes. More information posted at www.formbasedcodes.org
- 3 Energy Star is a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy focused on saving money and protecting the environment through energy efficient products and practices. More information posted at www.energystar.gov
- 4 Polonsky, Michael, *An Introduction to Green Marketing*, Electronic Green Journal, Volume 1, Issue #2, November 1994.
- 5 Jepson, Edward, Jr., AICP, and Haines, Anna, *Under Sustainability*, Economic Development Journal, Summer 2003.
- 6 USDA SBIR awards funds for research and development projects that allow small businesses to explore their technological potential and provide an incentive to profit from the commercialization of innovative ideas. More information posted at www.csrees.usda.gov/fo/sbir.cfm.
- 7 The Environmental Protection Agency (EPA) participates in the SBIR Program established by the Small Business Innovation Development Act of 1982. More information posted at www.epa.gov/ncer/sbir/.

THE ECONOMIC DEVELOPMENT RESEARCH PARTNERS PROGRAM (EDRP)

— Designated for Innovative Leaders in the Economic Development Community —

The Economic Development Research Partners Program (EDRP)

is specifically designed to serve the Economic Development professional weather the challenges of globalization that have been threatening our communities in recent years.

AIMS OF THE EDRP

Through the EDRP Program, IEDC is taking its mission to a new level, assisting practitioners to successfully compete in the global economy and increase prosperity for communities at an accelerated pace, empowering ED professionals to better define their vision and voice.

Methods and Benefits of the EDRP Program

The Partners will meet 2 to 4 times a year, sometimes with experts in the field, to coordinate activities and focus agendas on pertinent and practical issues.

The \$5,000 annual membership fee also includes:

- 1 year standard IEDC membership
- 8 individuals on the EDRP roster
- acknowledgement on the IEDC website, conference programs, etc.
- access to data
- VIP networking opportunities

This is an incredible opportunity to strengthen the communities in which we operate, and the profession as a whole.

For further information on membership details, please

contact: Mary Helen Cobb,
Director of Membership and Development at
202-942-9460
or mcobb@iedconline.org



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IEDC would like to give special thanks to sponsors of the 2008 Building Cutting-Edge Public-Private Partnerships conference in Charlotte. Your generous support enabled IEDC to bring economic development professionals together with experts from the real estate industry for peer-networking, informative sessions and valuable insight into how we can make successful public-private partnerships happen. The first ever Building Cutting-Edge Public-Private Partnerships conference was a tremendous success that would not have been possible without the contributions of our valued sponsors. Thank you for your support and we look forward to a continued partnership for a better economic future.



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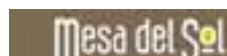
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NEWS FROM IEDC

WHAT'S YOUR PROFESSIONAL DEVELOPMENT PLAN?

Our 2008 course lineup meets the needs of economic developers at all levels.

What can IEDC's professional development training courses do for you?

- Become a Certified Economic Developer (CEcD)
- Keep current and maintain your CEcD certification
- Boost your knowledge of specific topics

On November 6-7, IEDC offers its Entrepreneurial and Small Business Development Strategies training course, which will identify the tools needed to create a climate that caters to small businesses. In addition, the course will cover the characteristics of entrepreneurs and small business owners, the barriers they face, and how communities can promote their development. Leading economic development professionals – Erik R. Pages- EntreWorks Consulting and Patricia Williams, CEcD- Callouch/Williams & Associates – will teach the course in Baltimore, MD.

REGIONAL PARTNERSHIP EARNS AEDO ACCREDITATION

IEDC announces the new accreditation of the Cabarrus County Regional Partnership of Kannapolis, NC, and the reaccreditation of the Virginia Beach Department of Economic Development, through the Accredited Economic Development Organization (AEDO) program. Both display the professionalism, commitment to economic development, and technical expertise deserving of the honor.



The organizations join 22 economic development organizations recognized nationwide for excellence in economic development. Maintenance of the AEDO status is required every three years. For more information on AEDO, contact Liz Thorstensen (ethorstensen@iedconline.org)

2008 ANNUAL CONFERENCE

October 19-22, Atlanta, Georgia

Set in Atlanta, GA, this year's Annual Conference is incorporating new and exciting formats into the conference.



Arrive early and take advantage of the opportunity to participate in Town Hall Forums based on community geography. Broken down by urban, suburban, and rural, these forums set the stage for participants from communities of similar geographies to discuss mutual challenges and learn about successful strategies employed by other communities.

Venture into the back of the exhibit hall in the Grand Hall to participate in hour-long interactive presentations from leading speakers in the economic development industry. Sessions will showcase best practices, new trends, and unique programs in economic development.

Join IEDC for four power-packed days of sessions, educational tours, exhibits, special events and networking with peers from across the country and around the world.

IEDC CO-HOSTS WORKING SESSION ON CHINA FOREIGN DIRECT INVESTMENT

IEDC co-hosted a recent working session on barriers to inward investment from China with the Department of Commerce's Invest in America agency. High-level officials attended from the Departments of Homeland Security, State, Commerce, and Treasury, along with core business members of the China General Chamber of Commerce-USA (CGCC-USA) and several IEDC members practicing investment attraction at the state level.

The meeting's aim was to facilitate dialogue on current US federal policies and practices which are perceived as inhibiting the free flow of inward Foreign Direct Investment (FDI) from China. This marks our second event with CGCC-USA. We hope to continue expanding our connections with Chinese counterparts.

IEDC TEAM VISITS CEDAR RAPIDS

IEDC sent an advisory services expert panel to Cedar Rapids, Iowa July 8th and 9th to assist in the economic recovery from the June flood. IEDC Vice President Ed Gilliland CEcD, was joined by John Zakian CEcD, Sue Southon FM, and Mickie Valente. The purpose was to provide economic recovery assistance, focusing on what the community can do for itself, how it can work effectively with federal agencies and the state, and what will remain as funding gaps following government assistance. The team focused on small businesses recovery; cultural facilities and human service organizations; the downtown plan; the City strategic plan; the roles for the City, Chamber, Downtown BID, and regional EDO, Priority One; and communications strategy.



By August, the City, Cedar Rapids Chamber of Commerce, and regional EDO, Priority One and their partners had already begun to implement most of the team's recommendations. The IEDC effort was sponsored by the Business Civic Leadership Council (BCLC), an affiliate of the U.S. Chamber of Commerce.



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CALENDAR OF EVENTS



IEDC sponsors an annual conference and a series of technical conferences each year to bring economic development professionals together to network with their peers and learn about the latest tools and trends from public and private experts. IEDC also provides training courses throughout the year for professional development, a core value of the IEDC. It is essential for enhancing your leadership skills, advancing your career, and, most importantly, plays an invaluable role in furthering your efforts in your community.

For more information about these upcoming conferences and professional development training courses, please visit our website at www.iedconline.org.

CONFERENCES

2008 Annual Conference

October 19-22, 2008
Atlanta, GA

2009 IEDC Leadership Summit

January 25-27, 2009
Tempe, AZ

2009 IEDC Spring Conference & International Association of Science Parks World Conference

June 1-4, 2009
Raleigh, NC

2009 Annual Conference

October 4-7, 2009
Reno, NV

TRAINING COURSES

Economic Development Credit Analysis

October 6-8, 2008
Butte, MT

Economic Development Strategic Planning

October 9-10, 2008
Anchorage, AK

Real Estate Development and Reuse

October 16-17, 2008
Atlanta, GA

Entrepreneurial & Small Business Development Strategies

November 6-7, 2008
Baltimore, MD

Business Retention and Expansion

November 17-18, 2008
New Orleans, LA

CERTIFIED ECONOMIC DEVELOPER EXAM

January 24-25, 2009
Tempe, AZ
(Appl. Deadline: November 24)

RECERTIFICATION FOR CERTIFIED ECONOMIC DEVELOPERS

Fulfill a recertification requirement without tapping into your budget!

Earn two credits towards your next recertification by having an article published in the

Economic Development Journal, IEDC's quarterly publication.

This is one of a number of ways that you can pursue recertification credits. Submissions are accepted throughout the year. The Journal Editorial Board reviews all articles and determines which articles are accepted for publication.

For more information contact Jenny Murphy, editor, at murp@derols.com (703-715-0147).



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a unique partnership

PROTECTS DEFENSE ECONOMY & ECOSYSTEMS

By Kay Rasmussen



Photo Credit: TNC

Vast vibrant timberlands and ecosystems are preserved by drawing upon the skills of the entrepreneur, the power of the government and the passion of the individual, with all being directed by the knowledge of science.

Established in 2001 under the umbrella of a State of Florida Defense Infrastructure Grant, the Economic Development Council of Okaloosa County, Florida (EDC), the Okaloosa Board of County Commissioners, and Eglin Air Force Base gave birth to the Greenway. These three founding partners formulated the unique idea of this protective beltway in order to achieve many similar goals. This original 2001 \$75K state grant provided for a comprehensive assessment involving all related communities and counties in Northwest Florida, leading to common projects that benefit the region while improving the value of the Eglin range for future military missions. The Northwest Florida Greenway project was intended to protect and sustain existing military lands and airspace, support defense testing and training, promote continued targeted industry growth and business

retention, preserve environmental quality and biodiversity, maintain the economic viability of timber lands, and create additional recreational activities – **All** of this accomplished by protecting a corridor of undeveloped land.

The Defense Infrastructure Grant Program offered through the state of Florida provides funds to communities that host military installations through a grant application process. Considerations for a community to be a grant recipient include the ability to increase base efficiencies, dual-use opportunities with the civilian communities, economic impact, cost factors, and community involvement. This instrumental grant process was the basis that the three founding partners utilized to analyze and document the needs of Eglin Air Force Base and Hurlburt Field in regards to their missions and encroachment threats as well as the communities' needs for environmental protection and recreational activities.

The main objective of this comprehensive assessment was to identify the geographic area of interest (AOI) and assess the feasibility of establishing a buffering greenway. Northwest Florida is

Kay Rasmussen is the director of defense & economic initiatives, Economic Development Council of Okaloosa County, Florida. (kayr@florida-edc.org)

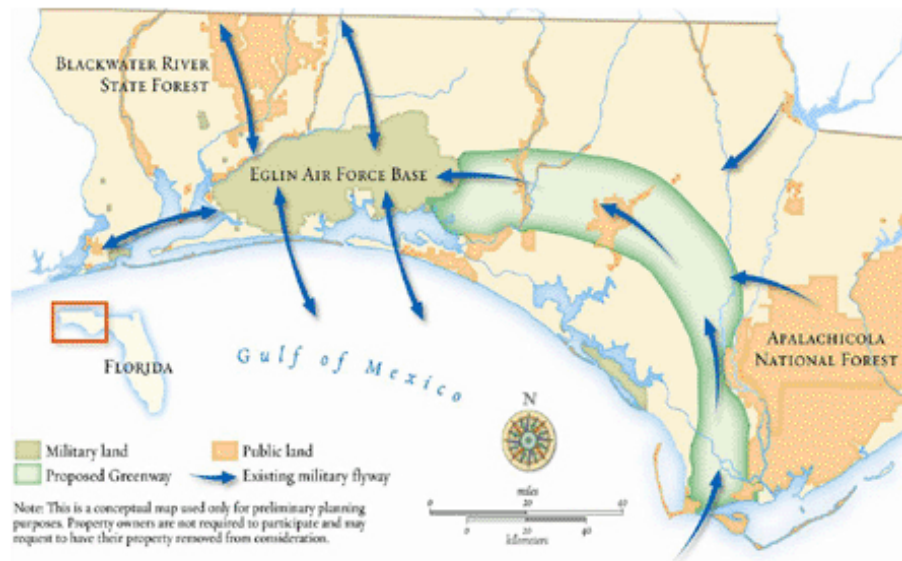
THE NORTHWEST FLORIDA GREENWAY

With the growing needs of our population and our national security, the Northwest Florida Greenway is providing a very valuable and mutually beneficial answer to preventing encroachment. Encroachment can be defined as the act of entering gradually or silently upon the rights or possessions of another. Depending on your point of view, civilians (non-military) can view the Armed Forces as encroaching onto their housing and commercial developments and the military can view the civilians as encroaching into their land, air, and sea defense ranges. The Northwest Florida Greenway is a beltway of encroachment protection for both military and non-military needs and values.

most commonly known as being comprised of the 16 counties extending from Florida's western border with Alabama east into Jefferson County. To fully address options for achieving the desired greenway range expansion capabilities, it was necessary to extend the area of interest to include gulf coastal areas of three counties in Florida's "Big Bend" region: Taylor, Dixie, and Levy. The AOI definition was driven by three objectives: 1) buffer installation and land range boundaries to provide expanded geographical safety margins for operations conducted on the existing range, 2) preservation or expansion of existing corridors for access to and egress from all military ranges and airfields, and 3) establishment of new remote impact areas or corridors. Based on these three objectives, range expansion and buffering were determined to be feasible.

Despite being deemed feasible, the assessment discovered that although all parties involved were willing to explore ways to improve military buffering and environmental protection, the knowledge of the requirements varied. Additionally, there was no access to an integrated picture of the AOI and no single department or entity identified to address all of the requirements. It was recommended to establish a regional growth management identity to proactively address the requirements for current and future defense needs in Northwest Florida.

In 2003, after completing its comprehensive assessment, the Okaloosa EDC presented the idea of the Greenway to The Nature Conservancy, which then joined the project team. Now the four partners in the project team struck out to collaborate on proactively identifying common projects benefiting the region and improving the value of the military range missions by protecting and sustaining existing military lands and airspace, supporting defense testing and training, preserv-



The Northwest Florida Greenway footprint of the planned 750,000-acre conservation corridor.

ing environmental quality and biodiversity, maintaining the economic viability of timber lands, and creating additional recreational activities. The plan, with an estimated cost between \$200 million and \$300 million, was for the state and federal governments to buy property but mostly obtain conservation easements – paying owners a relatively small amount not to develop their land. The easements would allow for uses such as growing timber and outdoor recreation. The scope of work for the project team was protecting a contiguous corridor of undeveloped land between the Eglin Air Force Base Range and the Apalachicola National Forest, now known as the Northwest Florida Greenway – an unprecedented partnership making history.

With the assistance of multiple state of Florida awarded grants, the Northwest Florida Greenway has evolved into an unprecedented partnership of military, government, and non-profit organizations that will protect the military mission in Northwest Florida while enhancing the Panhandle's economy and conserving critical ecosystems in one of the most biologically diverse regions in the United States. This first comprehensive assessment developed the foundation that the Greenway still builds upon today.

PARTNERS

These four seemingly dissimilar partners have very similar interests. The Economic Development Council of Okaloosa County, Florida (EDC), is a not-for-profit public-private organization which exists to promote economic strength, diversity, and development. This includes the retention and expansion of existing industry as well as targeted industry recruiting. The military presence in Okaloosa County is the number one economic contributor. In a January 2008 Florida Defense Industry Economic Impact Analysis conducted by the University of West Florida's Haas Center for Business Research and Economic Development, the military impact on Okaloosa County is measured to be just under \$7 billion annually.

The Economic Development Council of Okaloosa County, Florida (EDC), is a not-for-profit public-private organization which exists to promote economic strength, diversity, and development. This includes the retention and expansion of existing industry as well as targeted industry recruiting. The military presence in Okaloosa County is the number one economic contributor. In a January 2008 Florida Defense Industry Economic Impact Analysis conducted by the University of West Florida's Haas Center for Business Research and Economic Development, the military impact on Okaloosa County is measured to be just under \$7 billion annually.

The economic viability of the region depends on the military. While other economic sectors may experience temporary downturns, the region's military installations continue to be the prime generators of the economy. There is a direct and indirect economic value resulting from this military presence. There is the active military personnel themselves, their spouses, and children; the civil service employees and their families; the retired and otherwise separated military personnel and their families; and there is the abundance of technical aerospace and aviation type businesses that have located in the county in order to engage in contracts with Eglin AFB and Hurlburt Field. It is because of this military presence and its economic contribution that the EDC focuses on the development of the technical, aviation and aerospace industry sectors in its mission for sustaining Okaloosa's business retention, growth, and prosperity.

As with many military installations, Eglin Air Force Base officials have been looking for ways to positively prevent encroachment onto their base from the neighboring towns and cities' development of adjacent land. Land development can also encroach into their planes' fly zones which are needed for military missions, testing, and training. The Department of Defense takes into consideration the private communities' safety when conducting military missions and a safety footprint, a safe zone, is required around the test area. Encroachment into their workspace could jeopardize their capabilities and success in providing our national security.

Eglin and Tyndall Air Force Bases, and Hurlburt and Whiting Fields are part of one of the nation's largest open-air military testing and training areas known as the Joint Gulf Range Complex. These northwest Florida military installations are all part of the Northwest Florida Greenway partnership. The Joint Gulf Range Complex has a strategic plan to maximize the capability of the unique air, land, and sea resources that exist in the Northwest Florida area through a collaboration of the various multi-service military installations strategically positioned there. Buffering or encroachment prevention is part of that plan.



The cost of not providing buffering is that both of Florida's military and ecological value could be seriously compromised. The footprint of the conservation corridor provides safe fly-space for the military planes.



Photo Credit TNC

The Eglin Air Force Base reservation is a vital resource for the military, Florida's economy and wildlife.

Numerous endangered species find refuge in the Greenway's conservation corridor.

The Eglin land range consists of 724 square miles across three counties. In addition to serving as a location for conducting military missions, these ranges also contribute to the area's quality of life by providing recreational activities such as hunting, fishing, camping, hiking, and bicycling. Eglin AFB is a very successful steward of the environmental health and sustainment of plant and animal life on its land reservation. Following the 2005 BRAC Commission, Eglin AFB created its growth management plan *Vision 2015*. The idea behind Eglin's *Vision 2015* is *Together-We-Win*. In other words, Eglin AFB and the surrounding communities can accomplish more working together than working apart. Working together they both win; we all win; together we win. Incorporated into its *Vision 2015* is Eglin's plan for protecting its air, land, and sea buffering zones while simultaneously protecting environmental habitat and providing recreational activities, all supported by and encompassed in the Greenway's conceptual plan.

The Nature Conservancy has long recognized the preservation value of the land in Northwest Florida. With its immense biological diversity, the Panhandle of Florida is known as one of the last great wilderness spaces in Florida. The Nature Conservancy's mission is to preserve the plants, animals, and natural communities that represent the diversity of life on earth by protecting the lands and waters they need to survive. In order to fulfill the Greenway's environmental protection component, TNC serves as the Greenway's primary environmental steward.

NORTHWEST FLORIDA GREENWAY CHARTER

The Northwest Florida Greenway charter is to help identify and prioritize land preservation and conservation opportunities that will protect the land and air space corridors in the region. The goals of the project team include:

1. Strengthen the regional economy by sustaining the military presence and enabling defense contract awards with local civilian defense contractors, and enhancing tourism and recreational activities.
2. Promote the sustainability of the military missions in northwest Florida to meet national defense testing, and operational and training requirements as outlined in the Joint Gulf Range Strategic Plan.
3. Protect lands that will sustain the high biodiversity of the region, link protected natural areas, preserve water resources, and provide areas for outdoor recreation including the Florida National Scenic Trail.

MEMORANDUM OF PARTNERSHIP

In November 2003, a benchmark event occurred for this one-of-a-kind partnership. Then Florida Governor Jeb Bush, the United States Department of Defense, and The Nature Conservancy signed a groundbreaking Memorandum of Partnership to establish a 100-mile protected corridor spanning northwest Florida, connecting Eglin Air Force Base and the Apalachicola National Forest. This agreement reserved the first 7,597 acres of the planned 750,000-acre corridor.

"Florida is among the first in the nation to join forces with the Department of Defense to increase security for important military installations while at the same time protecting valuable natural resources." Governor Jeb Bush.

MEMORANDUM OF AGREEMENT

The July 1, 2004 Memorandum of Agreement, the first of its kind, was a second step to the November 2003 MOP and further united Florida's military and environmental missions. The Memorandum of Agreement allowed the participating parties the ability to protect the Northwest Florida Greenway and prevent incompatible development through acquisition of conservation easements in the corridor. The protection provided by this MOA would prevent development encroachment on military operations, protect the region's biodiversity and water resources, link existing protected areas, provide recreational opportunities, and help support the economic health of the region.

These historic Northwest Florida partnerships proved to the nation that we can have a strong national security and defense while protecting our natural environment. This federal, state, and local commitment to preserve 100 miles of open space linking the Apalachicola National Forest with Eglin Air Force Base recognizes common interests in safeguarding critical conservation lands and military air space.

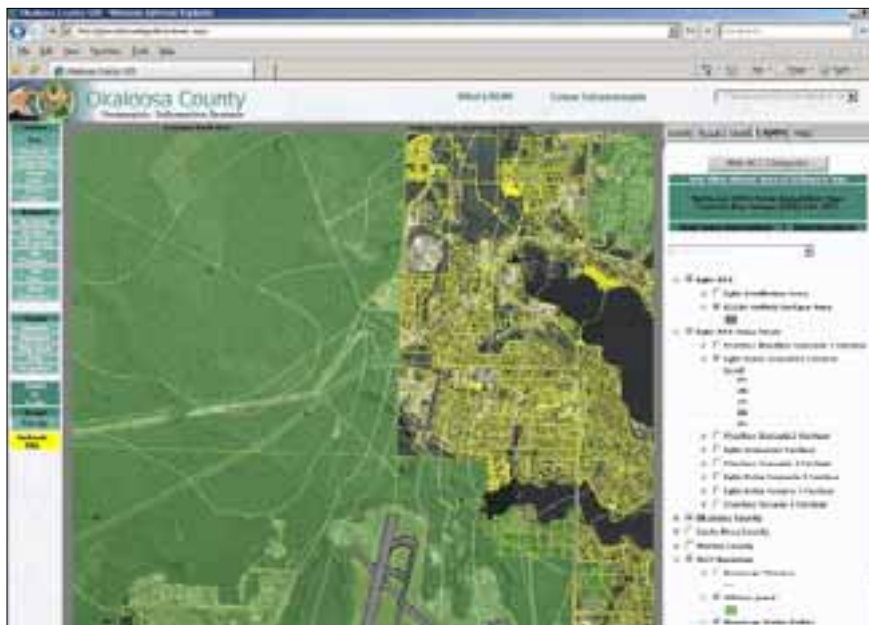
Following this MOA, President George Bush proposed \$20 million to support encroachment buffering efforts nation-

wide for the next fiscal year. In his budget message, the President mentioned the Northwest Florida Greenway as a model for the program.

STRENGTH IN NUMBERS

Through the partners' dedication, more and more information was being disbursed on the multi-beneficial protection corridor through media sources, town hall meetings, and public sector forums. As a result of getting the word out on the Greenway's concept and intent, additional entities joined in the partnership process for this protection initiative. Joining the original founders and providing immeasurable strength in numbers were the Florida Department of Environmental Protection, Florida Forever, the U.S. Fish and Wildlife Service, U.S. Forest Service, Florida Department of Community Affairs, Florida Fish and Wildlife Conservation Commission, Northwest Florida Water Management District, and the Florida Department of Agriculture and Consumer Services' Division of Forestry.

In 2005, a project advisory board comprised of representatives from these organizations was established to ensure efficient and effective completion of the objectives. The Economic Development Council of Okaloosa County, chair of the advisory board, engaged the University of West Florida's Haas Center to conduct a comprehensive assessment involving all related communities and counties in Northwest Florida to determine how they could participate on common projects that would benefit the region, while improving the value of the Eglin range for future missions. The EDC also engaged SimWright, Inc., an image processing and software development firm, in conjunction with the Okaloosa County GIS department to identify layers within the Greenway for conservation. A resultant data-



A state grant awarded to the Economic Development Council of Okaloosa County provided funding to develop a multi-layered GIS database portal to monitor the lands within the Greenway's footprint.

Photo Credit Okaloosa EDC

base has been developed and resides with the Okaloosa County GIS department. Both of these supportive assessments were conducted based on the following tasks:

- Define the Air Force's geographic area of interest (AOI) relative to northwest Florida.
- Research Joint Gulf Range needs relative to sustaining and expanding current capabilities and translate into geo spatial accurate maps.
- Research the AOI to establish a baseline understanding of federal, regional, county, and local government entities and processes associated with use of land, water, and airspace, as well as private and public sector entities and processes associated with use of land, water, and airspace.

One of the main challenges throughout this seven-year process has been developing the thinking-outside-of-the-box concept and then educating and obtaining consensus on that concept. Small one-on-one meetings were held along with town forums and production of information materials.

- Develop databases (electronic and document repositories) associated with ownership and use of land, water, and airspace as well as major development activities such as new airports and housing complexes.
- Define requirements and action plan for implementing a shared Geographic Information System (GIS) that integrates all data needed to support implementation and sustainment of a regional approach to enhancing defense contribution to economic development.
- Assess feasibility of achieving the Air Force's desired enhancements to the Joint Gulf Range Complex. This includes options for creating new air corridors for access to land ranges and new impact areas both land and water.

RESULTS

One of the main challenges throughout this seven-year process has been developing the thinking-outside-of-the-box concept and then educating and obtaining consensus on that concept. Small one-on-one meetings were held along with town forums and production of information materials. Now with so many powerful partners supporting this remarkable initiative, the completion of that original vision to conserve a 750,000-acre corridor is on the horizon, hopefully within the next 5-10 years.

A database portal has been successfully developed by SimWright, Inc. through a contract with the Okaloosa EDC that allows leverage of multi-county GIS databases

and results of joint land use studies. This database resides with the Okaloosa County GIS Department and will support integrated growth management planning by the Air Force, local governments, and state agencies.

When the three original founding partners approached The Nature Conservancy with this buffering corridor concept, one of their objectives included TNC taking a proactive lead with the project. TNC's accomplishments have been especially important, given the hold on state funding due to budget restraints. Its efforts have contributed to the successful growth in federal funding and increased advocacy for the program. TNC was an active advocate for the Florida Forever Bill which was passed in 2008. This bill allocates \$300 million per year for conservation up through 2020, and will be utilized in part to complete the buffering corridor.

Another advocacy role that TNC took on was one of promoting and supporting the 2008 Defense Appropriation for the Readiness and Environmental Protection Initiative (REPI), which was authorized at \$46 million.



The Eglin land range consists of 724 acres across three counties and in addition to a location to conduct military missions these ranges also contribute to the area's quality of life by providing recreational activities such as hunting, fishing, camping, hiking and bicycling.

As awareness of encroachment issues at military bases increases, the competition for these dollars will grow. The Conservancy will continue to support NW FL base applications for REPI funding and partnership support of those land acquisitions.


At the time of this article's publication, TNC was still heavily engaged in educational and outreach activities to include working with the Florida Defense Alliance, the U.S. Forest Service, Northwest Florida Transportation Corridor Authority, and 1000 Friends of Florida. TNC has also played a key role in outreach programs with

local governments and landowners throughout Northwest Florida in the areas of interest. This has included partnering with Eglin AFB and other military installations to host workshops focused on common interests of conservation and compatible use of land, sea, and air space.

Today, The Nature Conservancy continues to move forward with the state to complete the corridor's land acquisition and conservation easements. This includes utilization of grant military base buffering funds for land acquisition efforts, ecosystem management efforts, and partnership activities.

The unique partnership to protect the defense economy and ecosystems still has both challenges and opportunities ahead of it in order to complete the project. However, successful land acquisitions and private landowner donations have resulted in approximately one quarter of the 750,000 acres being preserved. Some of the lands within the boundaries of the Greenway corridor were already protected prior to this initiative. Some belonged to conservation owners and are considered safe from development, but still need protection in the case of

an impending sale. The acreage left to protect is a step-by-step process acquiring land as it becomes available.

Millions of dollars, countless man-hours, and endless passion and dedication are what make up this successful unique partnership among the military, environmentalists, and business and governmental leaders resulting in the first-ever collaboration for a beltway of defense economy and ecosystems encroachment protection, better known as the **Northwest Florida Greenway**. 

Today, The Nature Conservancy continues to move forward with the state to complete the corridor's land acquisition and conservation easements. This includes utilization of grant military base buffering funds for land acquisition efforts, ecosystem management efforts, and partnership activities.



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social capital

By John P. Blair and Michael C. Carroll

Local economic development practitioners recognize that social relationships and networks can shape local economies. Yet academic research is only starting to incorporate social resources into economic development practice. The emerging concept of social capital promises to be a useful tool towards this end. An appreciation of how social capital affects local economies should be part of every practitioner's tool kit.

The article first describes the concept of social capital. The second section shows how social capital can strengthen various economic development strategies at the local level. The final section discusses the practical issues of building, managing, and using social capital.

AN EMERGING TOOL

The term "social capital" is newly coined, but most economic development practitioners will grasp the concept intuitively because they regularly use it. According to the popular book, *Bowling Alone*:

"Social capital ... refers to features of social organization, such as trust, norms and networks, that can improve efficiency of society by facilitating coordinated actions" (Putnam, 1993).

Since economic development processes largely involve coordinating individuals and groups towards tasks like attracting a new business and improving the business environment, it is clear that assimilating an understanding of social capital into local development concepts can be a vital part of the economic developer's tool kit.

Both bonding and bridging social capital have been identified. Bonding social capital unites individuals within a group or network. Bridging capital is reflected in the ability of groups to form coalitions. Social capital also can help overcome vertical barriers that make it difficult for individuals and groups with unequal social status or power to work together. For instance, a small business person



The Appalachian Center for Economic Networks is an economic development organization serving the Appalachian region of southeastern Ohio. While sharing space in an incubator, ACEnet businesses have developed social capital that facilitates joint marketing and production efforts, provides access to a common labor pool, and assists in distribution activities.

may be able to talk with a CEO of a large corporation if they are both in a social capital rich network such as a community improvement organization.

How Social Capital Works

Social capital helps local economies in three important ways. First, it reduces the costs of market transactions by lowering negotiating and monitoring costs. It is more convenient to work with someone you trust rather than dealing with someone you don't know. The less standardized the job, the more useful social capital may be. Second, social capital may replace money exchange when

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A LOCAL DEVELOPMENT TOOL

This article focuses on the role of social capital in local economic development practice. The ability to use social capital is an increasingly important element in the local developer's tool kit. Applications to such issues as innovation, the quality of life, micro credit, globalization, informal economic activities, the social economy, and conflict mediation are presented. The article also discusses building and managing local social capital.

individuals believe that one favor will be returned at some unspecified time. Third, social capital can mitigate the negative economic effects of non-market transactions. For example, pollution, excessive noise, and other offensive behaviors occur because the perpetrators (polluters) don't know and/or don't care about the victims. Such attitudes are less likely in environments where individuals are part of dense networks bound by shared values, trust, and reciprocity.

Measuring Social Capital

The emerging academic interest in social capital theory has led to attempts to quantify it at the local level. Researchers have administered questionnaires that identify attitudes regarding trust, reciprocity, community norms, civic engagement, and so forth. Answers were indicators of social capital organizations with high levels of interaction and trust among members and where



Officials at Good Samaritan Hospital in Dayton, OH, recognized that a social capital-led development strategy could contribute to neighborhood stability.

respondents feel they are an important part of the group, indicating high levels of social capital. While the terminologies used in the various studies differ slightly, it is clear that the same closely related set of attitudes is being identified. These attempts at empirical measurement represent credible "first steps" towards making a rather fuzzy concept more concrete.

Other researchers have developed computer programs to "map" social networks by showing how various individuals interact. For instance, a survey could determine where members of the local merchants association receive their information. From these graphical representations and related statistics, practitioners can gather a better picture of the composition of groups and the relationships among groups. This information will help insure that the right people are at the table.

Effective economic developers normally think in social capital terms even if they do not measure it in a textbook fashion or use social capital language. They think in terms of organizational cohesion, influential

persons, and linkages among organizations when attempting to develop and implement economic development strategies.

Academic Acceptance of Social Capital

Economic development practitioners are building the concept into their plans and actions. However, social capital has been accepted grudgingly if at all by many mainstream, academic economists because social capital does not fit traditional economic ways of thinking in three ways.

First, the effectiveness of social capital depends upon the context in which it is employed. A group's ability to mobilize social capital may depend upon which other groups bring the issue to the table, how the issue is presented, what other issues face the community at the time, and so forth. Also, it is difficult to predict the amount of social capital needed to achieve an end. In some circumstances, using less than a particular measure of social capital may be ineffective and using more than that measure may be redundant. As a result of contextual dependency, social capital does not lend itself to traditional mathematical modeling techniques which are stock in trade for many economists. Efforts to reduce social capital to a variable in an equation come at the cost of ignoring the qualitative dimensions that give power to the idea.

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Another reason for resistance to social capital is that resources are usually viewed primarily as a means to other ends. Social capital not only enhances productivity, but also improves the quality of life. Dealing with people who share social capital is integral to developing a sense of community and valued in and of itself. Economic and community development practitioners are aware of the value placed on the sense of community. The value of the direct benefits from social networks (values as a consumption good) may outweigh its benefits as a means.

A third distinguishing feature of social capital is that once created, it cannot easily be transferred or exchanged through market processes. For instance, if people have built trust or good will within a group, they cannot sell it to someone, even if that person is already well integrated into the group.

APPLICATIONS OF SOCIAL CAPITAL IN LOCAL DEVELOPMENT

Economic development strategies can be enhanced when practitioners use social capital as part of policy implementation. Practical applications can be facilitated by an appreciation of how social capital contributes to specific development strategies. This section describes some popular economic development approaches and shows how social capital can be useful to economic developers.

Innovation

Innovation strategies include entrepreneurial development as well as efforts that focus on large businesses such as cluster based programs. Sometimes innovation studies focus on technologies but better ways to treat customers, employee management practices, market development, and so forth are also important. Serendipitous as well as calculated mergers of ideas and practices from a variety of fields combine to create innovations. These connections are more likely to be discovered when social networks include many, diverse interactions among members. Accordingly, productive social networks are an important part of local innovation (Lorenzen, 2007).

Local innovation depends on the effectiveness of bridging social capital because many innovations are based on cross fertilization of ideas across technologies and industries. Knowledge transfers can be improved when individuals trust one another and are willing to share information. The CONCISE project (The Institute of Health and Social Science Research, 2003) found that institutions are linked largely by individuals who have first established personal relationships through an existing network. Intra-firm employee interactions are affected by social capital built in non work relationships.

With the advent of rapid communications, can the same level of information exchange needed for innovation be achieved electronically? If so, the importance of *localized* social capital in the innovation process would be diminished. However, a recent series of surveys found that while modern communication makes face-to-face contact less important than in the past, it will continue to be significant (GEM City Public Services, 2007).

Personal contacts build trust more quickly than mail, e-mail, or exchanges through third parties. It can be difficult for most people to trust someone they have never met. Also, people evaluate information based on voice tone and body language.

A second reason for believing that social capital will continue to be localized is that contact with persons in non-work environment such as clubs, churches, and civic events builds credibility. Denser local networks lead to a greater number and diversity of conversations that can generate innovations. Business relationships can be reinforced by strong civic networks since trust can be developed by observing how people relate and regard each other even in non business settings.

The ACEnet example shown in the sidebar illustrates the use of social capital in small business innovation and development.

Quality of Life Strategies

Creating a high quality of life can be a goal in itself, but it is also part of other economic development strategies. Improved quality of life can help attract workers, particularly young mobile workers and is critical to resort and retirement-based development strategies. Quality of life also plays a significant role in attracting businesses.

An area's quality of life probably exerts a stronger influence towards maintaining existing populations than attracting new residents. The nature of an area's social capital may not be evident to someone considering immigration. For many non residents, it can only be

SOCIAL CAPITAL AND RURAL DEVELOPMENT: ACENET

The Appalachian Center for Economic Networks is an economic development organization that serves the Appalachian region of southeastern Ohio. It operates an incubator and performs other traditional business development functions such as assisting in the search for venture capital, management training, and writing business plans.

It primarily focuses on small business development in high value added agriculture, arts, and crafts. These are activities that often rely on social networks. However, the isolation created by the mountain topology, the rural environment, and the nature of many small businesses create barriers to network formation. ACEnet has consciously sought to create social capital by building networks among its members. Accordingly, ACEnet has helped create:

- Partnerships for jointly acquiring supplies;
- Cooperative marketing ventures for arts and high value wood products;
- Associations among producers of art, crafts, and some food products with retailers and local restaurants; and
- Clearinghouses and idea exchange sessions.

Most of the organizations created through ACEnet become self perpetuating, but informal. New ACEnet members are brought into these networks based on interests, needs, and personality fits rather than official roles and membership cards.

The development of social capital can be assisted by computer technology. ACEnet has used technology to strengthen networks in several ways including creation of list-serve discussion groups, Web-based seminars, and the use of software packages that enable community organizers to "map" relationships and information flow among members.

Sources: Thomas S. Lyons, "Building Social Capital for Rural Enterprise Development," *Journal of Developmental Entrepreneurship*, August 2002, pp. 1-16 and <http://www.acenetworks.org/>.

roughly inferred from local “ambiance”. After someone is part of a local network or has been excluded from those networks, a more informed judgment can be made about how an individual will be able to build and use social capital. Social capital also contributes indirectly to local quality of life because community cohesion helps mobilize resources to create cultural, recreational, and other amenities.

Micro Credit

Social capital makes micro credit lending feasible. Micro credit practices emphasize making loans to individuals with inadequate resources. Social capital can be thought of as the loan’s collateral (Reinke, 1989). Failure to repay will make it more difficult for other potential borrowers in the network to get loans in the future.

Micro credit practices not only depend on social capital, they also build networks that can be used to further economic development. Once cottage activities are formed, the same, probably strengthened social networks can be helpful in modifying the product, developing alternative production techniques, and tapping new markets. Village or neighborhood workers may share skills, contacts, and other information in ways similar to what is done in advanced technology clusters.

Globalization

Social capital can help regions maintain location advantages, particularly among knowledge-based firms in a global economy characterized by rapid changes in product mix, production technology, and other factors. In this environment, the value of physical plants may decline, rapidly leaving companies little incentive to remain in the area. Such facilities can easily relocate to a lower labor cost area.

Social capital may anchor knowledge-based companies because knowledge employees are not interchangeable parts. Individual employees may not relocate because of the area’s social capital expressed in relationships with neighbors, attitudes toward their children’s school, or the general fit with the community.

When companies fear their top talent may not relocate, they will be more reluctant to relocate facilities. As people age and become more important to their organizations, they also become attached to their local communities, making the facilities more reluctant to relocate.

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Might firms avoid the location orientation of social capital by relying on virtual office technologies to retain high value employees who do not relocate? Virtual office solutions will not work for many enterprises. Firms may risk diminishing their internal social capital by reducing the number of personal contacts, spontaneous encounters, and face-to-face exchanges important to intra-firm networks that also have productive consequences. Thus, intra organizational social capital also anchors establishments. Social capital within a firm may be affected by the nature of the social capital elsewhere in the community.

Informal Activities

The informal economy includes significant (often unrecognized) economic development activities that are not fully accounted for in the formal sector. These activities have less access to traditional legal protections than formal businesses in part because operations tend to evade laws and regulations. Agreements tend to be sealed with a hand-shake rather than a formal contract. Consequently, values and attitudes of trust and reciprocity (social capital) are important to successful operations. Many businesses in the informal economy are able to operate successfully because of how they use social capital.

Consider child care services. In the informal economy, day care may be provided in the home of a friend or relative. The provider may need flexibility in terms of fee structure, hours, services provided, and so forth. Such arrangements can often be established better when social capital exists between the parties. Social networks may operate to reinforce shared norms. For instance, if the service provider was shirking his or her duty, a mutual acquaintance might say something to either the parent or provider.

Social capital operating in the informal economy contributes to business start-ups. Many small enterprises initially operate based on informal arrangements with customers, employees, or vendors. Reputations often spread through a social network (word of mouth), helping the business expand. Many of the fastest growing activities of modern economies – elder care, home cleaning, pet sitting, lawn services – have historically depended upon social capital in the formative stages.

After a start-up phase, some businesses may improve growth prospects by becoming more formal. They will have easier access to capital, marketing channels, and other public and private services. However, the transition to more formal operations will sometimes alter the ability to use social capital. For instance, it may be more difficult to maintain a flexible relationship based on trust with some customers while applying more rigid rules to others. Understanding the nature of the transitions will help local practitioners assist firms.

The Social Economy

Comprehensive economic development plans should not ignore the social economy organizations that have significant economic functions, but are not primarily profit oriented. The size of the social economy has been estimated to be about 10 percent of most local economies and the percentages would be even higher if in-kind grants and transactions were included. Like the informal sector, many activities in the social economy are not adequately documented. Development contributions of the social economy include supporting low income individuals as many church-based organizations do and enhancing household income through such activities as community gardens, local currency plans, and human capital development.

Organizations in the social economy often depend upon social capital to carry-out their activities in part because they have relatively fewer monetary resources. Leaders of organizations in the social economy often have great skill at using social capital because they depend upon volunteer labor and team work to get things done.

Mitigating Economic Development Conflicts

The economic development process generates conflicts among various groups. For instance, property developers sometimes support new roads that are opposed by neighborhood groups. Sometimes these conflicts harm economic development by generating gridlock, involving costly reconciliation processes, or resulting in missed opportunities. When these conflicts arise, they are sometimes resolved based on “what’s good for the community”.

Local economic developers can use social capital to mediate economic development conflicts in at least two ways. First, social capital can be used to provide a forum for dialogue and compromise. Second and more subtle, social capital can be used to construct a community vision or “meta-narrative” that can frame unanticipated conflicts that may arise in the future (Lejano and Wessells, 2006). When specific conflicts can be evaluated in terms of widely shared visions, solutions can be considered within the context of community interest in much the way land use plans reduce some conflicts. However, even when consensus is struck around abstract meta narratives, there will still be disagreements and the need for compromises.

Many communities are rethinking the definition and purpose of economic development. The rethinking is motivated by the realization that useful energy and materials are being depleted and economic and environmental sustainability is threatened. Non polluting and “self actualizing” development paths are appealing. Local social capital will be an important element in community searches for new models of local economic success.

The concept of social capital can also be used to unify the practice of economic and community development. Traditionally, economic development focused on a set of variables that are business oriented while community

CityWide Development Corporation, is a large, non profit economic development organization. It has primarily provided gap financing and other incentives to attract and expand businesses in Dayton, Ohio. When CityWide decided to make a significant investment in the declining Fairview neighborhood, officials realized that strengthening the area’s social capital would reduce barriers to private investment and should precede “brick and mortar” projects. Working in partnership with the city of Dayton and Good Samaritan Hospital, the largest private stakeholder in the area, CityWide began the Phoenix project by learning about the social conditions of the neighborhood, gathering and evaluating existing data, and starting conversations with community organizations.

It hired community organizers to mobilize stakeholders toward developing a mandate for improvement. Organizers met with church leaders, local retailers, city police, neighborhood schools, local social service organizations, and resident associations. Through these efforts and the financial investments of the partners, a strategic vision for change emerged. Working together, these stakeholders provided a variety of resources — time, energy, ideas, and influence as well as money.

Good Samaritan Hospital and commercial businesses recognized that their futures were tied to the revitalization of the area as much as local residents. Their visions may have emphasized different aspects of development, but together they dove-tailed into a consistent image of what the neighborhood could be. Discussions evolved as contacts increased among leaders of various organizations, consensus was built, and social capital grew.

Successful community based actions that contributed to neighborhood viability and further strengthened social capital included:

- A summer job training program for area youth initiated by the Dayton Urban League and Unified Health Solutions,
- Expanded park and pool programming by the city of Dayton Department of Recreation and Youth,
- A community policing program,
- A mini grant program to spur resident-led improvement activities,
- A prayer walk against violence sponsored by a group of ministers,
- A neighborhood newsletter initiated by area residents,
- Grassroots effort to declare drug houses “public nuisances” and efforts to limit liquor sales by local residents, and
- Planning efforts that raised the visibility of the neighborhood.

As social capital has grown, private investment has been encouraged. Other public monies have also been committed to Fairview. As is typical, no “happy ending” can be declared. Recently, the national mortgage crisis resulted in a softer housing market, creating new challenges. However, a new commercial gateway is underway that will help anchor and identify the area and a new PK-8 school will be built in the heart of the redevelopment area. These improvements are expected to attract additional investment. Local observers believe the foundation of a social capital oriented community development is paying dividends.

Source: Steven J. Budd, President, CityWide Development Corporation

development workers concerned themselves with neighborhoods and service programs for disadvantaged groups. These orientations frequently conflict. The recognition of social capital as both a consumption good and a contributor to business development will help

bridge the gap between these areas. The sidebar regarding CityWide's approach to neighborhood revitalization illustrates how local social capital can help make an area a more pleasant place to live while attracting investment.

Social capital can make positive contributions to local economies by improving the performance of both for-profit firms and social economy organizations. Therefore, economic and community development officials are challenged to find ways to create, preserve, and use social capital.

BUILDING SOCIAL CAPITAL

Cultural and historical factors have contributed to the development of social capital. Coleman (1990, p. 313) concluded that, "Most forms of capital are created or destroyed as the by-product of other activities. Coleman's observation could lead to pessimism about the ability of local officials to create social capital.

Institutions and networks that are held together by bonds of trust, reciprocity, and shared values are both repositories and generators of social capital. Once civic and other networks are formed, social capital can be produced much easier than environments that lack such organizations. So it is tempting to assume that if a community has few social capital creating organizations, little can be done to create social capital.

In addition to the "chicken/egg problem, social capital builds very slowly. Its genesis often is in the nano-exchanges such as a smile, nod, or pleasant word. There are only a few instances where someone can identify a moment where social capital was produced. Therefore, creating social capital can seldom be credited to a single action or a single person. People who help develop social capital may not be recognized for their effort.

Most of the production and "consumption" benefits of social capital can be captured even by persons who do not contribute to its development or who do not share the attitudes that measure the presence of social capital. Therefore social capital has important public goods characteristics. As in the case of most public goods, economists recognize the need for public intervention to achieve optimal levels of output.

Governments exert indirect as well as direct influence on the creation of social capital as they pursue other goals such as police protection and land use plans. The CONCISE project reported empirical evidence on the importance of the social economy in generating social capital. Support for local social institutions in the process of economic development practice may strengthen local social capital.

Business expansion and retention studies have been used to bring businesses into community networks. An economic development organization may first reach-out to small businesses, asking questions about plans, needs, and concerns. Successful strategies require quick follow-up so that trust is built and the responding businesses do not see themselves as cogs in a bureaucratic process. Eventually, networks develop and businesses can be brought into other civic processes. Business persons who have volunteered to help in such studies benefit in part by increasing their social network.

In concrete terms, there is no formulaic technique for producing social capital. Economic development and



Residents in Dayton's Phoenix Project area have facilities in which to meet and express their concerns through a neighborhood "priority board" system supported by the city.

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social capital. Economic development and chambers of commerce officials are often at the center of key economic networks and can use these positions to build social capital. "Meet and greet" sessions and appropriate advisory boards are valuable in part because they build social networks. Economic development officials can also support the actions of other civic groups that contribute to an area's social capital.

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MAINTAINING SOCIAL CAPITAL

Social capital does not necessarily get depleted from use. In fact, using social capital under the correct circumstances can increase it. Consider a group of people who come together to build a community center. The project will require groups to work together towards a common goal. Contributors trust that if they put forth effort, others will do their share. Organizations within the community will work with each other; information channels will develop; participants will feel part of a

group. When a project is successfully completed, social capital in the community will likely be enhanced.

While social capital cannot necessarily be depleted from use, it can be lost or diminished in several ways. First, organizations may undertake a project beyond their abilities. In some cases, the overwork or lack of success will weaken social bonds. Individuals may be unwilling to commit to future projects with the same people. When the tasks are unrealistically excessive, some parties may feel that others are not doing their share, weakening the bonds of reciprocity and trust. Thus, policy makers should match the means of particular networks with the ends when asking organizations to undertake community projects. Too many failed projects will certainly erode a community's ability to band together on future projects.

Also, an inadequate reward structure can undermine stored social capital. Individuals join organizations for a mix of selfish and civic motives. If rewards are not seen as equitable, some participants may believe they were taken advantage of. Their belief that the organization is bound by shared values will diminish. Third, having too little to do can create a sense of purposelessness, resulting in dissipation of organizations that are embedded with social capital.

Fourth, changes in the external environment can also break the bonds necessary for effective capital. Concern has been expressed that economic change can destroy community cohesion. As individuals are displaced from jobs and neighborhoods, everyday nano-exchanges that contribute to social capital diminish. Consequently, social capital will diminish.

Leadership positions in communities are tied to economic roles and influence. Some areas are losing the economic roles that supported community leadership. In these areas, persons who used to own or manage local enterprises become branch managers, passing through the area on career ladders that will eventually take them to a corporate headquarters. As a result, the ability to create social capital has diminished. The threat can be acute in small areas because business organizations are consolidating in fewer, large financial and technology centers. Mergers and other consolidations reduce the number of business leaders who can reach the top of their field while putting down roots in their community.

Tensions are not new between economic changes and the desire to maintain social institutions. What is new is the pace of economic change, which may be exceeding the ability of social networks to adapt. Personal relationships generally take much longer to congeal and are slower to change than many strict market oriented relationships. If the economic positions of community leaders change due to relocation, job loss, or other economic change, their social roles in communities will also

change. Accordingly, policy makers may be particularly concerned with preserving social capital in periods of rapid change when the threat is greatest to social capital.

THE DOWNSIDE OF SOCIAL CAPITAL

The majority of the burgeoning literature casts social capital in a very favorable light, perhaps because it represents something missing in modern urban life. But social capital can be thought of as a tool that can be used to achieve certain ends and may have negative consequences (Carroll and Stanfield, 2003). Elected officials and business leaders have been known to form networks where trust and reciprocity resulted in deals that may harm the public interest. At an extreme, some gangs, terrorist organizations, and crime families probably have significant bonding social capital that makes them effective. It is therefore worth asking whose ends social capital serves.

Florida recognized that excessive social capital can result in newcomers being "locked-out" and not accepted into communities (2002). Sometimes social capital may be used to impose standards that result in excessive

conformity. Attitudes can develop that narrow sets of behaviors which are necessary in order to be accepted into local social networks. Social ties can exist within groups that lock out others.

Local officials may have difficulty distinguishing between the positive and negative consequences of social capital (Trigilia, 2001). This difficulty is particularly potent when local development officials are themselves members of dominant networks. Officials may feel that the networks they are familiar with are the only important ones. Ethnic networks can also become dysfunctional to economic development if the result is that other groups are excluded.

Markets and politics can serve as checks on dysfunctional social capital – social capital that diminishes wealth. Networks of mutual assistance, for instance, can create moral hazards, causing some members to exploit the system by free riding – taking advantage of other members in the network but not contributing. Other network members may tire of carrying the non-contributors. Similarly, the costs of hiring less than competent employees because they are part of a network can become excessive. As the costs of sustaining inefficient networks increase, either the market or the political system may exert pressures for change.

Politics is a second solution to preventing social capital from becoming dysfunctional. Bureaucratic (formal, codified rules that apply to everyone) policies for hiring and operating serve as a balance to cronyism and subjectivity. Also, politically determined allocation of resources can shape the system of social networks. This



The presence of social capital enhances discussions in which ACEnet seminar members learn from each other.

authority can be captured by some social networks as other groups are excluded. For instance, there is controversy regarding whether faith-based organizations, which are generally rich in social capital, should be used to deliver social services.

Some observers might suggest that local governments should not be concerned with altering the system of use and development of social capital. Certainly the ability of government officials to understand how to construct networks is limited. In this regard, the conclusions of the Canadian Research Board seem compelling. "...We have concluded government action could be more effective if, in developing relevant programs and initiatives, the role of social capital were taken into account more systematically. This does not mean, however, that governments could pursue grand strategies...." of social engineering.

CONCLUSION

Social capital has been an implicit part of the local economic development atmosphere. Now it is being examined explicitly and moving towards prominence as an important factor shaping communities. The concept of social capital promises to illuminate important aspects of the local economic development process and provide new conceptual tools for community and economic developers. In spite of its promise, there are many ambiguities and uncertainties regarding the nature and use of social capital. 🌐

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