

East Lansing SmartZone: An Analysis of the High-tech Economic Development Potential

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Executive Summary

Five students in the Urban and Regional Planning undergraduate and graduate programs at Michigan State University (MSU) compiled this report for the City of East Lansing's Community and Economic Development Department.

The focus of this report is economic development in the information technology sectors through the Michigan Economic Development Corporation (MEDC) SmartZone Program. The City of East Lansing is in the process of developing their segment of the Lansing Regional SmartZone, and this group of students was asked to compile a report analyzing the potential for an information technology-focused SmartZone, as well as offer research-based recommendations for partnership strategies and program elements. This paper summarizes the national, state and local research completed to make these recommendations, and presents the group's findings.

Findings:

East Lansing has a reputation of providing quality services to support its residents. The City offers outstanding parks and recreation opportunities, and entertainment and cultural options, along with a quality school district which all contribute to East Lansing's high quality of life. In addition to being a great place to live, East Lansing is also a great place to work and do business. Downtown East Lansing continues to see growth through redevelopment that has included retail, office and residential components. Recently, many new offices have opened in the northern part of the city, near Lake Lansing Road and US 127, including several financial institution headquarters. East Lansing has traditionally been a bedroom community of Lansing, the state capital, however, as key employers in Lansing downsize, East Lansing's economy must grow and expand to continue to attract or create new jobs. The Lansing Regional SmartZone (LRSZ) provides an opportunity for the City to work with its greatest asset, the University, to create jobs by commercializing research and development (R & D) work through MSU spin-off companies.

The SmartZone program promotes the development of business incubators as a way to support new business startups. East Lansing has an interest in focusing its efforts on Information Technology (IT) startups. An IT business incubator in the downtown could provide IT jobs in the downtown, provide customers to existing downtown businesses, generate revenue for the University and also provide internship opportunities for students at MSU. The IT incubator will likely have a positive impact on both the City and the University. Examining case studies from Ann Arbor/Ypsilanti and Kalamazoo make it clear that University partnerships are necessary to form a successful incubator. A strong bond between the City and the University in the beginning stages and throughout the entire process will be necessary to link the technology generator (the university) to the business generator (the incubator).

The cluster analysis, in Section 6 of this paper, illustrates that not all of the necessary inputs for an IT business cluster or an IT incubator are available at this time. It is



apparent, however, that where gaps exist, East Lansing and other partners in the LRSZ can collaborate to fill the gaps as outlined in the recommendations below.

Our concluding recommendations are offered in three phases. Early phases lay the framework for an IT incubator by building an IT community and building up capital assets. The phasing also reflects the growth in revenue from the LDFA which will only be able to support very limited programming in the first three years.

Phase 1 recommendations are those which should be addressed in the next 12 months.

- **Marketing:** The East Lansing DDA should develop marketing materials and make marketing the SmartZone part of their existing repertoire.
- **Networking:** In conjunction with the Lansing Regional Chamber of Commerce and Michigan State University, East Lansing should work to offer networking opportunities that bring together entrepreneurs, with an emphasis on high-tech MSU spin-off companies.
- **Venture capital:** East Lansing should work to attract a venture capital fund, specifically for high-tech entrepreneurs committed to growing their businesses in East Lansing.

Phase 2 recommendations are intended for action in 12-36 months.

- **Anchor businesses:** Establish the presence of high-tech companies in East Lansing by engaging local existing high tech companies to be anchor businesses and support a cohesive, connected, information technology cluster.
- **Communications Infrastructure:** As information technology is a sector which requires the latest developments in communications infrastructure, it is likely that the City will need to commence with upgrades to their current level of services.
- **Market Analysis:** As entrepreneurs develop new products, an incubator can help to analyze the product's ability to meet market demands, and assess whether those needs can be met by e-commerce to reach a global market.

The recommendation in Phase 3 is likely to be both necessary and affordable in three to ten years.

- **Physical space:** Create a business incubator that provides the necessary physical space and services catering to information technology companies.

Ultimately, the goal of this SmartZone incubator is to create and foster an information technology community in East Lansing which will create jobs, sustain the high quality of life that East Lansing prides itself on, and overall, make the city a great place to live and work.



Section 1: Introduction and Purpose

1.1 Client Information

East Lansing, Michigan, is the home of Michigan State University and is located directly east of and adjacent to the State’s capital city of Lansing. The economy of East Lansing is reliant on its proximity to the University and the Capital, both of which provide jobs and bring revenues to the region from throughout the State.

Although the City’s economy is supported by these diverse entities, it could be stronger. One way to analyze economic growth is through comparison of growth in property values which can be illustrated by the change in the area’s State Equalized Value (SEV). The SEV of all properties in the city grew last year by 6.6 percent which is slightly greater than the overall State of Michigan SEV growth rate of 6.2 percent. Moderate economic growth is good for first-ring suburbs in a region that has historically depended heavily on the declining automobile manufacturing industry as an economic driver, but East Lansing is working toward greater growth.

The City would like to be a leader in the “New Economy,” which focuses on knowledge-based industries rather than labor- and manufacturing–based industries. With highly educated citizens and as the host community for a major research university, The City of East Lansing understands that it is a key location for development of this New Economy in the state.

The City of East Lansing is shown comparatively with the three counties for the following reasons:

- The City is located within Ingham County
- Kalamazoo and Washtenaw Counties are relevant in the corporate SmartZones examined
- Kalamazoo, Ann Arbor, Ypsilanti and East Lansing are all university towns
- The State of Michigan provides an overall standard for comparisons

Table 1: State Equalized Value Growth Comparison

	2003 SEV	2004 SEV	% Change in one year
City of East Lansing	\$821,782,740	\$876,020,400	+6.6
Ingham County	7,952,104,954	8,524,106,937	+7.2
Kalamazoo County	7,534,009,202	8,022,206,352	+6.5
Washtenaw County	15,045,690,552	16,314,985,717	+8.4
State of Michigan	369,525,297,327	392,622,129,163	+6.2
Sources:			
www.aec.msu.edu -2003 and 2004 Michigan State Equalized and Taxable Value by County			
www.cityofeastlansing.com - 2004 Comprehensive Annual Financial Report			



Additional socio-economic data regarding the City of East Lansing and these additional comparative communities can be found in section 4.1.

The top employers in Ingham County include the State of Michigan, General Motors, Michigan State University and Sparrow Health Systems. It is important to recognize these employers as contributing to the economic health of the region but the opportunities for growing small high-tech businesses that could both benefit and support our existing employers also is important.

The State of Michigan is also embracing technology as the key to diversifying its economy and employment base. Because Michigan and the Lansing region are facing many economic development challenges today, the State established the SmartZone program through P.A. 248 of 2000, as a tool to help regions such as Lansing, collectively address new market demands and create high tech-oriented industries to replace our shrinking manufacturing industries (Michigan House of Representatives, 2005). As one of several strategies to develop the State's high-tech economy, SmartZones recognize and support clusters of new and emerging companies which are primarily focused on commercializing ideas, patents, and other opportunities surrounding university or private research (MEDC, 2005). To date, ten SmartZones have been established in Michigan.

Although the Lansing Regional SmartZone does not yet officially exist, the process for creating it is underway. In 2004 East Lansing and Lansing were authorized by Michigan Senate Bill 774 to follow in the footsteps of other regional areas to create this, the eleventh SmartZone in Michigan (Michigan Senate, 2004). The two municipalities have established three locations that together will become the Lansing Regional SmartZone. To be formally considered a SmartZone, a contract must be approved and adopted by the Michigan Economic Development Corporation and the State of Michigan before December 31, 2005.

Our Client, Tim Dempsey, Economic Development Administrator for the City of East Lansing has contracted with our Urban and Regional Planning Practicum team, also known as the "team," to analyze trends and current local conditions related to high-tech business development. The team's research will be used by the City to determine an effective local SmartZone strategy to support the development of high-tech businesses in East Lansing.

1.2 Scope of Services: Project Goals

The East Lansing SmartZone Team members have completed the following research as contracted by the client:

1. Identification of trends in high-tech economic development
2. Analysis of the Lansing Regional SmartZone partnerships and organization.
3. Analysis of higher education partnerships with high-tech businesses.
4. Inventory of local high-tech businesses to determine market clusters.
5. Analysis of potential for business incubator or business accelerator based upon cluster analysis and case study comparisons.



1.3 Research Methods

To provide the services requested by our client, the team utilized case study analysis and cluster analysis as the primary research methods for this report.

The team began by analyzing trends in technology-sector growth around the country and comparing those trends to Michigan and the Lansing region. We outlined state-supported programs that respond to the need for additional growth in the technology sector and highlighted programs that are being utilized in the Lansing Region.

Several of the other SmartZones in the state have been active for more than two years and offer specific examples of how cities and universities are collaborating to support new businesses. The Kalamazoo SmartZone and the Ann Arbor/Ypsilanti SmartZone were chosen as comparable examples because of their focus on information technology and their success at commercializing new technologies. The Ann Arbor/Ypsilanti SmartZone is an especially good comparison because of the multi-city collaboration that is similar to Lansing and East Lansing and because of their SmartZones being located in their downtowns. The team compared the partnerships taking place in those two SmartZones with the proposed partnerships in the Lansing Regional SmartZone as a way of analyzing the potential for Lansing Regional SmartZone partnerships. To specifically analyze collaboration between higher-education and high-tech businesses, the report compares assistance that is available to university-related start-up businesses through the Office of Intellectual Property at Michigan State University with the assistance provided at universities in the Ann Arbor/Ypsilanti and Kalamazoo SmartZones.

Collection of data on existing high-tech business start-ups in the East Lansing area included obtaining a list of companies that are categorized by the North American Industry Classification System (NAICS) as being either in the software publishing or computer system design and related services that are located in the Lansing Region. The team conducted interviews with many of these high-tech companies, obtained data from Michigan State University's Office of Intellectual Property and conducted an inventory of patents that result from the University's research and development programs. The data that was collected from local high-tech companies has been used to provide an inventory of existing programs to support IT business start-ups in the tri-county area. The information on Michigan State University patents is used to predict the type of businesses that are most likely to develop from the University's current faculty and research activities.

To determine the potential for a business incubator the team researched several successful business incubators and accelerators around the country. The report includes general recommendations for incubators and also more specific information on services provided at the Ann Arbor ITZone Business Accelerator and at the Southwest Michigan Innovation Center. These successful information technology focused incubator/accelerator facilities are located in Michigan. The report introduces the Austin Technology Incubator (ATI) as



a third comparable in this category, because it has been in existence longer and is renowned for its success, specifically the creation of 2,850 jobs (IC², 2005).

The recommendations for the City of East Lansing will be based on a cluster analysis. The cluster analysis shows resources that contribute to the success of information technology start-up companies based upon comparative analysis. By predicting which of those needs will be met by one of the partners in the LRSZ the report will predict gaps in necessary resources and make recommendations to the City on ways that government programs could be used to fill those gaps and support the development of a successful high-tech business cluster in the Lansing region.

Section 2: Trends in Information Technology

An information technology (IT) enterprise is comprised of all matters concerned with the furtherance of computer science and technology and with the design, development, installation, and implementation of information systems and applications. It is an integrated framework for acquiring and evolving IT to achieve strategic goals, and also includes the acquisition, processing, storage and dissemination of all types of information using computer technology and telecommunication systems (ICH, 2003).

Growth in information technology and communication networks sectors has led to what is now known as the "New Economy." "The New Economy embraces more fundamentally a profound transformation of all industries, the kind of transformation that happens perhaps twice in a century. The emergence of the New Economy is equivalent in scope and depth to the rise of the manufacturing economy in the 1890s and the emergence of the mass-production, corporate economy in the 1940s and '50s" (Atkinson, 2001a).

The use of information technology is strengthening multiple sectors of the economy today. As such, this report focuses on growth in two high-tech industry sectors relative to manufacturing. To illustrate, this section of the report will examine recent trends in the New Economy and its impact on the growth of the Nation's economy.

2.1 National Overview and the "New Economy"

States and regions across the nation are in the midst of a technological revolution. There has been a shift away from manufacturing and toward more technology-based global economy. This shift is comparable to the transition experienced during the industrial revolution and has similarly resulted in shifts in the distribution of businesses, residents and wealth.

New industries, especially information technology and e-commerce businesses, are representing a larger share of the nation's employment and economic base. This is due in part to a reorganization of traditional industries around technology. One example of this reorganization is seen in Oakland County, Michigan's Automation Alley, where



automotive technology is becoming an economic leader as the auto industry adapts to changes in their manufacturing practices.

To illustrate the trends described above, this report analyzes the growth of the Information and the Professional, Scientific and Technical Services Sectors and related sub-sectors as defined by the North American Industry Classification System (NAICS). The analysis shows a national trend toward more jobs in these categories and greater revenues. These positive trends are contrasted with negative trends in the manufacturing sector.

Table 2: Comparative Statistics on Sector Share for the US

	1997	2002	Change
NAICS Sector	Receipts ¹	Receipts	(%)
Manufacturing (Codes 31-33)	3,834,700,920	3,832,565,574	(-0.1)
Information (Code 51)	623,213,854	904,613,686	45.2
Professional, Scientific and Technical Services (Code 541)	596,440,788	896,342,907	50.3

Source: www.census.gov/epcd/202adv/us/TABLE3.HTM

According to the US Census Bureau, NAICS sector 5112, software publishers, includes those industries comprising

establishments primarily engaged in computer software publishing or publishing and reproduction. Establishments in this industry carry out operations necessary for producing and distributing computer software, such as designing, providing documentation, assisting in installation, and providing support services to software purchasers. These establishments may design, develop, and publish, or publish only (United States Census Bureau, 2002).

In addition, the US Census Bureau considers NAICS sector 5415, computer systems design and related services, to include those industries comprising

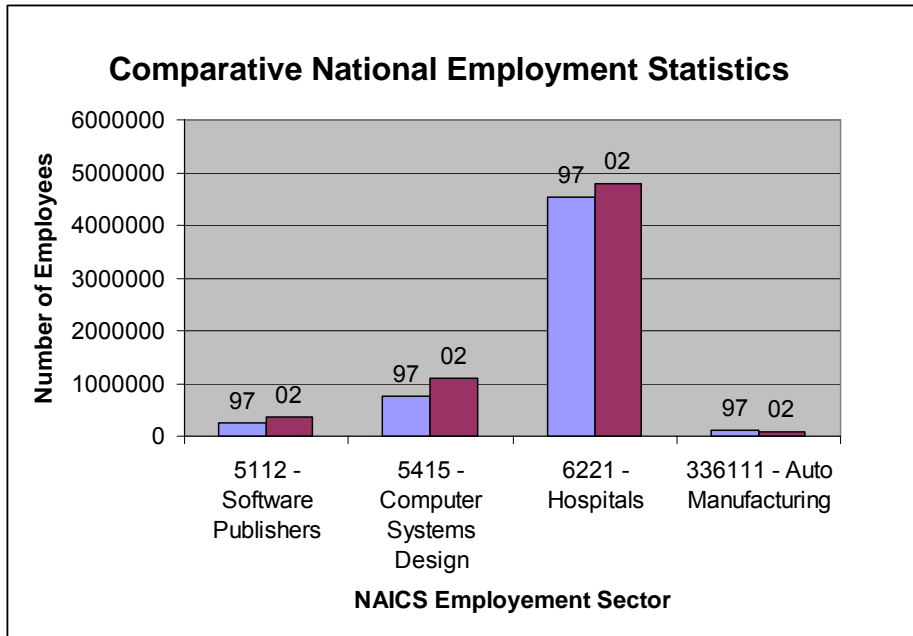
establishments primarily engaged in providing expertise in the field of information technologies through one or more of the following activities: (1) writing, modifying, testing, and supporting software to meet the needs of a particular customer; (2) planning and designing computer systems that integrate computer hardware, software, and communication technologies; (3) on-site management and operation of clients' computer systems and/or data processing facilities; and (4) other professional and technical computer-related advice and services (Ibid.).

The two sectors mentioned above are those that have the most relevance to the information technology field. The graph on the following page illustrates economic census data regarding the number of employees and national wage data for these sectors as well as hospitals and auto manufacturing, as these are the major employers in the Lansing area.

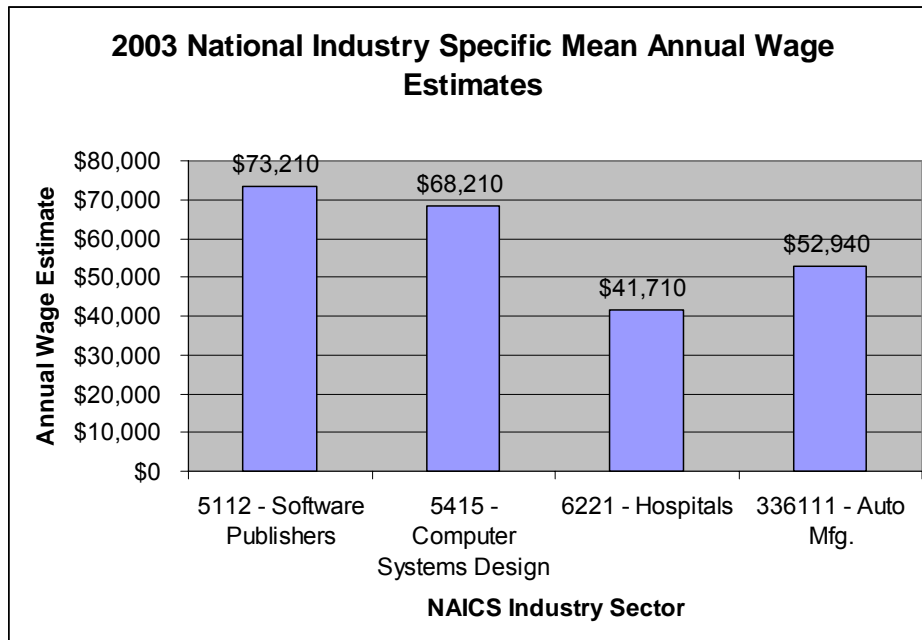
¹ Receipts is in reference to the Census Bureau's estimation of gross revenue (\$1,000) for the given industrial sector as a whole for the given fiscal year.



Both software publishing and computer systems design sectors grew, by 25 percent and 31 percent, respectively. Additionally, the hospital sector grew by 6 percent, however auto manufacturing fell slightly.²



This graph indicates the comparative wages for the four sectors.



² Editor's Note: The Economic Census breaks down the manufacturing sector differently than the other sectors, which is why the NAICS code for Auto Manufacturing is six digits rather than four. As automobile manufacturing is a more relevant industry to the Lansing area as opposed to the less specific "Transportation Manufacturing" code (336) which includes other such sectors as aviation and shipping manufacturing, we have decided this provides a more accurate portrayal of how these industries relate to each other in both a national and local context.



It is also important to understand that today's digital electronic technology permits information to be transmitted anywhere in the world quickly and inexpensively (Atkinson, 1998). This gives businesses more flexibility in choosing where to locate and has made quality-of-life a more important and valuable asset for regions to attract businesses and workers. Traditional elements of competitive advantage such as raw materials, customer markets, low cost and larger work force are less important than they were in the past and access to technology, innovation and a highly trained work force is more important (Florida, 2002). Information technology is important to other industries as well, thus, it is likely that within these other industries, professionals trained in information technology are and will continue to be in high demand.

2.2 State Trends

Michigan has responded to the trend toward an information and technology based economy by supplementing their existing economic development programs with a series of initiatives that are focused on the development of high-tech businesses in the State. The Michigan Economic Development Corporation (MEDC) has organized these initiatives into what they call a "Smart Tech Agenda." The Smart Tech Agenda is intended to meet the following five goals:

1. Build a critical mass of tech companies.
2. Ensure a 21st Century infrastructure.
3. Facilitate greater access to capital.
4. Create an entrepreneurial environment.
5. Sustain the image of the state as a high-tech work location (MEDC, 2005).

According to the United State Bureau of Labor Statistics, the State of Michigan ranked fourth in total employment in the high-tech industries in the year 2000. The high-tech industries that provide these jobs are spread across the State offering little opportunity for synergistic growth. Building a critical mass of tech companies in key locations was thus a goal of the Smart Tech Agenda. Three programs were developed to build clusters of high-tech companies.

- The SmartZone program was designed with the following goals:
 - Increase awareness of the numerous regions with opportunities for high-tech companies to start or grow.
 - Create a common brand identity for marketing Michigan's high-tech industry.
 - Create an environment of support for emerging companies.
 - Allow for development of business incubators and accelerators.
 - Foster collaborative partnerships between business leaders, universities and local governments in each zone.
- The Technology Tri-Corridor funds research Michigan State University, the University of Michigan, Van Andel Research Institute and Wayne State University. There are three areas of research that are available for funding.
 - Life sciences



- Advanced Automotive Technology
- Homeland Security
- The Target Industry Cluster Attraction Campaign is intended to identify firms around the United States that would be likely to consider investment in Michigan. This program focuses on firms in the following sectors:
 - Life sciences
 - Information Technology
 - Advanced Manufacturing

Ensuring a 21st Century infrastructure is about more than roads and airports. It is also about providing access to technology and to a talented workforce. This is being accomplished through three MEDC programs.

1. Link Michigan is an effort to provide a comprehensive infrastructure for telecommunications across the State.
2. The Core Communities Initiative is intended to provide funding to enhance the quality of life in Michigan's Core Urban Areas. Funds can be used for activities including land assembly, infrastructure improvements and business incubator build-out.
3. Workforce training programs provide life-long learning opportunities and resources to prepare workers for changes in technology.

Facilitation of access to financing is a very important component to the Smart Tech Agenda. Michigan is helping entrepreneurs secure seed-stage capital by introducing them to "Angel" investors who make very early investments in the company and provide guidance as the company grows. Angel or Angel Investors are successful entrepreneurs who want to help other entrepreneurs get their business off the ground. The angel investor is rarely involved in managerial aspects of a start-up. Instead, they act as a bridge from the self-funded stage of the business to the point that the business needs the level of funding that a venture capitalist would offer. They invest in businesses looking for a higher return than they would see from more traditional investments. The angel funding estimates vary, but usually range from \$150,000 to \$1.5 million. Moreover, they prefer to invest in seed and early-stage companies, the very ones that the Venture Capitalist funds had abandoned in the wake of dot.com market upheaval of the early 2000s (Jensen).

MEDC is also working to support the growth of venture investing by recruiting more venture capital firms into Michigan and providing support to the firms that are already located in Michigan. To provide direct capital to entrepreneurs and support commercialization of research activities at Michigan's universities, the State has also provided competitive grants through the Emerging Technology Matching Fund which provides up to \$150,000 to promising technology-oriented businesses.

Michigan is focusing its efforts to create an entrepreneurial environment on providing opportunities and resources to encourage the commercialization of technology (technology transfer) at its universities and research institutions. Two State programs have helped support this effort.

- The Entrepreneurial Academy



- Funding for University Tech Transfer Positions – MEDC cost sharing program

Sustaining the image of the State as a high-tech work location

- Cool Cities is an economic development program intended to attract knowledge workers to Michigan Cities.
- College Graduate Retention and Recruitment Campaign

In addition, several sectors of the Michigan economy were studied by the Michigan State University Community and Economic Development Program in a report published in July 2004. This report studied the Knowledge Economy in all counties in the State of Michigan. As defined by the report, the knowledge economy is “the application of new methods or new technologies to the production of distribution of goods and services.” Michigan’s Knowledge Economy consists of several sectors including, computers, life and social sciences and engineers (CEDP, 2004). From the information described throughout this report, the two counties that have SmartZones that will be used as comparables to the East Lansing are Washtenaw and Kalamazoo.

Jobs in the Knowledge Economy typically have wages around \$61,000 per year, while other industries have average wages of \$37,000 (CEDP, 2004). Knowledge jobs can be broken down into three categories; Information Technology Jobs, Workforce Education, and Management and Professional Jobs; however, only jobs in the Information Technology category will be discussed. An Information Technology Job can be defined as “the percentage of the workforce employed in four information technology related industry categories.” These four categories include NAICS codes 5132 Cable Networks and Program Distribution; 5133 Telecommunications; 514 Information Services and Data Processing Services; and 5415 Computer Systems Design and Related Services. Both NAICS 5415 and 514 have been directly examined in Ingham County. The image on the following page illustrates this data. It was found that both Washtenaw (at #2) and Kalamazoo (at #9) Counties were on the list of top ten in the State, along with Ingham County at #3.



Image 1: Information Technology Jobs in Michigan

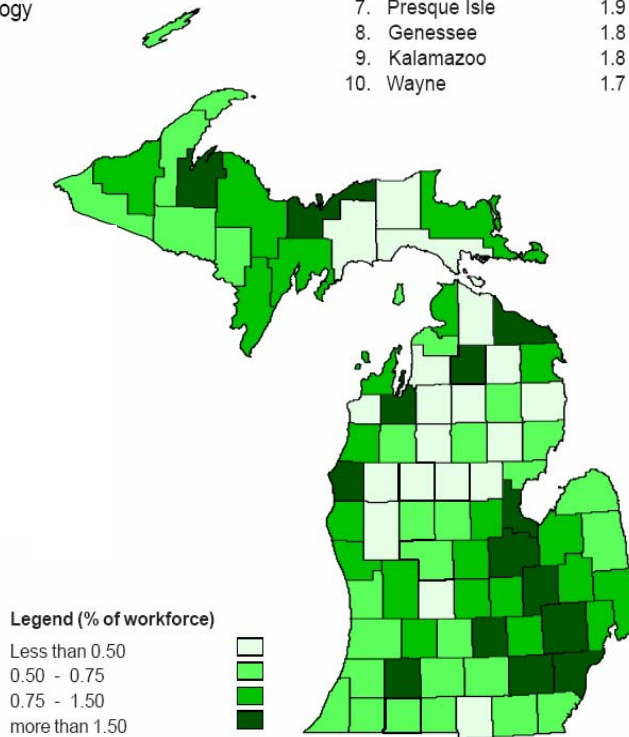
KNOWLEDGE JOBS
Information Technology Jobs

Description:

A thriving knowledge economy is characterized by an ample supply of jobs in information and communication technology related industries.

Top Ten Counties (percent of workforce)

1. Oakland	4.7 %
2. Washtenaw	3.1
3. Ingham	2.7
4. Saginaw	2.2
5. Otsego	2.2
6. Baraga	2.0
7. Presque Isle	1.9
8. Genesee	1.8
9. Kalamazoo	1.8
10. Wayne	1.7



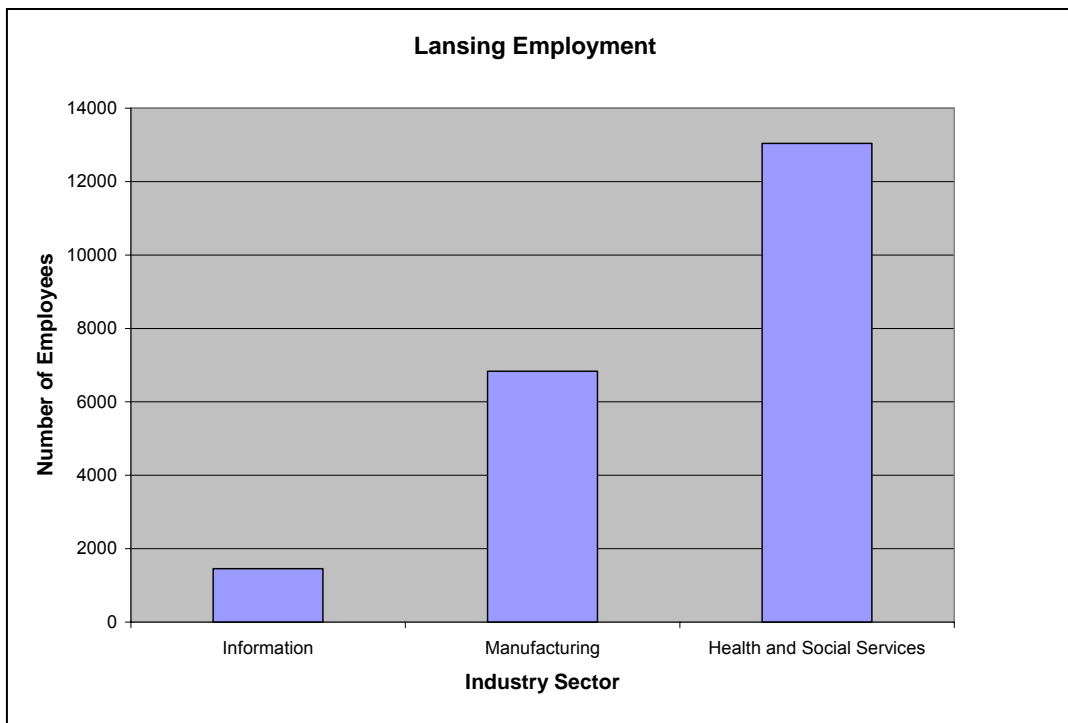
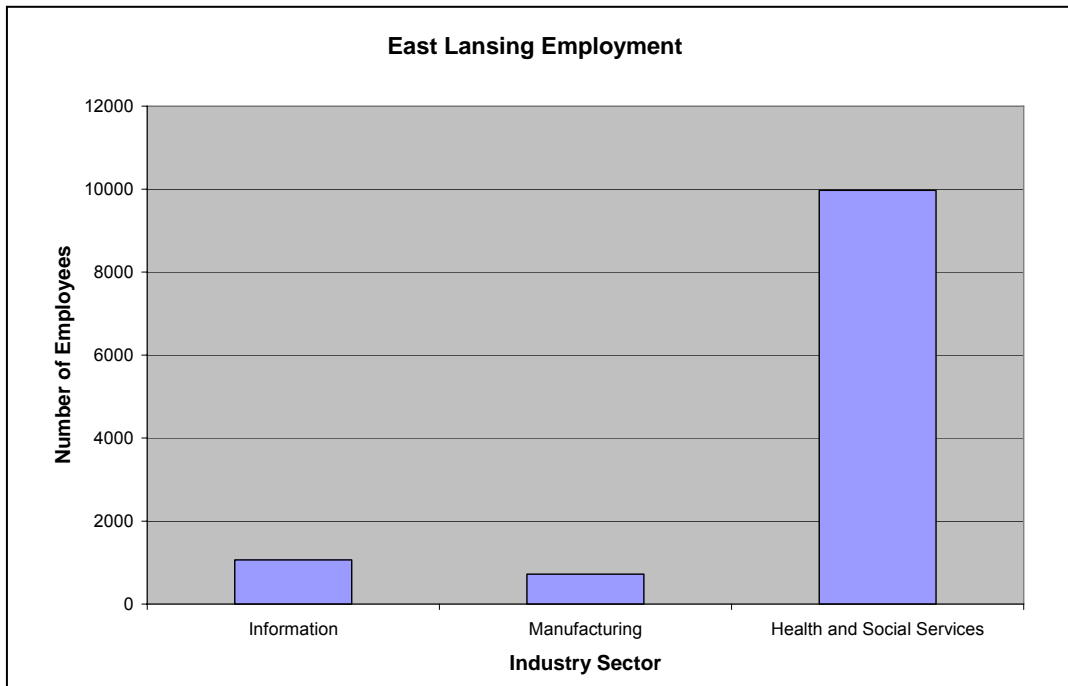
2.3 Local Trends

Source: CEDP, 2004

While national and state trends in information technology are important, what is happening on the ground in Lansing and East Lansing are particularly relevant to this study.

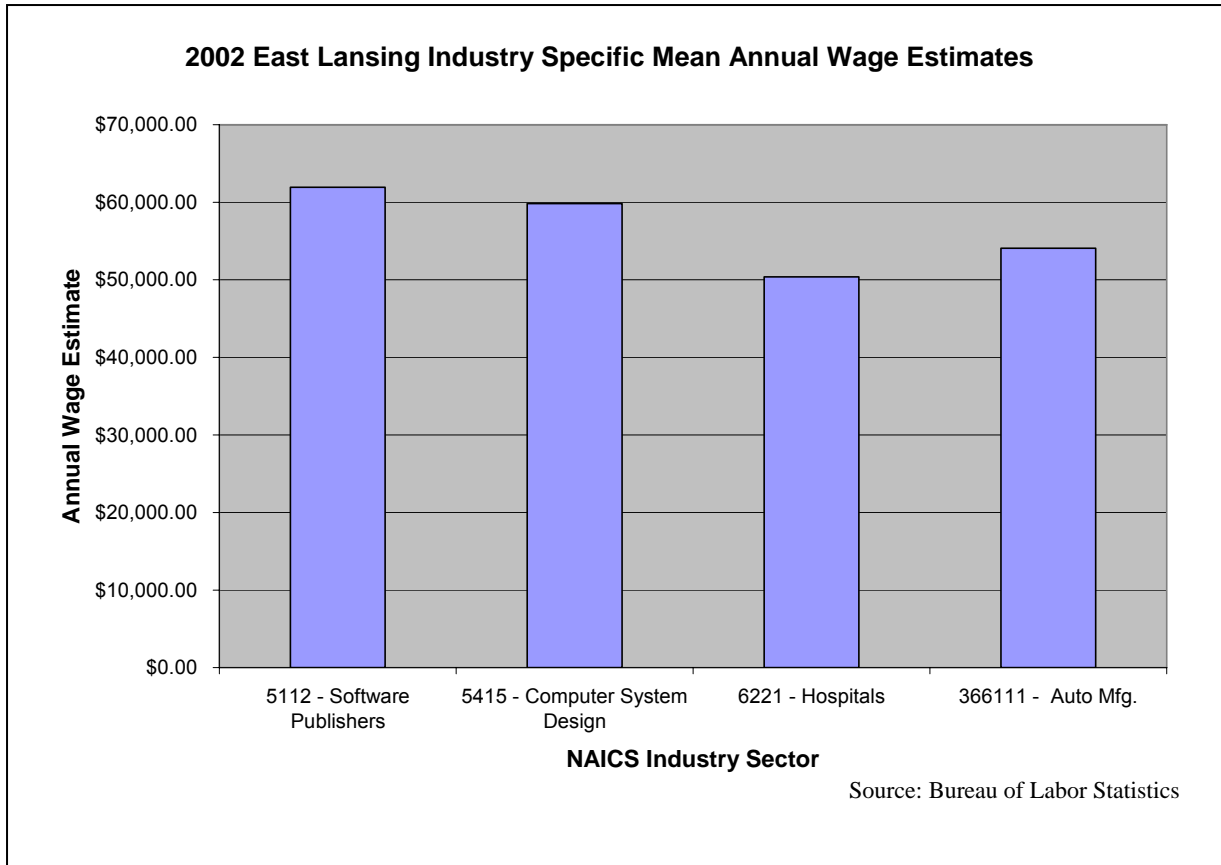
Lansing and East Lansing have comparatively similar employment statistics³ for the sectors we are studying. While those employed in the information sector are lower than that of health care and manufacturing, they still represent a significant portion of the economy, 4.3 percent for East Lansing and 2.5 percent for Lansing (Census, 2005).

³ NAICS sector specific information is not yet available from the 2002 Economic Census. Data from 1997 was not used due to the emerging nature of information technology and the recent economic decline facing the manufacturing industry. As such, the information following is taken from the general economic data found in American Fact Finder on the US Census Bureau website.





The graph below indicates the comparatively high wages for employees in the Lansing-East Lansing Metropolitan Statistical Area (MSA) when contrasted with the auto manufacturing and hospital sectors. This indicates that should the City of East Lansing be able to attract additional information technology businesses to their downtown, they will be attracting high paying jobs, which can be a boon to the local economy in many ways (Bureau of Labor Statistics, 2005).



In addition, the Lansing Region is currently benefiting from some of the State’s Smart Tech Agenda programs, such as the Technology Tri-Corridor grants which have provided funding to local life sciences start-ups and the funding assistance which has allowed Michigan State University to provide Tech Transfer assistance. The SmartZone will be used to provide additional resources for growing companies.

The City of Lansing has shown a commitment to Information Technology through their IT agenda, which has three goals:

- Develop a plan of action to provide affordable internet access to all residents.
- Integrate e-government technology into existing services.
- Creation of an education and marketing plan to encourage local businesses to integrate information technology into their practices (City of Lansing Mayor's Office).

The Lansing Regional Chamber of Commerce initiated a set of programs called the Lansing Tech-Connect and IT Council in 1999 which provided networking services to local high-tech businesses for two years until the funding was discontinued. The



programs that were offered were designed to increase use of technology and technical services by businesses, encourage growth in technology-related jobs and provide education and networking opportunities for members. Tech-connect events were scheduled by a full-time staff person and provided well-attended networking events for local high-tech businesses.

The Lansing Region is part of a fledgling technology triangle that has Ann Arbor, Kalamazoo, and Lansing as its cornerstones. Both Ann Arbor and Kalamazoo provide IT networking events and services. Currently there appears to be no formal networking opportunities specifically designed for start-up or IT companies in the Lansing Region.

2.4 Business Incubators

A business incubator is a support mechanism for struggling start-up enterprises to tap into for a number of needs. The services typically offered by an incubator include management guidance, technical assistance, rental space, equipment sharing, technology support services, networking, and assistance in obtaining financing. (National Business Incubation Association, 2004b). The services listed above are indicative of the typical needs of a start-up information technology company, and represent many of the needs which will allow a start-up company to grow into an established information technology company.

Business incubators differ from business accelerators in that incubators generally assist in helping start-up companies get up and running and an accelerator provides support once that business is more established. A business accelerator may provide similar services as an incubator, but the companies that they serve are further along in their strategic development.

The objective of an information technology incubator is to provide the start-up companies with a good start so that they can leave the incubator program financially viable and self-supporting. These companies then have the potential to create jobs, revitalize neighborhoods, commercialize new technologies, and strengthen local, regional and state economies. (National Business Incubation Association, 2004a)

Diverse ranges of institutions are beginning to develop an interest in businesses incubation, including many local and regional governments, universities, chambers of commerce, science parks, private real-estate developers and non-profit organizations. Many of these organizations are now participating in establishing and running incubation programs for many different types of industries. A business incubator or an accelerator can be owned by a either a public or a private entity. The rent of a privately owned incubator space can be subsidized publicly in some states. In Michigan, one example of a private incubator that is partially publicly funded is MBI, which is located in the University Corporate Research Park in Lansing.

2.5 East Lansing and a Business Incubator

One of the Lansing Regional SmartZone private sector partners, MBI International, operates a successful biology-focused business incubator at the University Corporate



Research Park, located off Forest Road, south of the Michigan State University Campus, in Lansing. If the City of East Lansing decides to embark upon the development of a business incubator/accelerator in conjunction with a SmartZone they have expressed an interest in the incubator having an IT focus. This report provides the following general guidelines for business incubators, followed by specific recommendations for IT incubators as gathered from analysis of three such entities with successful records of business graduation.

The following general characteristics are considered the customary underpinnings for the fostering a successful business incubator according to the National Business Incubation Association.

1. A clearly defined mission and program goals.
2. A strategic plan that contains quantifiable objectives to achieve program missions.
3. A business plan and a means to continuously monitor its implementation.
4. A management information system that regularly collects data and information on program activities for evaluation and improvement purposes.
5. Maintenance of effective collaborations with potential partners in all its service areas.
6. A management team that maintains current knowledge of incubator best practices.
7. Set staff pay rates at a level that is commensurate with attracting and retaining people that are capable of administering an incubator program efficiently.
8. Be sufficiently staffed to meet the demands and provide efficient services to its clients.
9. Have well-defined tenant selection criteria, which results in selecting only applicants that meets the criteria.
10. Routinely collect client performance results.
11. Have a formal criterion-based graduation guideline.

An effective business incubator that is consistent with alleviating the difficulties of entrepreneurial beginnings will provides the following services to its clients:

1. Offices
2. Office equipment
3. Telecommunications
4. Laboratory/prototyping/testing equipment
5. Meeting rooms

The preceding services are followed by the below-noted business development services, which have been deemed as a “must” for the development of successful business incubators:

1. The coaching of business skills and business model development.
2. The provision of business extension services (accounting, legal, secretarial support, etc)
3. The assistance in preparation of business plans
4. Providing assistance in the building of business management teams
5. The organizing of business development training programs
6. Providing market research and product marketing assistance



Lastly and most importantly, the clients of a business incubator must be able to clearly discern that the assistance in fund-raising is available. Incubators should:

1. Have their own investment fund
2. Smooth the progress of access to public business development funds
3. Establish a network of private investor (business angels and/or venture capitalist)
4. Help clients prepare their projects for start-up venture financing
5. Establish a network of critical business service providers and negotiate special arrangements with them. (National Business Incubation Association, 2004)

The following chart has specific information regarding programs at three model IT-focused business incubators. In addition to studying the Ann Arbor IT Zone and the Southwest Michigan Innovation Center, the report also studies the Austin Technology Incubator (ATI). Austin is included in this comparison solely to show a more long-term incubator, and the impacts time can have on the success.

Table 3: Comparable Elements of Existing Incubators

Incubator	Ann Arbor ITZone	Southwest Michigan Innovation Center	Austin Technology Incubator
Year started	1997	1999	1989
Number of start-up companies assisted	13	25	103
Assistance Provided	<ul style="list-style-type: none"> • Business Plans • Market Research • Capital Finance Coordination • Networking Events • Office Space • Training and Seminars 	<ul style="list-style-type: none"> • Administrative Assistance • Office Space and Conference Rooms • High Speed Internet • Wet-Lab Facilities • Networking Events • Capital Finance Coordination • Training and Seminars 	<ul style="list-style-type: none"> • Business Plan Consulting • Human Resources Recruitment • Market Research • Public Relations • Financing Guidance including membership in "The Capital Network." • Office Space • High Speed Internet • Conference Rooms • Receptionist • Networking

ATI’s website explains that in addition to assisting 103 companies the incubator has created “over 1,900 direct, value added jobs,” for the Austin Region, and 2,850 total jobs. They have also won several awards and this report considers ATI to be a best practices example for IT focused incubators.

Funding for ATI’s programs, employees and 45,000 square feet of office space come from a combination of fees from member companies, grants from the City of Austin and the Chamber of Commerce and grants of one percent business equity from member companies according to the ATI website (IC², 2005).



Residents and businesses in the City of East Lansing would benefit from developing an information technology cluster supported by an IT incubator in a number of ways.

It would retain and attract highly educated individuals to live and work in the community. The City of East Lansing has a successful technology and talent producer – MSU. Also over 70 percent of the City’s population (over 25 years old) has attained a bachelor’s degree or higher, which is extraordinarily above the State average of 21.8 percent. The information technology field demands advanced knowledge. Thus, East Lansing’s population and MSU give the City a competitive advantage for growing its information technology sector and the growth in the sector will help East Lansing to retain talented graduates and grow the local knowledge economy.

It would support Michigan State University. By encouraging spin-off companies at the university to build upon their success and develop their commercialization potential, the University will gain patent revenue and provide a closer link between the academic world and the business world. A successful incubator could lure exceptionally talented students and faculty to the university.

IT companies need services that are already being provided in East Lansing. Offering space for IT companies to locate can only have a positive impact on other local service industries. Everything from legal aid, financial and administrative support, to downtown restaurants and entertainment could be supported by IT companies. Not only do they need advice on how to best insure their company but they also need a bite to eat for lunch. The range of existing business that would service these companies is vast.

In the long-run, it will create jobs. And it will create high-paying jobs, something that is definitely a plus during these economic times. By creating a space for small companies to develop and grow, over time, the potential for hiring within these firms, and for these firms to spin-off other companies themselves is high. By offering flexible space, and allowing for potential growth, the City can retain these companies and thus, grow their own economy.

An IT incubator is desirable for downtown East Lansing, however, the City has not had a history of working closely with the University to grow new businesses. The opportunity for that type of relationship is evident from the examples that were analyzed in Ann Arbor and Kalamazoo, however work needs to be done before a true incubator can be established. The University may not have enough IT spin-off companies that are in need of office space to justify the development of such a facility at this time. East Lansing could begin by working with its existing DDA businesses and MSU professors to create networking opportunities which are designed to foster an IT community and build the culture necessary to encourage more spin offs.

Start-up IT businesses that spin off from Michigan State University would have a much greater chance of being successful if they were provided with quality incubator space and services. The businesses that get their start in East Lansing are more likely to stay and



contribute to the local economy once they become established. Fostering the growth of these young companies could, therefore, greatly benefit downtown East Lansing in the long term, however there will be a significant immediate cost associated with the space, staff and programs offered by the incubator. The SmartZone provides the City with funding tools such as the ability to create a Local Development Finance Authority (L DFA) that will make the creation of an IT business incubator possible.

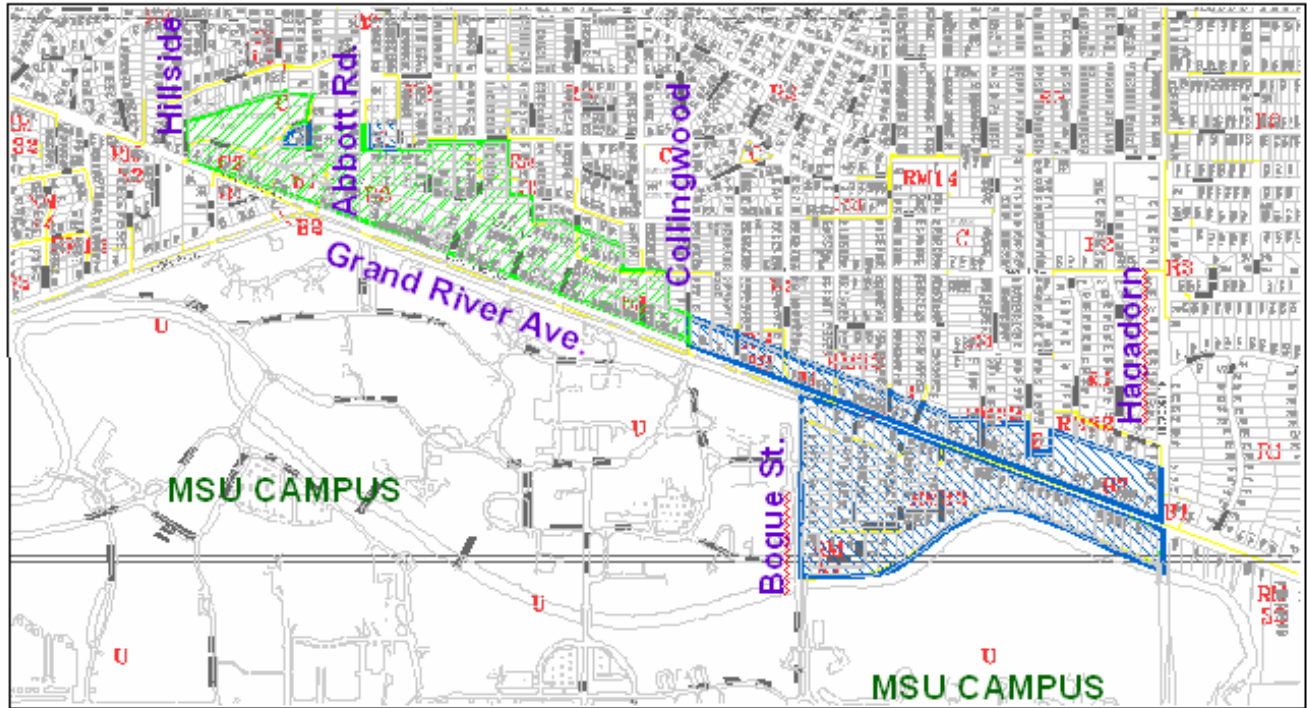
Section 3: Current Status of Lansing Regional SmartZone

3.1 Location: Project Boundaries



The Lansing Regional SmartZone (LRSZ) will include sites for business location in Downtown East Lansing along with two City of Lansing sites that include the University Corporate Research Park and MBI International, and at the Lansing Board of Water and Light's Ottawa Redevelopment Site. In East Lansing, specifically, the City intends to consider their Downtown Development Authority (DDA) their SmartZone as well. (Please see the map below for location.) The map below shows the boundaries of the East Lansing DDA. Currently, the DDA encompasses the area north of Grand River Avenue from Hillside Court on the west to Collingwood on the east. The City is also in the processes of expanding their DDA to include the area north of Grand River Ave. from Collingwood to Hagadorn on the east, and south of Grand River Ave. east from Bogue to Hagadorn Road, to encompass a planned redevelopment area north and west of the campus of Michigan State University. The City expects the DDA expansion to be complete in the next six months and anticipates that their SmartZone proposal will encompass the area shaded in green and blue on the map below.



Map 1: City of East Lansing DDA



CITY OF EAST LANSING DDA EXPANSION

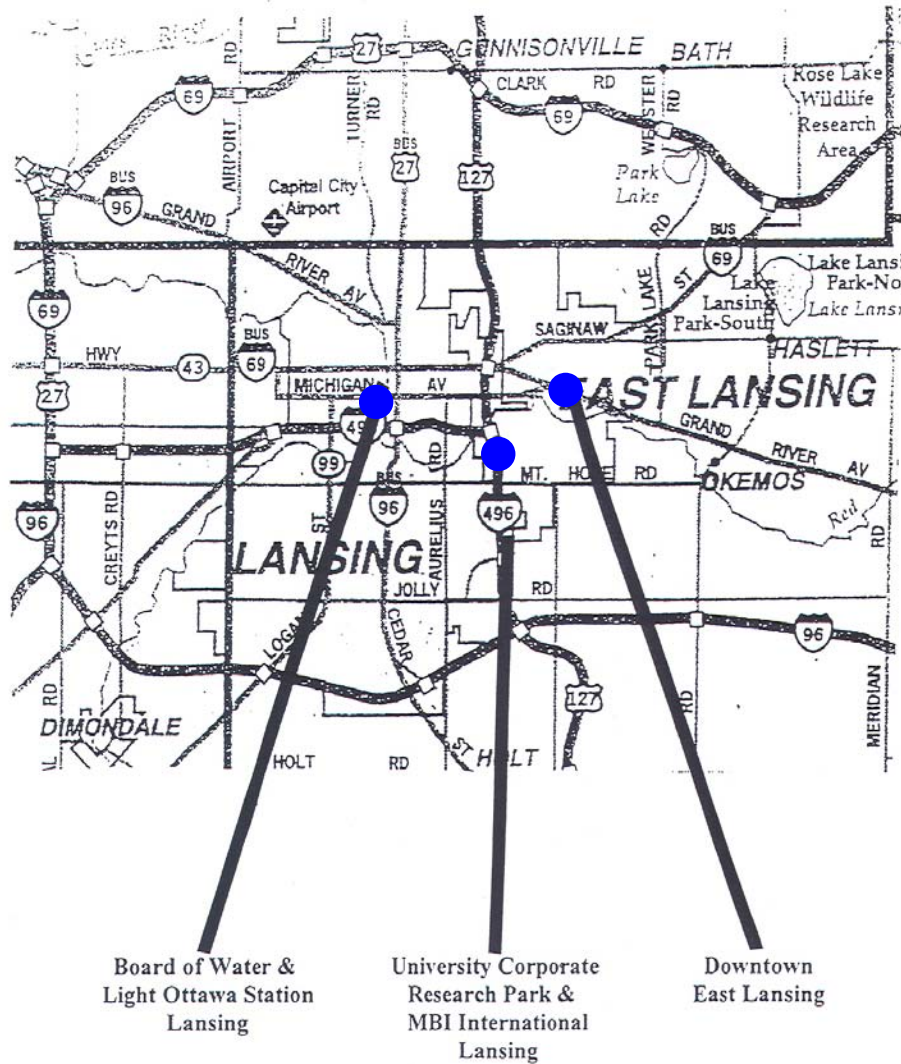
-  DDA
 -  PROPOSED DDA EXPANSION
- Scale: 1:800

Source: City of East Lansing



The following map shows a regional overview of the location of all Lansing Regional SmartZone areas will be.

Map 2: Lansing Regional SmartZone Development Sites



Source: Ingham County Economic Development Corporation

3.2 Partnerships

The Lansing Regional SmartZone is a cooperative effort to stimulate the growth of the technology-based businesses in the Lansing region. Partners in this effort include the City of East Lansing, the City of Lansing, Ingham County, Lansing Regional Chamber of



Commerce, MBI International (a private sector partner), Michigan State University, Michigan State University Foundation and the University Corporate Research Park.

3.3 Timeline for Implementation

- March – April 2005 Lansing and East Lansing staffs are drafting the following documents:
- Resolution creating a Local Development Finance Authority (LDFA) and LDFA Operation Agreement between the two cities.
 - SmartZone Designation Agreement for approval by MEDC
 - Development agreements
 - LDFA bylaws
- April – May 2005 City Councils will approve LDFA Operations Agreement and resolution creating LDFA. Councils will appoint LDFA Board Members at the same time.
- June 2005 LDFA board meets and elects officers, approves bylaws, SmartZone designation agreement and possibly LDFA Finance and Development Plans.
- July – Aug. 2005 City Councils pass resolutions for public hearing on LDFA Finance and Development Plan, SmartZone Designation Agreement and Development Agreements.
- Aug. – Sept. 2005 Public hearings will be held on LDFA Finance and Development Plans, SmartZone Designation and Development Agreements.
- Sept. – Oct. 2005 City Councils approve LDFA Finance and Development Plans, SmartZone Designation Agreement and Development Agreements (Lansing Regional SmartZone Meeting, 2005).

The process, currently underway, for the expansion of the City of East Lansing's Downtown Development Authority (DDA) and the establishment of the Local Development Finance Authority (LDFA) will provide financing options for a future incubator. The LDFA is expected to be the largest source of revenue for the development of the incubator space and its programs. LDFA financing is able to capture a portion of the taxes generated by properties in the LDFA (SmartZone) district. Since the LDFA and the DDA apply to the same properties, the taxes captured by the LDFA would be 50 percent of the incremental increase in school tax. Tim Dempsey provided the following LDFA revenue estimates. The base year would be 2005 and revenue for 2006 is expected to be around \$12,000. Revenue will steadily increase as the value of properties in the LDFA increase and is estimated to be about \$140,000 per year by the year 2015. That estimate does not include the increase in value that will be associated with redevelopment



in the DDA district which is expected to continue steadily for several years. Redevelopment of just a few properties could result in much greater revenue for the LDFA.

It would be very difficult to create an incubator of any kind with the small amount of money that the LDFA is expected to generate in the first few years. For financial reasons, it will be necessary to work with SmartZone partners and combine efforts during these first years to provide incubator services and grow the IT community that will be served by a future incubator in East Lansing.

The LDFA can only capture taxes for 15 years, therefore it is very important to have a clear plan for how the IT incubator will be initiated, expanded and how it will eventually be self supporting. The incubator business plan will need to set clear goals for alternative revenue growth that will sustain the incubator in later years.

Section 4: Comparative Demographics

4.1 Demographic Comparisons

The following table shows a comparison of demographic data among the City of East Lansing, Ingham County – future home of the Lansing Regional SmartZone, Washtenaw County – home of the Ann Arbor/Ypsilanti SmartZone, Kalamazoo County – home of the Kalamazoo/Western Michigan University SmartZone and the State of Michigan. The population and economic information provided gives a snapshot view of how the host Counties compare with one another, with the State and with our Client City of East Lansing.

All three counties have quite similar demographic information that does not vary much from the percentages and medians for the State. Washtenaw County has a larger population than the other counties and has the highest earnings and per capita income. The industry sectors that are listed in the table were chosen because the first two are sectors that include the NAICS classifications discussed earlier in the report and manufacturing, healthcare and education are sectors that along with government provide a great deal of employment to the Lansing region.

It is interesting to note that Ingham County has the lowest employment in the manufacturing sector of the three counties and that East Lansing has very few residents employed in manufacturing. The State has only 2.1% employment in the Information Sector and all three Counties also have consistently low percentages of people employed in information. East Lansing has a relatively high 4.4 percent of residents employed in the information sector. East Lansing has a very high percentage of residents over 25 years old with bachelor's degrees, 70.4 percent. East Lansing has a high unemployment rate and a low median household income, both of which can be attributed to the high number of college students living in the community. Ingham County, Kalamazoo County and the State have very similar median family incomes, while East Lansing's median family income is higher than the State's, it is less than Washtenaw County's. East



Lansing can be said to have a high number of low-income students living in the same city as relatively high-income families. Most of those in the workforce are employed in a professional field and are highly educated.

Table 4: 2000 Demographic Comparisons

Census Data 2000	East Lansing	Ingham County	Washtenaw County	Kalamazoo County	State of Michigan
Total Population	46,525	280,486	329,308	239,621	9,938,444
Employment Status – 16 & over in labor force	63.6 %	68.5 %	69.2 %	69.0%	64.6 %
Employment in Information Sector	4.3 %	2.7 %	3.1 %	2.0 %	2.1%
Employment in Professional, Scientific & Mgmt. Sector	7.6 %	7.8 %	10.9 %	7.0 %	8.0 %
Employment in Manufacturing Sector	2.9 %	10.4 %	15.5 %	20.4 %	22.5 %
Employment in Education and Health Sector	40.7 %	27.3 %	24.1 %	32.6 %	19.9 %
Education Attainment for 25 years & over – high school diploma	96.9 %	88.1 %	91.5 %	80.4 %	83.4 %
Education Attainment for 25 years & over – bachelor's degree	70.4 %	33.0 %	48.1 %	24.4 %	21.8 %
Median Household Income	\$28,217	\$40,774	\$51,990	\$42,022	\$44,667
Median Family Income	\$61,985	\$53,063	\$70,393	\$53,953	\$53,457
Per Capita Income	\$16,333	\$21,079	\$27,173	\$21,739	\$22,168
Median Earnings: Full time, year round	\$43,767 male \$30,556 female	\$40,335 male \$30,178 female	\$49,304 male \$33,598 female	\$39,611 male \$27,965 female	\$41,897 male \$28,159 female
Unemployment Rate (12/04)	5.3%	5.8%	3.2%	5.1%	7.5% (Mar. 05)



4.2 Case Studies

4.2.1 Kalamazoo (Western Michigan University) SmartZone

Kalamazoo is a cornerstone of the "Tech Triangle," and thus, comparing it with the existing Ann Arbor/Ypsilanti SmartZone and the proposed Lansing Regional SmartZone can provide a better understanding of the current status of high-tech in mid-Michigan.

The City of Kalamazoo, Western Michigan University and Southwest Michigan First, a privately funded, 501(c)(3) non-profit corporation formed by business and higher education leaders to promote economic development in the Greater Kalamazoo region. Southwest Michigan First's mission "is to retain, expand and attract businesses in the region. [They] provide a wide range of business development services for any corporate level from entrepreneurs to established companies" (Southwest Michigan First, 2005a).

In addition to providing business development services, such as administrative assistance, office and conference space, networking events, training and seminars, other resources include access to venture capital and angel fund partners, and a business incubator and accelerator, known as the Southwest Michigan Innovation Center, located on the Western Michigan University Campus in the Business Technology and Research (BTR) Park.

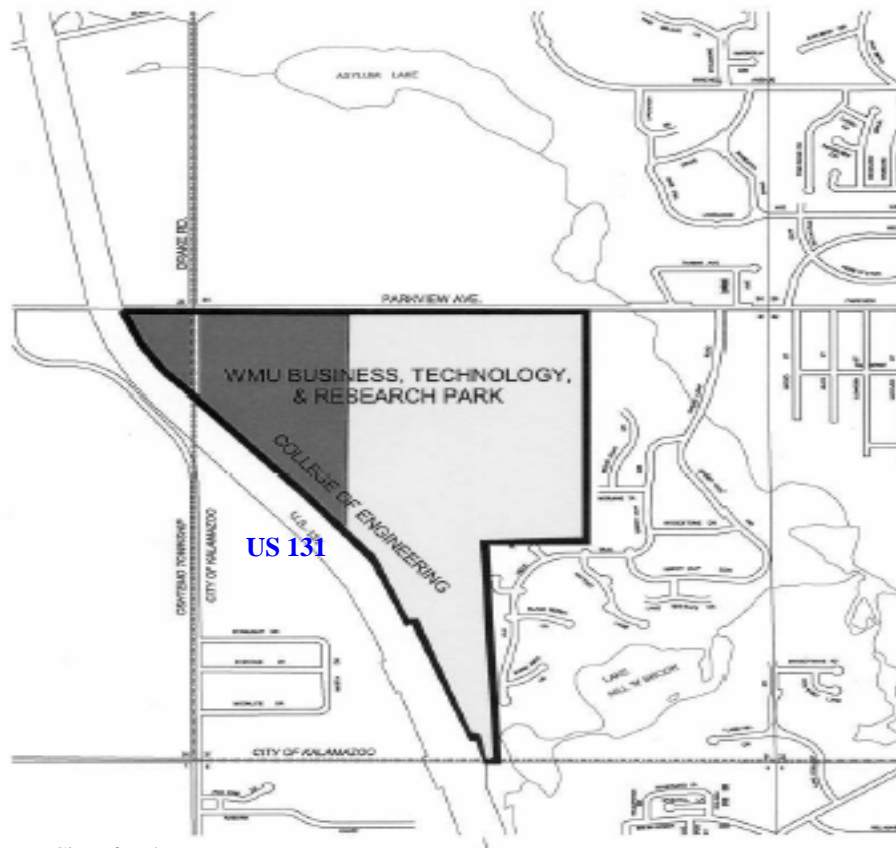
As venture capital and angel funds are one of the most needed, and most difficult to obtain aspects of starting a new high-tech business, the SmartZone partner Southwest Michigan First has developed a network of venture capital firms and assists new and emerging businesses to gain access to this much needed funding. While the majority of the venture capital firms provide dollars mostly for health and life sciences start-ups, the network continues to expand. In addition, there is also a network of angel funders, high net-worth individuals who are willing to invest in bioscience start-ups (Southwest Michigan First, 2005b.).

The business incubator and accelerator, the Southwest Michigan Innovation Center (SMIC), provides a number of amenities, including wet-lab technology, administrative assistance including high-speed internet, office space, and conference rooms. Because the SMIC is also located on the Western Michigan University campus, tenants are allowed access to university resources, such as library facilities, as well as faculty, staff and students. The SMIC Web site also includes a listing of relevant resources to businesses both inside and outside the SmartZone. (Southwest Michigan Innovation Center, 2005) The SMIC is also within easy driving distance of I-94 and US-131, and is only a short drive from Kalamazoo/Battle Creek International Airport. The map on the following page helps illustrate this.



Map 3: Kalamazoo SmartZone/LDFA

CITY OF KALAMAZOO
LOCAL DEVELOPMENT
FINANCE AUTHORITY DISTRICT (LDFA)



Source: City of Kalamazoo

A key role of the City of Kalamazoo in the SmartZone initiative has been to establish and administer a Local Development Finance Authority (LDFA) for the SMIC Park. Utilizing the special designation of “Certified Technology Park,” Kalamazoo’s LDFA was created in 2001 with maximum 15-year duration to support park infrastructure, business development/recruitment and the operations of the Innovation Center through tax increment financing (City of Kalamazoo, 2001).

The establishment and administration of the Local Development Finance Authority (LDFA) plays a significant city role for the success of the SmartZone initiative. According to the LDFA Development Plan, a detailed listing provided by the City of Kalamazoo indicated that funding for the SMIC, equipment, furniture and operating expenses as indicated for the BTR Park will be on going through the life of the LDFA.



The method of financing would be reimbursement to the Innovation Center owners from TIF revenues (City of Kalamazoo, 2001).

As evidenced, through Southwest Michigan First, and the SmartZone designation, "tenant firms are able to access an intensive network of business, professional and technical services, access to seed capital, mentoring assistance and linkages to sources of knowledge and expertise via the university and private industry resources" (Southwest Michigan First, 2005c).

Together, these elements have made the Kalamazoo SmartZone one of the most successful SmartZones in the state. Nearly half of the businesses that have located in SmartZones have located in the Kalamazoo SmartZone. "The area boasts 25 private sector residents in the fields of life sciences, advanced engineering and information technology. 'It certainly has been tremendously successful in a very short period of time,' said Bob Miller, Western Michigan University associate vice president for community outreach and spokesperson for the SmartZone. 'When we broke ground in the fall of 1999, we were told to expect that the build-out for a park this size would take eight to 12 years. Today, we're already about 76 percent absorbed in terms of land'" (Michigan Business Report, 2004).

4.2.2 Ann Arbor (University of Michigan)/Ypsilanti (Eastern Michigan University) SmartZone

The Ann Arbor/Ypsilanti SmartZone is a good comparison to the Lansing Regional SmartZone because both have two cities working together to accomplish the goal of creating a regional high-tech cluster. The boundaries of Ann Arbor's SmartZone area are contiguous with their Downtown Development Authority (DDA) boundary and East Lansing will also have contiguous SmartZone and DDA boundaries.

The Ann Arbor/Ypsilanti SmartZone is being used to expand the successful information technology-focused incubator known as the Ann Arbor ITZone. The Ann Arbor ITZone was born out of a 1997 blue ribbon committee that was formed to use IT infrastructure as an economic development tool in the downtown. The five members of that committee included experts in development, planning, finance, the computer industry and technology. The project grew into what is now a non-profit organization with a mission to "capitalize on Ann Arbor and Washtenaw County's historic and growing role in the information technology industry" (Ann Arbor ITZone, 2000).

The Ann Arbor ITZone provides the following services:

- Business plan assistance
- Capital financing coordination
- Market analysis
- Management recruiting
- Networking events



To further clarify the types of networking events, the Ann Arbor IT Zone offers a variety of seminars, forums, educational programming and workshops. Upcoming topics of "High-Tech Tuesday" seminars include things like "technology and the law," with information on how to protect intellectual property; also planned is a seminar regarding innovation and competitive advantage information, including how to develop a model of your product to help determine how it will fare in the global market. They also host a number of speakers throughout the year, recently including a business and IT coach, the chief content officer of Michigan Public Media, and the founder of a Silicon Valley IT enterprise. These programs are intended to also bring together local and regional IT businesspeople to facilitate networking and collaboration as well as the sharing of local knowledge.

In addition to offering networking opportunities, the SmartZone has helped the ITZone in two additional ways. First it has provided additional partners. The City of Ypsilanti, Eastern Michigan University, Washtenaw Development Council and the MEDC partnerships have helped to provide a more coordinated marketing plan and set of services. The SmartZone designation also allowed the Cities to develop a joint Local Development Finance Authority (LDFA) that is can capture 12 mils of Tax Increment Financing (TIF) above what is already captured by the DDA. The additional funding is being used to support a business accelerator at the ITZone. The incubator provides space to eight start-up companies, three of which receive free space on a competitive basis. In December of 2004 the University of Michigan Office Of Technology Transfer released an annual report stating that there were 13 new business start-ups and \$11.7 million in license revenues (University of Michigan, 2003).

Entrepreneur Magazine 3rd Annual Top 100 Entrepreneurial Colleges and Universities for 2005 has released their rankings and the University of Michigan Ann Arbor ranks in the top 50. This ranking is based upon three categories of entrepreneurship programs; Comprehensive, Entrepreneurship Emphasis and Limited Curriculum. The University of Michigan has a Comprehensive Program, which "features the greatest depth and breadth of resources, typically with a large contingent of experienced faculty whose teaching and research expertise specifically relates to entrepreneurship" (Henricks, 2005). In addition, the Comprehensive Program typically offers more than a dozen courses and schools have dedicated entrepreneurial studies centers and other programs that are offered at both the undergraduate and graduate level.

The Zell Lurie Institute for Entrepreneurial Studies at the University of Michigan was established in 1924 and offers 27 different courses with 25 full-time faculty. While it may be difficult for universities to track alumni's activities once they leave the university, many believe that the programs are working. According to The University of Houston's Center for Entrepreneurship and Innovation, approximately 35 percent of its more than 300 graduates are running their own businesses, and all who began ventures stayed in operation for at least two years (Henricks, 2005).



While data from the University of Michigan was unavailable, the rankings suggest that those universities that have entrepreneurial programs have students who are better prepared for starting and maintaining their own business.

The creation of the LRSZ can only positively impact the City of East Lansing and the Michigan State University communities. While examining both case studies it becomes apparent what types of partnerships the City and MSU need to form in order for the LRSZ to be successful in creating a high tech industry. With the City's highly educated workforce, and MSU's technology production abilities, they would both gain by engaging in collaborative commercialization efforts. It is imperative for the City of East Lansing to work closely with Michigan State University to develop a strong partnership that is similar to those relationships in Washtenaw and Kalamazoo Counties. A strong bond in the beginning will help with building and maintaining positive local support and the leadership necessary to assist the IT cluster through its early years.

Section 5: IT Business Startup Environment in Lansing Region

5.1 What is a University Spinoff?

For the purposes of this report, the following definition of a "university spinoff company" shall be used:

Any small business whose existence is a direct result of research or laboratory work conducted at a university or college by faculty, staff, or students at said university or college. The goal of the small business shall be to adapt research findings to create commercially viable products (McGill, 2005).

University spinoffs are an important aspect to the Lansing Regional SmartZone because they tend to produce high performance companies. According to Case Western Reserve University's Scott Shane, a "spinoff from a typical university is 108 times as likely to go public as the average new company." Spinoffs are also very important to local and regional economies because of the new jobs they create in a high-tech market. These jobs, along with increased company profits, allow for a high quality of life due to the increased tax base they bring to the community. In addition, they also allow the local university the potential to increase income for additional research and further academic endeavors.

5.2 Patents and Intellectual Property

The Michigan State University Office of Intellectual Property (OIP) provides the patent and licensing assistance to faculty, staff and students who have developed a new technology. In most cases the patents are sold to existing companies to be commercialized, however in some instances there is the ability for the inventor to also be an entrepreneur and start their own company. In these cases the office provides support to entrepreneurs by helping them to obtain business plan assistance, consulting, loans or



start-up funding. The OIP office has provided a list of eight start-up companies, listed in the table four to the City of East Lansing. A meeting was held with three of these businesses to discuss how they have gotten established and what their needs are. Two members of our student team attended that meeting and assist our clients in gathering and analyzing information. Key leader interview results are discussed in section 5.4.

A list of new technology that is available for licensing is listed in Appendix A, and includes 77 inventions with ties to Michigan State University, of which seven of these are information technology related. The majority of new technologies are biology, chemistry and agriculture products or processes. Additional information in that Appendix includes MSU in relation to other Michigan companies in terms of patent output.

5.3 Venture Capital and Angel Funds

It would be difficult to develop new technologies without a source of funding, which is why early-stage business financing is crucial to take an invention from the laboratory to the marketplace. Funding is needed for patenting, testing and perfecting production, and the many steps necessary to establish and maintain a business. The first step in product development is research and development, which is usually funded through research grants, or through existing university resources and services. The second step is patents, licensing and launching the business, which is often funded through angel funds or pre-seed loans. Venture capital funding usually supports the business through the next few years of business until it begins to make a profit. There are ten geographic markets that are considered the hubs of venture capital spending and 76 percent of all venture capital dollars are spent in those markets. The Lansing region is not a prime venture capital market, therefore new businesses that locate here are likely to experience difficulty accessing critical business development funds. The chart in Appendix A is a summary of investment firms that are part of the Venture Capital Association of Michigan. Several are located in and around Ann Arbor. Providing opportunities for local start-up businesses to interact with these investment firms will be very important to the success of the Lansing Regional SmartZone.

5.4 Key Leader Interviews

On February 22, 2005, the City of East Lansing hosted a meeting with MSU faculty identified by the MSU Office of Intellectual Property as spinoff companies related to information technology or related high-tech fields.

The following table is a listing of those present at the meeting.



Table 5: Key Leader Meeting Attendance

Participant	MSU Department	Business Name	Product
Ron Averill	Mechanical Engineering	Red Cedar Technology	Engineering Design Software
George Garrity	Microbiology and Molecular Genetics	Names for Life	Bioinformatics Software
William Donohue	Communications	Medical Professional Performance Systems	Standard Evaluation Software
Lori Hudson	Office of Intellectual Property		
Jim van Ravensway	East Lansing Planning		
Tim Dempsey	East Lansing Planning		
<i>Katherine Czarnecki</i>	<i>MSU URP</i>		
<i>Lori Mullins</i>	<i>MSU URP</i>		

The start-up business owners were asked to give a brief overview of their companies.

Ron Averill explained that Red Cedar Technology began developing software in 2001, prior to which they were working as consultants to General Motors (GM). The company’s core competency is design optimization, or developing ways to speed the process of design. He has one partner, Eric Goodman, and they employ about 10 others; 6 full-time and usually 3-4 part-time students. Because they began as consultants to GM, they had a customer to fund the early development of the company. In 2001 when GM cut back on their contract, they had to decide whether to let the company fold or expand. They decided to expand and sought angel funds for the development of a marketable product. Production of their “Heeds” software product began in 2004.

George Garrity worked in the private sector for many years before coming to the University. His new company is Names for Life, which uses digital object identifiers similar to those used for indexing reference works to index biological, chemical and medical nomenclature. There are three partners, himself and another faculty member here at MSU and a third at the University of Edinburgh in Scotland. They recently received a challenge grant from the Life Sciences Corridor Fund which will be used to accelerate the development of this product and the company. Garrity also said that he has invested heavily with his own funds.

Bill Donahue has a background in web-based consulting for school districts. His new business product which was not developed at the university is intended to be a valid and reliable instrument for evaluating six competencies of various stages of medical education programs. This idea was developed after the Accrediting Medical School & Residency Program wanted a tool to evaluate students. Six hospitals are development partners on this product and each has given \$35,000 toward research and development.

Lori Hudson of the Office of Intellectual Property (OIP) has been helping the start-up businesses to gain access to grants for research and development. OIP also provide assistance with business plans and marketing. Eight new businesses came out of MSU in 2004. When an idea or product is developed at or through the University then it is owned by MSU, and the OIP assists in helping patent new products, of which the inventor



typically receives about 30% of the royalties. The advantage to this relationship is that the inventor is paid for being an employee of the University and the patents that are owned by the University are much less likely to be challenged than privately owned patents. In addition, the University also receives a financial return on its investment of infrastructure and other support it offers support to faculty during the course of their research.

The common needs of start-up businesses that could be filled through a local incubator were then discussed. The list identified by the participants included:⁴

- Synergy and networking
- Investors or funding sources
- Business planning and strategy development
- Customers
- Service partners like accountants, lawyers, etc
- Seminars

The idea of having the collective energy of many start-up companies and their potential customers and investors interacting in one place was felt to have value by all in the meeting.

Ron Averill explained that he has benefited from the Ann Arbor ITZone seminars and business start-up boot camp. There was then discussion about the success of Ann Arbor's IT industry. The participants felt that Ann Arbor does have more people engaged in IT related businesses, and the industry has benefited from a solid attempt to bring people together to support business growth. Averill and Garrity also discussed the need for angel and other private investors. Averill said that he knows of a few investors in the Lansing area, but they are not widely known and there is not a networking program in place to help start-ups come in contact with the right people.

Jim van Ravensway asked if there was an idea how many more spin-off businesses are out there at MSU. The group felt that there are many companies that the University is not aware of. Many of them are consulting, and offering custom products for their clients. The group said that start-up development is not part of MSU's day-to-day operations. Garrity said that although there are not a lot of known investors in Lansing, money will chase a good investment and if the region's start-up businesses were promoted as good investments than the money would likely follow. Averill said, "an IT industry cannot just be pushed into existence. It needs to be pulled and the pull is money."

Bill Donohue said that he believes an incubator that is very visible and offers a mix of services and space would bring businesses and investors out to get involved.

⁴ These needs match closely with the needs identified in section 2.5 regarding a business incubator in the City of East Lansing.



Tim Dempsey asked where these three businesses expected to be a few years from now. Bill Donohue said that he will look for the best deal. When he has approximately fifty employees he will look for a good place to locate based on financial considerations as well as social and intellectual capital. A location with energy and excitement as well as a competent work force will be important. Garrity said that his company could go anywhere and he could stay here. Averill said that his company’s location is based on its customers. He will be opening offices in other cities around the world because his employees need to be close to his customers. His office is currently in Meridian Township.

This meeting provided insight from three different IT start-up company leaders who shared ideas about their companies’ needs. Although the companies are different the needs outlined above were very common and the need most often mentioned was networking. Networking can provide access to partners, customers, consultant and capital and therefore, having well attended networking events would be very valuable to new companies.

The Practicum group conducted phone interviews with several of the regional companies listed in table 5, and asked them why they chose to locate their businesses in the region. The majority of the respondents indicated that their businesses were located here because they were already living in, or were originally from the area. In addition, many had families with children who were happy in the area, and were thus unwilling to move to a new location. These answers indicate that quality of life in the community is a key factor to keeping existing IT companies in the region.

5.5 Inventory of Existing IT in Lansing Region

The following table lists both the current spinoff companies faculty and staff at MSU have developed, as well as a listing of companies in the tri-county area (Clinton, Eaton and Ingham) that fall under the two NAICS codes we are considering. This table illustrates the types of information technology related start-up enterprises that have recently been developing as part of research being conducted by faculty and students at Michigan State University.

Table 6: MSU Spinoff Companies, 2004-2005

<i>Current MSU Spinoff Companies Related to IT (Source: MSU Office of Intellectual Property)</i>		
MSU Faculty Member	Company Name	Specialty Product
Marcos Dantus	Biophotonic Solutions	laser pulse shaping
Gerd Kortemeyer	Educog	educational software
William Donohue	Medical Professional Performance Systems	health provider software
George Garrity	Names for Life	bioinformatics software
Ron Averill	Red Cedar Technology	engineering software

The table below is intended to illustrate that established information technology-related companies have a presence in the area, and combined with the several companies already spinning off from Michigan State University, are a good sign that the industry has a future



in the Lansing region, and thus is indicative that an information technology focused SmartZone could be successful in East Lansing.

Table 7: Regional IT Companies, 2005⁵

Regional IT Companies [US Census NACIS codes 5112, 5415] Source: MEDC, 2005			
President/CEO	Company Name	Specialty Product	# of Employees
Bruce Ciarleglio	Aston Group Inc	Computer systems integration services	65
Budd Raymer	Computer Systems Co	Computer consulting & image management services; business office automation software publishing	65
Jason Schreiber	Control Room Technologies LLC	Internet access & web hosting services	35
Wesley Benzing	Datamatic Processing Inc	Custom software developers	25
David Hayes	Electronic Data Systems ⁶	Computer programming services	400
David Black	Forest Computer Inc	Software developer services	22
John Griggs	Gateway Systems Corp	Custom software developers	24
William Ray	Group Infotech Inc	Custom software developers	23
Robert Holland	Holland Systems Corp	Software consulting	70
Mark Morrison	Novations Learning Technologies	Development of business applications & internet infrastructures for companies	49
Michael Knox	Polyphasic Inc	Designs & develops custom computer software	25
Virginia Hilbert	Professional Technical Development Inc	Computer web design, consulting, programming & training	37
Ron Zyzelewski	Quest Software Inc	Automotive custom software development services	52
Tom Szur	Bellefeuil, Szur & Associates Inc	Government software developers	32
John Cally	Unisys Corp	Computer installation, wiring & consulting services	40

5.6 Cluster Analysis

Business clusters that have a common industry focus are often able to promote productivity and innovation because of the increased capacity of the whole and the synergy that spurs new ideas. Because of these benefits and in order to determine the needs of an IT cluster in the Lansing Region, the practicum team has completed the following cluster analysis.

The cluster analysis uses information from two sources to predict the inputs that would make an IT business cluster successful in East Lansing. It uses information that has been gained from previous inventory and analysis in this report and information from a report by Michael E. Porter of Harvard University called *Clusters of Innovation: Regional Foundations of US Competitiveness*.

⁵ Excluded from this summary is the State of Michigan Department of Information Technology, which deals with telecommunications, information technology and network management, because of their public-sector status. The Department does employ approximately 100 persons.

⁶ EDS has a satellite office in the region, nationwide the company employs more than 117,000 (EDS, 2005).



The following discuss in detail the above inputs to the cluster analysis.

Access To Capital: The capital sought includes Angel and Venture Capital funding sources through, but not limited to, MSU Foundation, Lansing Regional Chamber of Commerce and the City of Lansing. Private financial institutions, such as local banks, may be approached for collaboration ideas through programs such as the Community Reinvestment Act. In its current form, it is intended to encourage depository institutions to help meet the credit needs of the communities in which they operate, including low- and moderate-income neighborhoods, however some examples of community venture capital funds for economic development have been successful, such as Chicago Community Ventures (www.chiventures.org).

Networking Opportunities: Provide opportunities to meet with other technology sector professionals, either formally or informally. LRSZ partners such as the Lansing Regional Chamber of Commerce and Michigan State University can sponsor these events. Other groups such as the Great Lakes Innovation Marketing Association (GLIMA) which is just starting a Lansing Chapter and local internet service providers could also sponsor networking events independently or collaboratively with the LRSZ.

Training Opportunities and Mentoring: Courses, seminars and other learning opportunities that help entrepreneurs develop skills to succeed in business could be held privately, at an incubator or through Michigan State University.

Marketing and Recruitment: Business marketing and human resource tools could be made available to help young companies with these tasks that are critical to a business's success.

Market Analysis: Tools and techniques to analyze the commercialization potential of a product or idea is necessary in the very early stages of product development.

Talented Workforce: Many companies need assistance in the selection of skilled CEO's and production assistants.

Office Space: Physical space to be used for research and development, general office use and shared meeting space offered at affordable rates would be useful for IT start-up companies. The synergy created from many IT businesses working in close proximity and sharing some resources is a benefit of offering office space in an IT business incubator.

Anchor Businesses: Established IT businesses that can provide leadership and guidance to start-up companies are very important for attracting and supporting start-up companies.

Communication Infrastructure: Communication Infrastructure includes access to fiber optic, broadband and wireless Internet capabilities.

Quality of Life Amenities: Community aspects such as housing options, parks and recreation, arts and religious organizations as well as affordability are all considered quality of life amenities that would attract talented workers and businesses. The items above identify important elements in the creation of an IT business cluster. Other items that are already being supported by SmartZone partners should also be



considered by the City as potentials for collaboration as outlined in recommendations on the following pages.

The following cluster analysis indicates the typical needs of a start-up, or spinoff company, that could be serviced by a business incubator. The needs were determined mainly through case studies as well as the key leader interviews, though we did gather information from other sources, and when appropriate, that source is indicated. In this table, we identify the input, or the need, explained earlier, how the input was identified, and then list the partners who can or will provide that input, or if a gap exists. In cases where a gap does exist, we discuss later how that gap may be met.

Table 8: Cluster Analysis

Inputs	How was the input identified?	Partners Source or Gap?
Access to Capital	OIP, key leader interviews, MEDC information and incubator examples	<ul style="list-style-type: none"> MSU Foundation Lansing Regional Chamber of Commerce City of Lansing Possible Gap based on amount of capital needed
Networking Opportunities	Key leader interviews and incubator examples	<ul style="list-style-type: none"> Lansing Regional Chamber of Commerce University Corporate Research Park Michigan State University
Training Opportunities and Mentoring	Key leader interviews, MEDC information and incubator examples	<ul style="list-style-type: none"> Michigan State University Lansing Regional Chamber of Commerce MSU Foundation MBI International
Marketing & Recruitment	Key leader interviews and incubator examples	<ul style="list-style-type: none"> Lansing Lansing Regional Chamber of Commerce Possible Gap for East Lansing Incubator
Market Analysis	OIP and incubator examples	<ul style="list-style-type: none"> Gap
Talented Workforce	MEDC information and Porter	<ul style="list-style-type: none"> Michigan State University MBI International
Office Space	Key leader interviews and incubator examples	<ul style="list-style-type: none"> MBI International –focus on Biotech Possible Gap based on type of office space needed
Anchor Businesses	Porter	<ul style="list-style-type: none"> Gap
Communications Infrastructure	Porter and incubator examples	<ul style="list-style-type: none"> Gap
Quality of Life Amenities	Florida, Porter and interviews with existing IT firms	<ul style="list-style-type: none"> All partners



The following list of partners and the resources that they intend to provide to assist in the Lansing Regional Smart Zones success was compiled from meetings held between the City of East Lansing staff and LRSZ partners. These resources provide some of the needed inputs shown in the following cluster analysis. The areas where gaps exist are where there is a necessary input and no known source. Section 6 of this report will provide recommendations to East Lansing on options for providing those resources to aid in the successful development of an IT business cluster.

City of Lansing's role:

- Assist businesses in site selection
- Tax capture to fund infrastructure improvements
- Business location and start-up consultation services
- Tax incentives for qualified projects

Michigan State University's role:

- Provide a single point of contact for SmartZone Partners through the Office of Intellectual Property to coordinate access to MSU's physical and intellectual resources.
- Evaluate potential start-up businesses utilizing student interns at the Eli Broad Graduate School of Management.
- Provide linkage for SmartZone Partners and businesses to the Michigan Life Sciences Commercialization Initiative.
- Provide business forums on commercialization resources for MSU faculty and SmartZone entrepreneurs.
- Provide business plan development assistance and mentoring.
- Provide Internet 2 service through the Merit network to the University Corporate Research Park

Greater Lansing Chamber of Commerce role:

- Establish and continue to support interest groups for networking such as the Information Technology (IT) Council.
- Develop a mentoring program and professional assistance teams that will provide advice at no cost to regional entrepreneurs developing businesses around new technology.
- Market the LRZS
- Develop a network of venture capital sources in concert with the MSU Foundation.
- Create an alliance with local partners toward developing a business incubator within the LRSZ focused on the creation and expansion of technology-based businesses.
- Coordinate a funding drive to implement these initiatives in support of the LRSZ

Michigan State University Foundation:

- Support the creation and development of new technology-based enterprises originating both from MSU and through non-university entities.



- Utilize the MSU Foundation New-Ventures Team to evaluate and help initiate start-up opportunities identified by the MSU Office of Intellectual Property.
- Implement a business accelerator model to assess markets for new technologies and determine the best way to organize and manage new enterprises.
- Provide links to private capital, venture capital and related business advisors.
- Collaborate with the Lansing Regional Chamber of Commerce and the City of Lansing to stimulate creation of new technology-oriented enterprises, using the business accelerator process.
- Co-fund with the Chamber of Commerce a series of pre-startup “boot camps” designed to help entrepreneurs get a quick start toward business creation.

MBI International’s role:

- Assist with development, validation and process demonstration for the commercial market of biological or chemical processes.
- Assist with commercialization of qualified technologies through Grand River Technologies, Inc.
- Assist with the recruitment of managerial talent and identifying potential seed funding opportunities.
- Access to testing facilities and equipment, including pilot plant.
- BioBusiness Incubator of Michigan is located at MBI International and provides office and laboratory space and services to new biology related start-up companies.

While it has become clear that the City has gaps in areas necessary for a SmartZone, it has also become apparent through the key leader interviews and the research performed that where gaps exist, other partners may be able to fill them. Gaps such as Market Analysis could be filled with assistance from Michigan State University students and private groups such as Great Lakes Interactive Marketing Association (GLIMA). GLIMA has been instrumental with providing services for lifelong learning, networking, which includes marketing resources, to individual businesses. GLIMA is currently forming a Mid-Michigan Chapter, which will begin April 21, 2005. This group aims to increase education and exposure to the technology sector by hosting training opportunities and seminars, industry spotlight series and social mixers. By working closely with GLIMA, the City of East Lansing can help establish a technology presence and retain local talent within the University community.

Section 6: Findings and Recommendations

Based on our analysis, East Lansing would benefit from an IT business incubator. The University is a technology producer and with the help of a business incubator the local economy would grow from the development of an IT cluster. The question then becomes “What does the IT cluster need to be successful?” These are outlined below



The IT cluster needs advanced technology and talent. The University has advanced technology being developed and used in a multitude of different ways. Information technology solutions are applied to many sectors. There are IT applications in Engineering, Communications, Medicine, Law, Agriculture, and the list goes on. A culture needs to be established that supports not only the development of IT solutions to assist in multi-disciplinary advancements, but also supports the commercialization of those solutions. The City should encourage and support the work being done by the Office of Intellectual Property and seek ways to promote and highlight commercialization and entrepreneurship amongst faculty.

An IT cluster needs an IT community. The University was able to identify five very early stage IT spin-off companies and seven potential IT products available for licensing. The team also identified fifteen IT related companies in the region based on their NAICS survey. There is an assumption that there are many more companies or individuals who are producing custom software solutions for client companies or for their own needs, however the Lansing regional IT community is currently very small. Interviews with spin-off company founders indicated that a place for networking and access to capital were more important than office space at this time. Building a community of IT companies around the ability to collectively grow and profit will be an important first step in the development of an IT cluster in East Lansing.

An IT cluster needs to provide the necessary inputs that will support the development of successful businesses. The cluster analysis in section 5 shows that the SmartZone partners are able to accommodate most of the necessary inputs for the success of an IT company. East Lansing will need to work with the partners to provide access to capital, office space, communications infrastructure and access to established anchor businesses. Bringing one of two of the local IT companies into downtown East Lansing to be a founding partner in the IT cluster would be beneficial to the success of spin-off companies.

An IT cluster needs to be self supporting. The SmartZone LDFA and other local tools will be critical to support the development of the IT cluster, however these public supports should be seen as seed money to bring the necessary inputs to the cluster. The cluster itself including a potential incubator will need to have success in the next 15 years that produces revenue to sustain the needs of the cluster.

The MEDC and the City of East Lansing would like to have a downtown East Lansing IT business incubator be part of the SmartZone agreement. The following recommendations are intended to provide the city with a guide for the development of such an incubator. These recommendations are offered in three phases. Expenditures should be consistent with the revenue captured from the LDFA, although the City could supplement those revenues by working with the Lansing Regional SmartZone partners to alleviate the costs of programming. Other revenue sources could be sought from other state programs, grants, or potential private sector partners.



6.1 Phase 1

Phase 1 recommendations are those which should be addressed in the next 12 months. These phase one recommendations are intended to begin fostering the growth of the IT community and gathering capital to support individual business growth. These efforts will not require substantial funding from the LDFA.

- **Marketing:** In conjunction with GLIMA, promote the work being done by MSU's Office of Intellectual Property and the associated spin-off companies.
 - The East Lansing DDA could develop marketing materials and make marketing the SmartZone part of their existing repertoire.
- **Networking:** In conjunction with the Lansing Regional Chamber of Commerce and Michigan State University, East Lansing could work to offer networking opportunities that bring together entrepreneurs, with an emphasis on high-tech MSU spin-off companies.
 - These individuals would benefit from networking with their peers as well as with established IT companies, support companies such as attorneys, and capital and financial service investors.
- **Venture capital:** There are other groups in the LRSZ that are working to bring venture capital and angel funds to high-tech start-ups, however, the gap in this area is likely to require support from multiple groups.
 - East Lansing could work to establish a venture capital fund, specifically for high-tech entrepreneurs committed to growing their businesses in East Lansing.
 - Financial institutions, through the Community Reinvestment Act are potential partners in the development of this fund.
 - There may be affluent individual residents who are looking for investment opportunities of this type as well.

6.2 Phase 2

Phase 2 recommendations are intended for action in 12-36 months. These recommendations would act to further support the growth of the local IT community, but the expenses necessary to initiate these recommendations are expected to be higher than phase 1 recommendations.

- **Anchor businesses:** Establish the presence of high-tech companies in East Lansing by engaging existing local high tech companies to act as an anchor businesses to support a cohesive, connected, information technology cluster.
 - Examples of potential businesses include ACD.net and Red Cedar Technologies.
 - Create a consortium of local businesses within the DDA to help support the IT cluster by offering specialized services, such as technology support, at reduced or subsidized costs.



- **Communications Infrastructure:** As information technology is a sector which requires the latest developments in communications infrastructure, it is likely that the City will need to commence with upgrades to their current level of services.
 - Examples of the type of upgrades may include such things as providing Internet access to Merit, a statewide non-profit network supporting research and development that links universities, non-profit organizations, libraries and schools. To foster this collaboration could also be a huge boon to high performance networking opportunities.
 - In addition, as this is a rapidly changing area, the upgrades necessary may still be in development, and the future needs may not be known at this time.
- **Market Analysis:** As entrepreneurs develop new products, the incubator can help to analyze the product's ability to meet market demands, and assess whether those needs can be met by e-commerce to reach a global market.
 - This is an area in which the Urban and Regional Planning Program and/or the Business School at Michigan State University could provide assistance.
 - Professional consulting firms may be needed to assist in this step as well.

6.3 Phase 3

The recommendation in phase 3 is intended to create an IT incubator that would provide a hub for the strengthening IT community in East Lansing. This recommendation will not be possible for at least 36 months at which time the IT community could be ready and the funding for the incubator (through the LDFA) may be adequate.

- **Physical space:** Create a business incubator that provides the necessary physical space and services catering to information technology companies.
 - The space should be quality, Class A office space if possible so as to portray the success of the growing companies.
 - Possible locations include the City Center office building on Grand River Avenue, University Place office building adjacent to the Marriott Hotel, and the Masonic Temple on MAC Avenue. Office space is currently available in these three buildings at rates of \$16 to \$20 per square foot. In addition, there is potential for new office space to be constructed in the proposed East Village development, and may be able to provide space requirements not available in existing downtown buildings.
 - The cost of preparing space for use by information technology companies should be considered in the selection of alternatives.

Although there has been recent growth in the office market in East Lansing there is also a large amount of vacant office space. According to the Greater Lansing Area Office Market Index Brief from CB Richard Ellis, current vacancy rates are approximately 18.2 percent, which is up from 17.6 percent from the third quarter of 2003. The East Submarket, including the City of East Lansing, currently consists of 4,067,109 square feet of space, which represents 42 percent of the greater Lansing office market. With the increase amount of space available, it will not be necessary to create new space at this time for an incubator. Three key buildings downtown that currently have over 10,000



square feet of office space available in each are the University Place, the Masonic Temple and the City Center Office building. By utilizing current space, the City will also decrease vacancy rates while allowing business to quickly locate to sites already outfitted with communication infrastructure. For supplemental information from CB Richard Ellis, please see Appendix C.

Conclusions

It will be important to realize that even the most successful incubators take time to improve the economy of a region. Patience, perseverance and strong leadership will be needed from the City and the University to make this incubator a success.

Ultimately, the goal of this SmartZone incubator is to create and foster an information technology community in East Lansing which will create jobs, sustain the high quality of life that East Lansing prides itself on, and overall, make the city a great place to live and work.



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