

Stoughton, Wisconsin

Business Incubator Feasibility Study

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Acknowledgements

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Introduction

The City of Stoughton, Wisconsin is interested in exploring the possibility of establishing a business incubator. Before investing resources into the project, the City felt it was important to examine the local and regional demand for incubator space and services, and determine the type of business incubator that would best fit within the regional economy. This study was commissioned to answer those questions.

What is a Business Incubator?

A business incubator is an economic development tool intended to foster successful start-up ventures by eliminating some of the barriers that often lead to the demise of new businesses. The presence of an incubator is important to the start-up business climate of a region because new businesses have a 51 percent failure rate within the first five years of opening¹. To help improve the rate of success, incubators often offer commercial space at reduced rates, shared equipment and some form of business mentorship. However, the equipment and services offered to tenants can vary significantly depending upon the focus of the incubator.

Why are Business Incubators Important?

Entrepreneurs and small businesses are critical drivers of economic growth. According to a study completed for the US Small Business Association in 2004, small firms (with fewer than 500 employees) employed almost 51 percent of the private sector, and they generated 51 percent of non-farm private gross domestic product. The same study revealed that, in 2004, small firms had \$1.9 trillion in payroll. Given their important role in the US economy, developing new small businesses is a strategic way to foster economic growth within a community².

Purpose of the Study

The primary purpose of the business incubator feasibility study is to answer three questions:

1. Is there a market need for a business incubator in Stoughton, Wisconsin?
2. What market niche should a Stoughton business incubator fill?
3. How should a Stoughton business incubator be structured and operated?

Each of the components needed to address those questions is explained in more detail below.

Determine Incubator Feasibility

A business incubator, much like an attorney or accountant, provides a service that needs to be consumed by a target market. In the case of an incubator, the target market is not individuals or households, but entrepreneurs and start-up business ventures. Therefore, before a community pursues the establishment of an incubator, there should be some assurance that there is a demand for incubator services. To determine the demand for a business incubator in Stoughton, the study examined three components of regional start-up business environment.

1. Entrepreneurial and innovation potential
2. Gaps within real estate supply and start-up business services
3. Existing regional incubator environment

¹ US Census. Longitudinal Study

² Kauffman, The Foundation of Entrepreneurship (2009). *The Anatomy of an Entrepreneur: Family Background and Motivation*.

Identify Market Niche

Business incubators are typically either general in nature with highly flexible space and no criteria for start-up business entry, or targeted at specific industry sectors. Because of significant regional incubator activity, general incubators are often the most appropriate choice for smaller communities like Stoughton. It is important to consider the potential of creating a niche incubator in order to fit within the larger incubator environment. The process for identifying a potential niche includes the following analysis:

1. Identify industry sectors and subsectors with most robust economic infrastructure.
2. Determine industry sectors and subsectors that are primary drivers of economic growth.
3. Identify industry sectors that are best positioned to receive angel and venture capital.
4. Determine which sectors and subsectors provide the lowest barrier to entry for start-ups.

Provide Recommendations for the Structure and Operation of an Incubator

Based on the findings from the previous components, the study will provide basic recommendations regarding structure and operation of a potential business incubator in Stoughton. The purpose of this section is to provide Stoughton with a roadmap to guide them should they move forward with incubator planning. At this early stage, however, the recommendations should not be viewed as absolute; many substantive issues will have to be address in more concrete terms when plans are actually being finalized.

Contents of the Feasibility Study

The feasibility study is segmented into two parts. Part One includes a summary of the feasibility and industry analysis as well as a discussion on all of the incubator strategies and recommendations. The contents of Part One will address all the questions and components discussed above. Part Two contains a technical explanation of the analysis, methodology and industry data. Part Two also includes all of the data tables and graphs that were created to aid in understanding the Stoughton regional economy.

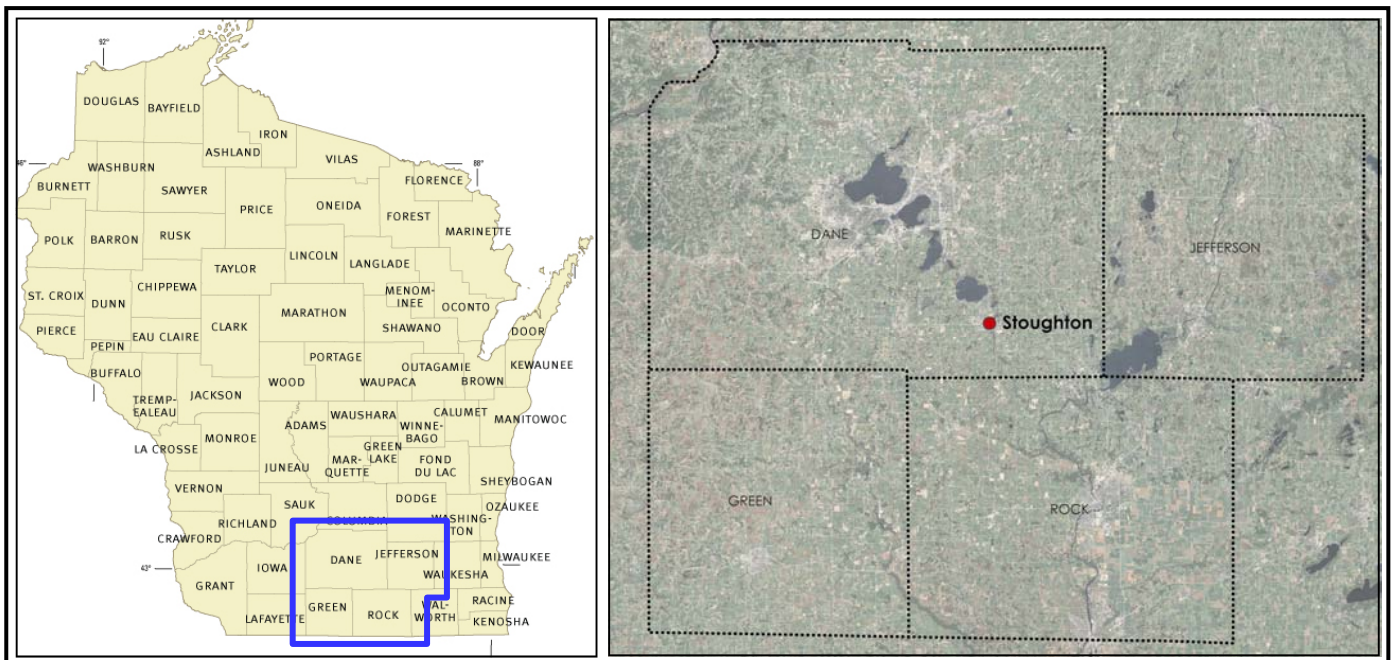
**PART ONE:
Summary of Analysis and Strategies for a
Successful Stoughton Business Incubator**

Stoughton Study Area

The study region of interest is the area from which the subject community draws its workforce. Although it may be beneficial to define the study area apart from political boundaries, the business data that will be critical to the incubator study is reported at the county level. Therefore, the study region must conform to county boundaries. To determine Stoughton's dominant worker-shed, this study used employee commuting patterns from the United States Census.

The Census commuting patterns track the number of individuals who commute into and out of a community for work. The data revealed that 95 percent of all employees working within Stoughton come from Dane, Jefferson, Green or Rock County, with Dane and Rock Counties accounting for most of the employees. This spatial distribution is logical when one considers the location of Stoughton in the southeast corner of Dane County, and roughly in the middle of these four counties. Given these data, the four-county region around Stoughton will be used as the study region for this report. All of the business information gathered and presented will come from this region.

Map 1: Stoughton Study Region



Incubator Feasibility

The analysis of incubator feasibility is built on the evaluation of business incubator demand and supply. The issue of market potential and feasibility is the most important element of this study because it will determine if investment in an incubator should be further considered. To understand the relationship between demand and supply of an incubator facility and incubator services, this study examines three variables:

1. Level of entrepreneurial interest and potential (Demand)
2. Gaps within existing real estate supply and start-up business services (Supply)
3. Number and type of existing regional incubators (Supply)

I. Entrepreneurial and Innovation Potential

The first component of the feasibility analysis examines the entrepreneurial environment and potential for innovation present in the Stoughton region. This is a critical piece in determining feasibility because a business incubator can only be successful if there is regional demand from entrepreneurs looking to form start-up businesses. This section looks at regional demographic trends that signal entrepreneurial potential, as well as local entrepreneurial activity and other measures of innovation.

Human Capital

Growing a local economy by fostering start-up businesses requires that the available talent pool is able to produce motivated entrepreneurs. Although difficult to measure, recent research in demographic and psychographic characteristics has shown some similarities among entrepreneurs. Therefore, where possible, the characteristics of typical entrepreneurs can be compared to the demographic of the Stoughton study region.

Age and Education

Research into entrepreneurs and small business owners has revealed that 63 percent of businesses founders are between the ages of 35 and 54, and 34 percent of them have a bachelors or associates degree. When comparing education levels to national attainment, it becomes clear that entrepreneurs are more highly educated than the general population where only 22 percent of the population over 25 years of age has a bachelors or associates degree. An additional 18 percent of business founders have a graduate degree (Masters/PhD) while only nine percent of the national population over 25 years of age has an advanced degree³.

Understanding the age and educational levels of typical entrepreneurs allows for a comparison to the Stoughton study region. Approximately 30 percent of the region's population is between the age of 35 and 54, the same as the State of Wisconsin distribution. In terms of educational attainment, 28 percent of the population in the region over the age of 25 has a bachelors or associates degree compared to only 23 percent of the State of Wisconsin population over 25. Likewise, 12 percent of the study region population over the age of 25 has a graduate level degree while only seven percent of the state population over the age of 25 possesses a similar degree. The data show that the study region, while average in age distribution, is considerably more educated than the state as whole. Therefore, there should be a larger pool of individuals available who fit the entrepreneurial age and educational model⁴.

Years of Experience

Data show that 54 percent of entrepreneurs have 10 or more years of experience in the industry in which they start a business. Although an important statistic, data are not available on worker experience on a county by county basis. However, the Wisconsin Department of Workforce Development does track industry turnover rate. Turnover rate is a measure of how many employees an industry loses every quarter. For example, if a company averages 100 total employees during a given three month period, and ten employees had to be replaced during that same time period, that company's employee turnover rate would be 10 percent. Although not a perfect measure, employee turnover can be used as a proxy for length of experience

³ Kauffman, The Foundation of Entrepreneurship (2009). *An Overview of the Kauffman Firm Survey: Results from the 2004 -2007 Data*. Note: the numbers presented in the document represent all new businesses started in the year 2004.

⁴ United States Census Bureau. 2000 Census. Although all of the numbers presented in the document are from the 2000 census, where possible the data was compared to current estimates. The comparison reveals that no significant changes in make-up have occurred.

because the lower the turnover rate, the longer period of time the average employee will remain at a company. Table 1.1 below provides the approximate average employee turnover for the time period between quarter one of 2004 and quarter three of 2008 in the study region and the State of Wisconsin as a whole.

According to the employee turnover rates, it appears that the study region and the state do not have significantly different turnover rates in any of the categories. Overall, the study region has lower average turnover rates in four of the categories, while the state is lower in five of them. Manufacturing has the biggest disparity, but the difference is still less than one percent.

Table 1.1: Approximate Employee Turnover Rates (2004 – 2008)

	Stoughton Study Region	State of Wisconsin
Manufacturing	5.7%	5.0%
Wholesale Trade	6.3%	6.1%
Finance & Insurance	5.9%	6.1%
Real Estate	11.2%	10.1%
Retail	10.1%	10.8%
Construction	11.0%	10.5%
Transportation	7.9%	8.5%
Utilities	2.8%	2.8%
Services	7.9%	8.1%
Natural Resources & Mining	11.2%	11.8%

Source: Wisconsin Department of Workforce Development, 2004 Q1 thru 2008 Q3 average

Although not shown in this document, it should be noted that if only the 2008 turnover was analyzed, the study region would have lower turnover rates in all but two sectors -- manufacturing and real estate. This may indicate that the study region is more stable through bad economic conditions than the state as a whole.

Personal Wealth

According to available data, the average start up firm in 2004 injected approximately \$80,000 of capital into their new venture. Of that \$80,000, almost \$30,000 was owner equity.⁵ This clearly identifies the importance of personal wealth and the ability of an entrepreneur to finance a large portion of their start-up business. To gauge the availability of personal equity, data on median household net worth was gathered for the study region and the State of Wisconsin. The data show that in 2009, although the overall median household net worth was similar between the study region and the state (\$128,100 for the study region versus \$114,757 for the state), the data for households between the ages of 35 and 54 (the age cohort from which most entrepreneurs emerge) showed greater disparity as seen in Table 1.2. This suggests that potential entrepreneurs in the study region would be able to more readily finance a new start-up than would be expected given the state median.

Table 1.2: Median Household Net Worth (2009)

Age Cohort	Stoughton Study Region	State of Wisconsin
35-44	\$215,605	\$110,799
45-54	\$177,793	\$91,885

Source: Wisconsin Department of Workforce Development, 2004 Q1 thru 2008 Q3 average

⁵ Kauffman, The Foundation of Entrepreneurship (2009). *An Overview of the Kauffman Firm Survey: Results from the 2004-2007 Data*. Note: the numbers presented in the document represent all new businesses started in the year 2004.

Displaced Workers

A common source of entrepreneurs is displaced workers who have extensive industry knowledge and motivation to start a business. Although detailed local statistics are not available, Table 1.3 shows national unemployment statistics by occupation according to the January 2010 jobs report.

Table 1.3: Unemployment Rates by Occupation - January 2010

	Total Number of Unemployed Workers (Jan. 2010) <i>in thousands</i>	Unemployment Rate (Jan. 2010)
Total (16 years and older)	16,147	10.6%
Management, Business and Financial Operations	1,168	5.2%
Professional and Related Occupations	1,593	4.9%
Service Occupations	3,045	11.4%
Sales and Related Occupations	1,709	10.1%
Office and Administrative Support Occupations	1,767	9.0%
Farming, Fishing and Forestry	273	25.9%
Construction and Extraction	2,276	24.6%
Installation, Maintenance and Repair Occupations	532	10.3%
Production Occupations	1,343	15.4%
Transportation and Material Moving Occupations	1,405	15.0%

Source: US Bureau of Labor Statistics (Last Modified February 5, 2010)

The unemployment statistics clearly show that, in terms of total number of displaced workers, service occupations have the greatest number of unemployed. However, as a percentage of total workforce in an occupation, natural resource fields, construction, production and transportation have considerably higher unemployment than the total rate.

Anecdotally, Madison Area Technical College (MATC) has seen enrollments increase by more than 10 percent in the last year. According to MATC employees, much of that increase can be attributed to displaced workers. This base of individuals will likely serve to increase entrepreneurial potential in the area.

Local Entrepreneurial Activity

The previous section discusses the quantifiable factors that can help predict the amount of entrepreneurial potential within an area. It is important to understand the level of entrepreneurial activity currently occurring within the region; however, it is almost impossible to quantify that current activity with available data. Because of that challenge, this study relied on the expertise and inside knowledge of professionals intimately involved with entrepreneurs in the area.

The most common observation among interview subjects is that Stoughton and the Stoughton area have more current entrepreneurial activity than may be expected given its size and characteristics. An area resident who teaches start-up business classes reports that classes taught in Madison typically enroll a large number of Stoughton residents, and over the last year, the course taught in Stoughton has more than doubled in size.

In terms of the type of entrepreneurial activity observed in Stoughton, the results are mixed. Local bankers who regularly deal with start-up businesses seeking financing report that retail entrepreneurs are the most common followed by individuals interested in starting skilled trades (carpenter, plumber, etc.). Although not the most common in terms of total numbers, other individuals report that Stoughton has a higher than expected concentration of entrepreneurs interested in starting manufacturing businesses. Lastly, a key trend in entrepreneurship regionally is the significant increase in the number of individuals wishing to start “self-employed” businesses. In any future Stoughton business incubator, it will be important to cater to self-employed businesses to some extent. The impact of such businesses on the local economy is often ignored in economic development, but they are very important to regional growth and innovation.

Measures of Innovation

Innovation economies are typically hotbeds of start-up potential and entrepreneurial activity. Although the definition and methods of measuring innovation are often debated, there are a few respected organizations that frequently attempt to quantify innovation within a region, or rank areas based on level of innovation. Because Stoughton is not a large enough community to appear by itself in these reports, the Madison Metro Area and Dane County are used as proxies. Below is a discussion of two such sources.

Innovation in American Regions Project

The Innovation in American Regions project represents a comprehensive and data driven approach to measuring innovation within every county in the US. The project is the collective effort of the Purdue Center for Regional Development, the Indiana Business Research Center (University of Indiana Kelly School of Business), Strategic Development Group, Inc., the Rural Policy Research Institute, and Economic Modeling Specialists, Inc. The purpose of their work is to provide an innovation index for each county based on human capital, economic dynamics, productivity and employment, and economic well-being. For the purpose of this study the Dane County index was used. The index and all its components are based on a system where the national average is 100.0.

Total Innovation Index – Dane County’s overall innovation score was **105.3**. This is the highest index in the State of Wisconsin and among the highest in the Midwest. As a point of comparison, the innovation indices from surrounding metro areas were also queried:

- Milwaukee Metro Area: 97.1
- Oshkosh-Neenah Metro Area: 97.9
- Fond du Lac Metro Area: 86.9
- Rockford Metro Area (IL): 89.1
- Dubuque Metro Area (IA): 86.7
- Minneapolis-St.Paul-Bloomington Metro Area: 118.4
- Chicago-Naperville-Joliet Metro Area: 103.3

It is clear from this list that Dane County is among the premier locations in the three state area in terms of innovation potential. The individual components of the innovation index provide additional insights into the entrepreneurial strengths of Dane County.

Human Capital – Used to quantify the innovation capacity of a population and labor force. The study combines data on educational attainment, population growth rates, high-tech employment share and technology-based knowledge occupations to create the human capital metric. The score in human capital is the highest of all the metrics in Dane County’s innovation index. Dane County Human Capital Index: 124.1

Economic Dynamics – Measures the resources available locally to entrepreneurs and businesses that promote innovation. This measure includes data on available venture capital, money spent on research and development compared to employee compensation, availability of broadband, establishment churn (establishment births, deaths, expansions, and contractions), and establishment size. *Dane County Economic Dynamics Index: 79.4*

Productivity and Employment – This component examines economic trends and regional desirability to gauge the impact innovation has had on the area. Included in this measure are statistics on change in high tech employment, overall job growth, gross domestic product per worker and number of patents per 1,000 workers. *Dane County Productivity and Employment Index: 113.1*

Economic Well-Being – Built on the assumption that innovative economies improve economic well-being for all residents, this measure looks at variables impacting standard of living. Data combined for this measure include average poverty rate, unemployment rates, migration patterns, per capital personal income growth, and compensation levels. *Dane County Economic Well Being Index: 103.4*

The only innovation measure where Dane County lags behind the national average is economic dynamics, the measure of local resources available to entrepreneurs and innovators. Fortunately, that measure is also the one where a focused, local entrepreneur support program, including a business incubator, could have the most positive impact.

Fast Company – Fast Cities Rankings

Fast Company is a respected business publication that focuses on technology, digital media, innovation and progressive business management. They regularly, although not annually, produce global rankings of what they term “Fast Cities.” In 2005, Madison was identified as one of the top ten “Fast Cities” because of its creative culture, focus on technology and business opportunities. In 2007, the list was segmented into specific sub rankings. Those ranking found Madison one of four cities worldwide identified as a “Start-Up Hub.”

Although these rankings are subjective, they are important because they paint a picture of the Madison area that influences venture and angel capital markets and their perception of the area’s entrepreneurial value. A favorable perception clearly is a benefit for growing companies.

Summary of Entrepreneurial and Innovation Potential

Both quantitative data and qualitative data were combined in the attempt to determine the level of entrepreneurial and innovation potential that exists in the Stoughton study region. Almost all the different layers of analysis point to the likelihood that the area has above average start-up business capacity. In particular, the study area possesses a higher concentration (than the state as a whole) of individuals who have the education and personal wealth that are trademarks of entrepreneurs. Also, Dane County was ranked as one of the most innovative counties in the Midwest by a comprehensive innovation index. Anecdotally, people involved with start-up businesses report that Stoughton has more entrepreneurial activity than would be expected given its size, and there is a large pool of recently re-educated displaced workers that bring skills and ideas to new business ventures.

II. Gaps in Available Real Estate and Start-Up Business Services

The second component of incubator feasibility is the supply of inputs required for start-up businesses to thrive. In particular, new businesses require affordable space and business support services such as business plan assistance, mentoring, financial advisors, accountants, tax attorneys, etc. Because a business incubator would likely provide both subsidized commercial space and some package of subsidized or free business support services, it is important to determine the level at which these inputs are currently being supplied.

Real Estate Availability and Cost

As start-up businesses grow, there typically comes a time when they must locate in professional space if they hope to continue to advance. Although companies are usually somewhat established by the time they require professional space, it still typically occurs at a point where the cost of that space can be a significant burden on continued growth. An incubator can address that barrier by offering subsidized space; however, in order for subsidized incubator space to be valuable, the existing market space must be unavailable, too costly or both.

Interviews with real estate professionals and cataloging of actual space were used to gauge the availability and cost of commercial real estate. Both methods returned very similar results. The data suggest that office and retail space is readily available with rents that range from about \$8.00/sf annually for older strip development to \$12.00/sf annually for newer office/retail space. Some new office-only developments have rents above \$15.00/sf annually. In terms of quantity, there appeared to be much more available at the \$10.00 to \$12.00/sf level than the \$8.00/sf level.

Unlike the commercial/office sector, there seems to be very limited manufacturing, warehouse and flex space available in Stoughton, but plenty of availability in other communities surrounding Madison -- primarily Deforest, McFarland and Sun Prairie. In those communities, the rents are all remarkably similar with an average of just under \$5.00/sf annually.

Although availability of space does not seem to be an issue in Stoughton or the surrounding communities, cost may be. In order to determine whether these lease rates are within the reach of start-up businesses, we can compare them to the average lease rates found in business incubators across Wisconsin. In 2007, the Wisconsin Business Incubation Association sponsored a survey of all Wisconsin incubators.⁶ That survey revealed the following average incubator lease rates.

	Anchor Tenant Rates	Non-Anchor Tenant Rates
■ Manufacturing	\$6.03	\$6.69
■ Service	\$8.96	\$8.64
■ Warehousing	\$9.64	\$8.73
■ High -Tech/Research and Development	\$9.60	\$9.39

Comparing the cost of available office/commercial space in Stoughton and the average cost of incubator space shows that office/commercial space in an incubator is approximately \$2.00/sf less expensive than market rate. Even more important is the difference between the size of available space in an incubator and on the open market. Currently, the smallest available

⁶ Thomas S. Lyons, Ph.D. *Insights from the 2007 Survey of Wisconsin Incubators*

space in Stoughton is 350 square feet; which, although small, is typically too much space for a start-up service business. In an incubator, a typical office size may be as small as 150 square feet. Comparing the expense of those two spaces, the market rate space would cost approximately \$3,850 annually compared to \$1,275 for the space in the incubator, a \$2,500 savings for start-up businesses.

In terms of manufacturing, warehouse and flex space the average incubator lease rates are actually more expensive than available space in Dane county communities. Because an incubator typically offers manufacturing/flex spaces that are much smaller than would otherwise be available, it is not surprising to find that they are slightly more expensive than market rate facilities. Despite the seemingly affordable rates for manufacturing/warehouse/flex space, the lack of space in Stoughton and the need for much smaller space than is typically available is an indicator of the importance of providing incubator space for businesses that require manufacturing space, warehousing or flex space.

Availability of Business Support Services

Business support services include the types of expertise required by businesses in order to be successful. Very common business support services include lending institutions, accountants, attorneys, marketing professionals, etc. There are also services more specifically targeted at start-ups such as business plan assistance. The availability of these types of services is important to the success of new businesses and the health of existing businesses.

Information regarding the availability of business support services was gathered primarily from interviews with individuals involved with business start-up and support activities. Uniformly, every person interviewed felt that the Stoughton area offers a robust and complete network of necessary business support services. Availability, however, is only part of the equation for start-up businesses; in order to be attractive to start-ups, services must also be available at very affordable rates.

In terms of affordable services targeted at start-ups, the Stoughton Chamber of Commerce offers services for new businesses, as does the University of Wisconsin Small Business Development Center. Additionally, an area resident, who is an expert in start-ups, offers classes in Stoughton. These are valuable resources; however, all the interview subjects who work with start-up businesses said that virtually none of the entrepreneurs they come in contact with are aware of the available services. Ultimately, the research shows that Stoughton does not necessarily have a gap in support services, but there does appear to be a less than effective delivery system for those services.

III. Existing Regional Incubators

The Stoughton study region, primarily Dane County, is already fairly densely populated with business incubators. As such, it is important to understand the existing regional offerings in order to place the Stoughton incubator within market while not duplicating already supplied incubator space. What follows is a brief overview of each incubator within the study region. Given the ever changing landscape of business incubators, this list may not be exhaustive.

Dane County

The following table provides information on all of the incubators in Dane County. The information was gathered from the 2009 MG&E report on business parks and incubators. Under the Amenities/Services section, “shared office space” refers to common areas like kitchens, meeting rooms, break rooms, etc. “Shared office equipment” refers to common technology such as copiers, fax machines, etc.

Incubator	Location	Business Nature	Rent	Amenities/Services
Faraday Center – Lower Lab	Fitchburg	Biotech/High-Tech Lab (2,540 sf)	n/a	Shared office space
Genesis Enterprise Center	Madison	General (70,000 sf)	Office: \$10.50 - \$12.00 Flex:\$7.50	Shared office space, business assistance, loading docks, internet
Laboratory Associated Businesses	Madison	Biotech/High-tech & General (23,000)	Lab: \$8 - \$18	Shared office space, autoclave, utilities included, Fiber-optics
Madison Enterprise Center	Madison	Office & Light Manufacturing (20,176)	n/a	Shared office space, business assistance and referrals, shared office equipment, Fiber-optics
Main Street Industries	Madison	Office & Light Manufacturing (50,000)	\$8.75 - \$9.50	Fiber-optics, business support, shared office space, shared office equipment, loading docks
Metro Innovation Center	Madison	Information Technology, Software, Engineering (6,000)	\$950 to \$1,450 per month per suite	100-MB to 1-GB dedicated connection to UW, shared servers, shared office space, access to UW researchers and resources
MGE Innovation Center	Madison	Biotech, High-Tech (117,000)	n/a	Shared office equipment, internet
Midwest Biolink Commercialization and Business Center	Madison	BioAg, R&D, Plant/Crop Science (31,000)	n/a	Conference room, wet lab, greenhouse, controlled environment chamber
Network222 Business Incubator	Madison	Office/Small Business (6,000)	n/a	Shared office space, shared office equipment, fiber optics
T.E.C. Center, Inc.	Madison	Tech (mainly life sciences and IT) (34,5000)	n/a	Advanced business services, shared office space, shared office equipment, , access to board of directors and MATC faculty, staff, students & facilities

<u>Available Space Totals</u>	
High Tech	177,040 square feet
BioAg	31,000 planned square feet
IT and Software	6,000 square feet
General Office/Manufacturing	146,176 square feet

Jefferson County

Jefferson Area Business Center:

Located in Jefferson, the Business Center provides 120,000 square feet of flexible manufacturing space as well as administrative support, marketing services, printing, warehouse space and personnel/employee solutions.

Rock County

Beloit Fine Arts Incubator:

Located in downtown Beloit, the Fine Arts Incubator assists artists in developing entrepreneurial skills and provides a space for them to create, display and sell their art.

Janesville is Pursing a new manufacturing incubator:

The City of Janesville is interested in developing a 25,000 square foot incubator space to support small start-up manufacturers.

Beloit Kitchen Incubator (in development)

Green County

Monroe Kitchen Incubator (in development)

The type of incubator space available in the region appears to touch on all the important regional industries. Based purely on the existence of other incubators, there does not appear to be any obvious gaps that need to be filled. This conclusion was supported by numerous interviews with individuals involved with the other regional incubators. The amply supply and balance of available incubators does not mean that an additional incubator in Stoughton is not feasible. In fact, virtually all of the economic development professionals interviewed for this study felt that Stoughton could establish a successful incubator; however, the target niche of that incubator cannot be determined by merely looking for gaps in the larger incubator environment.

IV. Summary of Incubator Feasibility

The feasibility analysis asked three questions:

- 1) Is their sufficient entrepreneurial and innovation potential in the area to support a business incubator?
- 2) Are there gaps in the real estate market and business support services that could be filled by an incubator?
- 3) Is a business incubator in Stoughton feasible among the existing regional incubators?

Entrepreneurial and Innovation Potential

The multiple layers of analysis examined demographic traits, innovation potential and existing entrepreneurial activity. Almost all of the qualitative and quantitative data point to a region that is above average in entrepreneurial spirit and innovation potential. It is the conclusion of this study that there is the type of human capital in the study region required to support an incubator. Strategies to tap into that capital will be discussed in the Recommendations section.

Gaps in Real Estate and Support Services

After reviewing information on available commercial and manufacturing space, as well as the availability of business support services, there appears to be a gap in each which could be filled by a business incubator.

In terms of real estate, there is an ample supply of commercial and office space, but the size and rents may not be appropriate for start-up businesses, leaving a role for the smaller more affordable spaces offered by an incubator. Manufacturing space, on the other hand, is very affordable in the region, but availability is limited and the sizes are significantly larger than would be required for a start-up company. The Stoughton area also offers some affordable or free business support services targeted at start-ups, but they are not well publicized or widely known to entrepreneurs. Therefore, an incubator could serve as a centralized and visible location for those services.

Existing Business Incubator Environment

The survey of existing business incubators did not reveal any obvious gaps in terms of focus, size, services, etc. However, other incubator leaders did feel that a Stoughton incubator could be successful.

Overall, the evidence suggests that an incubator in Stoughton should be able to successfully find an entrepreneurial population to serve.

Incubator Industry Niche & Regional Economy

Based on the data examined as part of the incubator feasibility analysis, the evidence suggests that a Stoughton incubator would be a valuable part of the entrepreneurial and innovation economy without duplicating or over-saturating the regional market. Another important consideration for the future incubator is its structure in terms of industry focus. Although many incubators are general in nature and accept businesses in any sector, others are highly focused and provide services targeted at specific industry segments such as biotech, food production or bio-ag. Because the industry niche targeted by a business incubator impacts the types of services provided, and even the physical construction of the facility, it is important to consider the type of incubator best suited for Stoughton. It should be noted that this analysis is not intended to preclude the possibility of a general incubator, but is intended to determine if a niche exists on which a Stoughton incubator could capitalize.

In order to determine if Stoughton could support a specialized business incubator, the study looks at the concentration and make-up of the regional economy⁷, industry characteristics, industry trends and local assets. Combining these layers of analysis reveals industry strengths and opportunities that may impact the focus of the Stoughton Incubator. The examination of potential incubator niches includes the following elements:

Industry Concentration and Distribution

In this analysis, industry concentration is used as a proxy to measure the presence of thriving industry supply chains, a well developed knowledge base, and work force. In short, measuring

⁷ To gain a thorough understanding of the regional, the study looked at nine industry sectors that contain over 80 subsectors representing all of the businesses within the study area. Because of the complexity and importance of manufacturing, a more detailed analysis of specific manufacturing subsectors is also included. For a complete list of included industry sectors and subsectors see page 37 (general sectors) and 44 (manufacturing subsectors) .

industry concentration helps determine the level of regional specialization and the amount of economic infrastructure surrounding each industry. This is important to a business incubator strategy because, as new businesses grow, they will need to utilize the existing economic infrastructure provided by mature firms. Therefore, the higher the existing industry concentration, the better the environment to serve the needs of new businesses during their growth. In addition, statistics show that 65 to 80 percent of new jobs are created from spin-offs of existing businesses. Therefore, the more concentrated an industry, the more likely new businesses will emerge from that industry. This section also includes a geographic analysis of how different manufacturing subsectors are dispersed through the region and how they can be grouped by their focus on technology.

Economic Drivers

As businesses grow and eventually graduate from the Stoughton business incubator, they will become an important part of the local and regional economy. Ideally, the greatest return on investment in the incubator will be growing businesses that are likely to develop into an establishment that can provide future benefits such as job creation, high wages and regional economic growth. To better understand what businesses could offer those benefits, this section determines which industry sectors and subsectors are historically the primary economic drivers in the region. In addition, the identification of primary economic drivers may reveal an opportunity to support those important industries through means other than directly incubating future start-ups.

It should be noted that this analysis is not meant to imply that only start-ups with the potential to grow into large companies should be targets for incubator investment. In fact, recent trends in area entrepreneurial activity suggest the number of self-employment start-ups (no intention of having employees) is increasing. These businesses are important parts of the local economy and should be encouraged.

Barriers to Entry

The ability for an entrepreneur to easily enter an established industry is somewhat dictated by the structure of that industry. For example, if an industry is comprised of only a few very large businesses that dominate the local supply chain, it will be difficult for a new entry to capture the market share needed for success. On the other hand, an industry that is comprised of many smaller firms provides more opportunity for a start-up to develop the relationships and customers necessary to succeed. Therefore, business within the second type of industry will offer greater start-up potential for entrepreneurs, and thus would be good candidates for an incubator.

Growth Opportunities and Industry Trends

Lastly, because the economy is rapidly changing, it will be important that start-ups have future growth prospects and are able to respond to emerging trends, or able to help existing industries grow and respond. This part of the analysis focuses specifically on manufacturing and some service subsectors.

For a more thorough and technical examination of the data involved in this section, please see Part Two of this Document: Technical Analysis and Data. The information presented in this section includes the abbreviated conclusions only.

I. Industry Concentration and Distribution

Measures of Industry Concentration

The analysis of industry concentration uses employee, firm and sales data to determine the level of activity occurring within each sector and subsector. As discussed earlier, the concentration information is used as an approximate measure of the amount of economic infrastructure, which exists within the region for each industry sector.

When examining the nine broad industry sectors, it is immediately apparent that the study region is dominated by service based firms which account for approximately 40 percent of total firms, employees and sales. Although significant, the study region's distribution closely mirrors the national statistics. In fact, the concentration statistics for every major industry sector are remarkably similar to national averages. From a concentration perspective, the region is very well diversified and has a balanced economy that is statistically unremarkable.

Examining the concentration of the detailed manufacturing subsectors reveals similar results. From the perspective of firms concentration, the area looks very similar to national averages. However, when comparing density of employees and sales, **food product manufacturing, measuring and analyzing instruments** and **transportation equipment** have higher than expected concentrations of employees and sales, but not businesses. This means that each business in the region that does exist in those sectors outperforms national averages.

Overall, the analysis of concentration does not reveal any clear leaders in terms of regional specialization and the resulting economic infrastructure. At the same time, the analysis shows that virtually all industry sectors and subsectors are well represented. Although the concentration analysis does not point to a potential incubator niche, it does not discourage the pursuit of any industry. To reframe the concentration analysis, the next section examines technology in industry and how technology is distributed across the region.

Industry Spatial Distribution and Clustering

Examining concentration based on industry sector did not readily reveal a specialization or niche that could be leveraged by a Stoughton business incubator. Therefore, it may be beneficial to examine concentrations and clustering from a different perspective. The following is a discussion of technology in manufacturing and how those different levels of technology are dispersed through the study region. The maps that correspond with these data can be found in Part Two of this document.

Impact of Technology in Industry

One of the key forces behind the changes in industry is technology and its role in innovation. A commonly held belief is that "high-tech" industries are the key engines of economic growth and prosperity. Traditionally, "high-tech" has been defined by determining how much investment, as a percent of total, is put into research and development. This has resulted in policy decisions that primarily look to foster high-tech businesses. Research, however, has shown that low- and medium-tech (LMT) industries are still responsible for the majority of growth and employment in developed countries⁸. Unlike high-tech industries, innovation in LMT industries comes from the internal transformation of sectors and products, rather than the development of new sectors. In addition, innovation in LMT industries is based on a business's knowledge base, financial assets and materials/machinery, as opposed to just its expenditures on R&D.

⁸ PILOT Project Consortium, (2005). "Low-Tech" Industries: Innovativeness and Development Perspectives.

Research has also shown that LMT industries are often important customers of high-tech businesses and are, therefore, closely linked to high-tech sectors. The relationship between high-tech and LMT sectors means that the ongoing vitality of the high-tech sector is somewhat dependent on the continued growth of LMT businesses. Also, knowledge sharing between high-tech and LMT industries can be important to the innovation of existing LMT businesses. The following shows the traditional method of classifying industries based on use of technology. This list includes both manufacturing and service industries. For the remainder of the study, low- and medium-tech industries will be combined into the LMT category because of their similarities in comparison to high-tech industries.

High-Tech

- Chemicals and allied products
- Industrial machinery and equipment
- Electrical and electronic equipment
- Instruments and related products

Medium-Tech

- Petroleum and natural gas related operations
- Cigarettes
- Nonferrous rolling and drawing
- Transportation equipment manufacturing
- Computer and data processing services
- Engineering and architectural services
- Research and testing services
- Management and public relations
- Textile goods
- Pulp mills
- Paper products

Low-Tech

- All other industries

Distribution of Technology in the Study Region

Based on the above classifications of industry, the location of each firm within each manufacturing subsector was mapped⁹. Using those maps, each subsector was given a percentage of total businesses that fell within Middleton, Madison and Monona. Table 1.4 shows the distributions segmented by high-tech industries and LMT industries.

The distribution information clearly shows that companies in the high-tech sectors are far more concentrated in the Madison area than LMT industries. In fact, the average concentration of high-tech companies around Madison is almost 20 percent higher than the LMT companies, and if industrial and commercial machinery is removed (clustered around Beloit and Janesville), the difference in average concentrations grows to 27 percent. Although this may not be surprising, Stoughton's location in the middle of the high-tech belt around Madison and the concentration of LMT industries around Beloit and Janesville may present opportunities for an incubator to serve as a venue for technology transfer and innovation in the LMT industries via advances made in high-tech industries.

⁹ Location information was gathered using 2007 ES202 data. Only 14 of the 20 manufacturing subsectors had businesses that were in the region.

Table 1.4: Distribution of Industries by Technology Classification

	Percentage of Firms Located in Middleton, Madison and Monona
High-Tech Industries	
Electrical and Electronic Equipment	47%
Measuring and Analyzing Instruments	60%
Chemical and Allied Products	49%
Software Publishing	66%
Industrial and Com. Machinery and Computers	17%
Average	48%
Low-Medium Tech Industries	
Textile/Apparel Products	25%
Food and Kindred Products	29%
Printing and Publishing	53%
Furniture and Fixtures	40%
Metal Fabrication	15%
Stone, Clay, Concrete and Glass	24%
Primary Metal Industries	13%
Paper and Allied Products	33%
Rubber and Plastics	32%
Average	29%

Source: 2007 ES202 Data, Vierbicher

II. Economic Drivers

The analysis of economic drivers examines which industries serve as the primary regional growth engines and which excel in job creation. The purpose of the analysis is to gauge what potential exists within each of the industries if they were to graduate from the incubator and grow within the Stoughton economy. In addition, the identification of economic drivers also helps determine what industries should be supported by entrepreneurial activity, even if the incubator is not specifically targeted toward the driver industries. As mentioned earlier, this section is not intended to suggest that only start-ups with high potential of growth should be the focus of the business incubator. In fact, self-employment start-ups are critical to a local entrepreneurial economy and should be encouraged via local start-up services and the incubator. Instead, this section is just another layer of analysis that helps create a fuller picture of the local business environment.

Economic Growth Engines

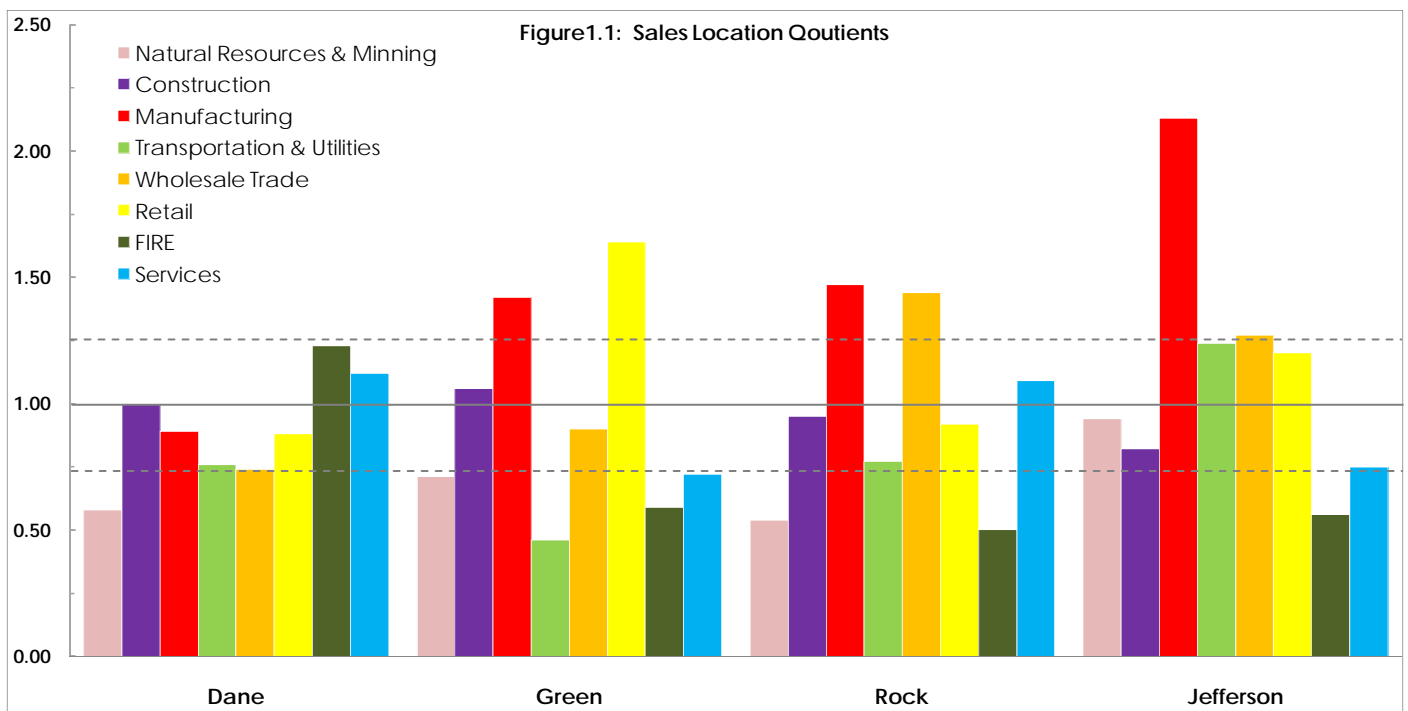
Economic growth occurs when “new” money is brought into a local or regional economy by selling goods and products outside its borders. In other words, export businesses create wealth by transferring money into a region where it can then circulate locally. To examine the Stoughton Study region’s primary economic growth engines, the feasibility study used a combination of sales data and location quotients.

Location Quotients

A location quotient is a measure of industry concentration within a study area compared to the nation as a whole. Typically a location quotient is interpreted in the following way:

- A location quotient of 0.75 or less means the industry is not able to meet local consumption through local production and, therefore, this sector must import goods.
- A location quotient of 0.76 to 1.24 means the industry is largely meeting the local consumption through local production; this is called the subsistence range.
- A location quotient of 1.25 or more means the industry's local production is exceeding local consumption and excess product is being exported. The production above local consumption is what makes up an industry's export base. Because economic growth is driven by "new" money, this analysis is used to identify export based businesses.

Because the Study region is large and very diverse, location quotients were examined for each county:



- In three of the four counties, manufacturing is a strong export-based industry.
- In Green County, approximately 30 percent of manufacturing sales are attributable to export.
- In Rock County, approximately 32 percent of manufacturing sales are attributable to export.
- In Jefferson County, approximately 53 percent of manufacturing sales are attributable to export.

The sales data coupled with the estimation of export activity reveals that manufacturing in general is likely the primary driver of economic growth within the region. Public administration (government jobs) was not included in the analysis. If it were, it would likely have been a leader in every category because of the presence of state government and the University of Wisconsin.

Examining manufacturing in detail, reveals that the **food and kindred products, furniture and fixtures** and **chemicals and allied products** all have location quotients above 1.25 and have above average sales per establishment. This means they are selling more goods and exporting more of those goods than other manufacturing subsectors.

Job Creation Potential

To determine the job creation potential for each industry sector, historic trends in employment were examined. These data revealed that manufacturing by far employs the most people per firm at 36, more than double the average of all industries combined. In addition, the concentration of firms with 20 or more employees was the highest in manufacturing at 27 percent. The service industry, the primary industry in the region in terms of raw numbers, was almost identical to the all industries average at 16 employees per firm, 12 percent of which have more than 20 employees.

In terms of wage creation, transportation and utilities had the highest average salary at \$47,900, with manufacturing a close second at \$46,200. The service industry, while much lower, was still slightly above the regional per capita income average at \$34,800.

Examining the manufacturing subsectors in more detail shows that **transportation equipment, measuring and analyzing instruments** and **food products** have the highest average number of workers per firm. Almost all of the manufacturing subsectors are above average in terms of concentration of firms with 20 or more employees and average wages.

In total, these data reinforced the importance of the manufacturing industry to the regional economy. In particular, food products, measuring and analyzing instruments, transportation equipment, chemicals and furniture appear to be among the leaders. This suggests that even if the incubator is not specifically focused on incubating new manufacturing businesses, their activities should work to reinforce and strengthen the base manufacturing economy because of its regional importance and scale.

III. Barriers to Entry

Typically, it is easier for a new venture to enter a competitive market place if the industry sector is accessible to small firms and not dominated by a few very large firms. Industry sectors with high numbers of small firms likely have easily accessible suppliers, start-up costs are not overly burdensome and only a small market share is required for success. Among all industry sectors service businesses likely have the lowest barrier to entry because the available market is significant and operational costs are typically low, meaning they can survive with limited market share. Manufacturing, while almost always more capital intensive than the service industry, does have some sectors that have a higher preponderance of small firms, and thus likely have easier start-up access. In manufacturing, the primary industries in terms of concentration of firms with less than four employees include:

- Software Publishing - 75%
- Printing and Publishing (except software) - 45%
- Measuring and Analyzing Instruments - 38%
- Lumber and Wood Products (except furniture) – 36%

The subsectors with the lowest concentration of small firms included:

- Primary Metals – 19%
- Transportation Equipment - 17%

IV. Future Industry Growth Opportunities and Trends

For a business to be successful in the long term, it is beneficial to enter an environment that has future growth opportunity. To measure future growth opportunity, Wisconsin Department of Workforce Development (DWD) industry growth projections were combined with the employee location quotients to produce a graphical representation of regional industry. The diagram can be found on page 51.

The combination of these data segments manufacturing subsectors into four categories – leaders, opportunities, mainstays and challenges. It should be noted that although both service industry and manufacturing subsectors were included in this analysis, only the “leader” and “opportunities” service subsectors are included below. Virtually all other service subsectors fell into the “mainstays” category. After each industry category, its position as a high-tech or low-medium-tech company (LMT) is identified.

Leaders

These businesses are the industry leaders because they already have an established concentration within the region and they also have good future growth prospects. These industries should be supported to ensure they can continue to serve as industry leaders:

- Furniture and Fixtures (LMT)
- Rubber and Plastics (LMT)
- Chemicals and Allied Products (High-Tech)
- Printing and Publishing (Software) (LMT)
- Social Services (Child Care, Job Training, Housing Services, etc) (LMT)
- Professional, Scientific and Technical Services (LMT)

Opportunities

These industries do not presently have a great concentration, but they do have excellent growth potential. Therefore, with the appropriate support, the opportunity industries could grow into future leaders. If possible, these industries should be fostered in an attempt to create new industry leaders:

- Stone, Clay, Glass and Concrete (LMT)
- Miscellaneous Products
- Fabricated Metal (LMT)
- Health Care Services (Ambulatory, Hospitals, Nursing and Residential Care) (LMT)

Mainstays

The mainstays do not have great future growth potential, but they are highly concentrated in the region so will likely remain a staple of the manufacturing landscape. Ensuring that these industries do not disappear from the region will be very important:

- Measuring and Analyzing Equipment (High-Tech)
- Food and Kindred Products (LMT)
- Transportation Equipment (LMT)
- Printing and Publishing – Paper Based (LMT)

Challenges

These industries are declining and do not have an existing concentration.

- Apparel and other Fabric Products (LMT)
- Petroleum Refining (LMT)
- Paper and Allied Products (LMT)
- Electrical and Electronic Equipment (High-Tech)
- Primary Metals (LMT)

- Industry and Commercial Machinery and Computers (High-Tech)
- Lumber and Wood Products (very near to being an opportunity, with a 0.8% projected decline by 2016) (LMT)

Comparing the results of the opportunity analysis with the previous sections, we see that, of the leaders, software publishing has a lower barrier to entry, and both furniture products and chemical and allied products were revealed to be primary export manufacturing subsectors. Of the industry mainstays, food products, measuring and analyzing equipment and transportation equipment all have high concentrations and are historically important job creators. Measuring and analyzing equipment also showed a low barrier to entry.

Comparing the technology classification with the identified leaders and opportunities, we see that only one leader, chemicals and allied products, is high-tech. All of the other leaders and all of the opportunities fall into the LMT category. In addition, of the mainstays, only measuring and analyzing equipment is a high-tech industry. This implies that the underlying foundation of the regional economy seems to be built on service businesses and LMT manufacturing. In addition, the industries that show the most promising growth rates, excluding emerging industries that are not yet classified, are also LMT manufacturing.

Emerging Trends in Manufacturing

The manufacturing environment is rapidly evolving. Existing businesses and new businesses will have to leverage the opportunities the new environment presents in order to remain regionally and globally competitive. Therefore, understanding the emerging trends in manufacturing will help the Stoughton business incubator identify opportunities to grow businesses positioned for the new economy, or find ways to support the evolution of existing business. The following bullet points summarize the main themes from the literature on the future of the manufacturing industry.

- There will be a strengthening of the inter-relationship between manufacturing and service sectors. For example, a rubber mold manufacturer requires designers, software, marketing, accounting, etc. Therefore, an investment in manufacturing will also benefit other aspects of the local economy and vice versa.
- Customers will continue to place more emphasis on the quality of products as opposed to the cost. Therefore, low cost mass production will, to some extent, have to be replaced with innovative product development to meet the needs of demanding consumers. This change will be exacerbated in the US because the low-cost manufacturing that does occur will continue to find low-cost locations overseas. In other words, manufacturers will have to find a profitable niche. We have already seen this trend occur in the food manufacturing industry with the rise of organic/specialty foods.
- The likely rise in energy prices will place more emphasis on local production of goods.
- The continued success of American manufacturing will depend on a shift towards increased agility, flexibility, fast time to market, automation and mass customization.
- Industry must continue to develop new strategies and designs to reduce waste and energy-use. In order for the move towards sustainability to be readily adopted by new industry, it must result in cost performance and customer value.

In order for established LMT industries to make strides towards the new paradigm of manufacturing, they will need to invest in innovative sourcing, production and delivery methods and strategies. As discussed earlier, the ability for an LMT industry to innovate is typically dependent on its knowledge base, available financial and human assets, and existing

machinery and materials. The investment on the part of an LMT industry to exploring and incorporating innovation in their already established processes, especially when combined with the time and expense of testing and commercialization, can be a challenging commitment.

V. Conclusion From Niche Analysis and Examination of Regional Economy

The analysis of the local regional economy, its primary growth drivers, job creators and infrastructure did not yield a specific industry sector that should be pursued as a specialized incubator niche. However, when the analysis was reframed as an examination of technology and innovation, two driving forces in the new global economy, the data showed a gap that could be filled by a strategically developed Stoughton incubator. Specifically, the analysis revealed an opportunity for the Stoughton incubator to serve as hub for innovation and technology transfer between start-up businesses and LMT industries.

Stoughton, unlike the hub of incubators clustered around Madison, is ideally located geographically to build networks between high-tech clusters and LMT industries. In addition, the region is built on a foundation of LMT industries that must innovate in order to stay competitive in the global market place. Although innovation is a focus of numerous other economic development efforts in the region, in those instance the focus seems to be on innovating new products and services by supporting R&D, the innovation model used by high-tech businesses. Because LMT industries incorporate innovation through different means, those efforts do not focus specifically on their needs. The Stoughton business incubator could provide that service and work to encourage and incorporate innovation and technology in some of Wisconsin's most important industries.

What is Innovation?

Innovation and innovation based businesses have many different definitions. In its simplest form, innovation is the organizing of equipment and workers in new ways, using new technology. Innovative businesses are those companies that use human and physical capital in a way that allows them to offer different products or services, or to offer existing products and services more efficiently or with added value to the consumer.

Why is Innovation Important in Stoughton?

A new era of globalism and global business competition means technology, efficiency and new ideas are critical to the long-term success and growth of all industry sectors. Seth Goldin from *Fast Company* framed the shift in the global economy in this way: "The first 100 years of our country's history were about who could build the biggest, most efficient farm. The second 100 years were about the race to build efficient factories. The third 100 years are about ideas."

Despite this shift and bold proclamations that manufacturing is dead and we are entering into an era of ideas, the reality is that the foundational manufacturing sectors that underpin the Stoughton regional economy and the Wisconsin economy will continue to exist, but must innovate in order to continue to compete.

The Role of an Incubator and Economic Development in Innovation

Innovation, although important to the continued success and growth of the Stoughton regional economy, often requires intervention in order to spur it. A business incubator as part of a larger economic development strategy is an ideal entity to help spur innovation for a variety of reasons.

The Pew Center summarized the ingredients needed for innovation:

- **Expertise**—New discoveries, new knowledge, and new insights come from all people who are given the resources necessary for success.
- **Interaction**—Face-to-Face is still very important for the exchange of ideas and synergy that creates new business models, marketing plans, or products.
- **Diversity**—Ideas will only get better when they are openly discussed and considered by a mix of people with a variety of research fields, backgrounds, approaches, and mindsets.
- **Application**—Ideas are useless unless used. The true proof of their value is in commercialization.

All of these key ingredients can be fostered by a business incubator. An incubator will provide access to the resources, namely business services and space, needed to leverage expertise. The communal atmosphere of an incubator will provide interaction and diversity, and the purpose of the incubator will be to allow for the affordable exploration of ideas in hopes of finding appropriate applications.

In addition, a key element of innovative economies lies in their sources for ideas. Historically, most ideas and industry advances came from within the walls of businesses themselves. With a shift towards innovation, firms are realizing that it does not matter who conceives an idea, but only if they can benefit from it. As a result, an innovative economy is built on networks and the flow of ideas between public and private institutions, education and business, and large and small firms. A business incubator, as a public-private venture, is the ideal forum for this network to thrive.

What is an Innovation Focused Incubator?

As discussed above, innovation is defined by novel methods for organizing equipment and workers and for using technology. Innovation in high-tech and LMT industries occurs differently. Innovation in LMT industries comes from the internal transformation of sectors and products rather than the development of new sectors. In addition, innovation in LMT industries stems from a business's knowledge base, financial assets and materials/machinery, as opposed to just its expenditures on R&D. Typically, innovation in an LMT industry manifests itself through a change in production, sourcing or distribution in order to increase efficiency, reduce costs, better meet consumer needs, etc. To pursue innovation, LMT industries must invest time and resources in the commercialization of new technology or new processes. This may involve, among other things, the testing of new manufacturing processes, new equipment, or supply chain optimization. Regardless of how an LMT industry pursues innovation, it can be a costly and risky endeavor because the company must commit not only financial resources, but human capital, equipment and, potentially, sales if the testing involves the suspension or disruption of existing manufacturing lines. The purpose of an innovation focused incubator is to supply an environment that diminishes risk as both start-up companies and established businesses explore the potential of innovative ideas and products.

An innovation-focused business incubator reduces the cost and risk of exploring new innovative ideas by providing affordable and flexible space, and by creating a hub for the network of businesses and individuals necessary to broker innovation. In the context of fostering innovation in LMT industries, as is recommended for Stoughton, an innovation focused incubator is going to offer both office and highly flexible manufacturing bays. In an ideal situation, the incubator would house a mix of start-up and established businesses in the office and flex space that are critical businesses in the innovation supply chain; for example, mechanical engineering firms, industrial designers, custom CNC fabricators, etc. In addition to those tenants, the incubator would reserve a large, very flexible manufacturing space in which existing businesses could lease space and test prototypes or commercialization of new technology. While using that space, the

existing businesses could get affordable support from the other incubator tenants that are key pieces in the innovation supply chain. This arrangement would give start-ups access to potential customers and would permit existing businesses to explore innovation within their industry in a flexible, affordable and lower risk manner. More specific details about a potential Stoughton innovation-focused incubator will be discussed in the following section.

Incubator Strategies and Recommendations

As a result of the detailed feasibility and specialization analysis, this study recommends that Stoughton pursue an innovation-focused business incubator. In order to provide Stoughton with a roadmap for developing such an incubator, this component of the study identifies short-term and long-term strategies and makes recommendations regarding operation, funding, services, etc. The recommendations found in this section are based on current information regarding potential partners, funding and facility options. As the project evolves, circumstances may change requiring a modified approach; however, regardless of fluid circumstances, the recommendations and strategies outlined in this document should provide a foundation for moving forward. The strategies and recommendations covered in this section will include discussion on the following elements:

- Incubator Specialization and Overview
- Tenants of Facility
- Location and Facility
- Business Assistance Services and Equipment
- Ownership and Management Structure
- Anticipated Lease Rates
- Potential Partners
- Potential Funding Sources

Incubator Specialization and Overview

The analysis conducted as part of this study revealed the importance of innovation in the regional economy, as well as an opportunity for the Stoughton business incubator to serve as a broker of that innovation among LMT industries. Unlike a general business incubator approach, fostering innovation requires a more integrated and powerful network of individuals and business start-up services. Therefore, it will likely require a significant time investment to develop an incubator program that can become a regional hub for innovation in LMT industries. It is also important to capitalize on existing local enthusiasm and momentum, i.e., engaging in a lengthy planning process with no tangible or visible results in the short-term is not a good strategy. Fortunately, the study also found that the existing entrepreneurial demand is likely sufficient to support a general incubator in the near-term. As a result, it is recommended that the evolution of the Stoughton incubator occur in two stages.

Stage One – General Business Incubator

The data suggest there is an immediate opportunity to develop a general business incubator to serve existing local and regional entrepreneurial activity. The advantages of developing a general business incubator in the near-term as opposed to launching an innovation-focused incubator as soon as possible are numerous:

1. The feasibility study process has made local and regional stakeholders aware of the project, and the momentum necessary to leverage some of those people likely exists. It would be beneficial to move toward a tangible incubator in the short term in order to keep those important stakeholders engaged
2. The process of developing a business incubator is new to people and organizations that will be involved. Starting as a general incubator will allow for the process to move

forward at a controllable pace as the entities become more comfortable with the operation of the facility.

3. Ideas and strategies generated during the planning process can be tested in the incubator. This means that the creation of the innovation focused incubator can occur through a more natural evolution with room for trial and error.
4. The establishment of a general incubator will help raise awareness of Stoughton's intentions to foster new business among the entrepreneur community. As a result, when the time comes to actively market the innovation-focused incubator, it will be easier to reach the target audiences.
5. An innovation-focused business incubator will obviously require funding, some of which could be secured through county, state and/or federal grant programs. An established general business incubator may be able to provide a track record for success that could increase Stoughton's chances of securing that funding.

Although everything will be expanded upon in the following sections, the two primary traits of the general business incubator would be the provision of small office suites and flex space, as well as the availability of basic start-up business services.

Stage Two – Innovation Focused Incubator

For all the reasons laid out in this study the most valuable and unique niche available to the Stoughton incubator is as a broker and hub for innovation in the LMT industries. To develop an incubator that can fill that role, Stoughton must create a strong network of economic development entities and private industry. Because the creation of such a network will be challenging and time intensive, it is recommended that the innovation-focused incubator be a later, phased in approach only after the general incubator has become established. Depending on the facilities used for the general incubator, the innovation-focused incubator will not need a new facility, assuming it has access to highly-flexible manufacturing space. In addition, the innovation-focused incubator would not replace the business services offered as part of the general incubator, but would supplement them with more specialized targeted offerings. More specific details will be discussed later in this section.

Target Incubator Tenants

The primary difference between the general incubator and the innovation-focused incubator will be the target tenants. The general incubator, as the name implies, would accept essentially any business that could utilize the space – retail, service, manufacturing, etc. The innovation-focused incubator would ultimately like to develop a mix of start-up and established businesses in the office and flex space that would be critical to the innovation supply chain. For example, mechanical engineering firms, industrial designers, custom CNC fabricators, etc. In addition to those tenants, the incubator would reserve a large, very flexible manufacturing space in which existing businesses could lease space and test prototypes or commercialization of new technology. While using that space, the existing businesses could get affordable support from the other incubator tenants that are key pieces in the innovation supply chain. This set up would give start-ups access to potential customers and permit existing businesses to explore innovation within their industry in a flexible, affordable and lower risk manner.

Beyond providing space for start-up businesses, most incubators also house local economic development organizations and/or provide space for outside groups to hold office hours. Such groups could include small business associations, workforce training organizations, entrepreneur and inventors clubs, etc. Providing access to these entities all under one roof is an important service because it simplifies the often complex process of new businesses finding and utilizing assistance programs.

Screening and Selecting Tenants

The business incubator's goal is to provide an environment that can increase the chance of success among start-up businesses. Because the investment in these businesses is great, the incubator wants to ensure that the businesses using the space have the potential for success. Therefore, there should be a screening process of potential tenants.

It is recommended that the incubator require that any business interested in using the facility have a basic business plan in place and proof that their businesses can remain viable for at least three years assuming no profit generation. Once in the incubator, start-ups should be required to utilize available services to refine their business plan.

Location and Facility

Location

Given the limited funding availability at this stage of incubator development, it is recommended that Stoughton be focused on reusing an existing building as opposed to building a new facility. Therefore, the location will largely depend on availability of space and the resources required to lease or purchase. In addition, it is recommended that Stoughton not only consider vacant buildings on the market, but also privately owned buildings that are currently unused or underutilized. The RDA may be able to develop favorable lease agreements if the building remains in private ownership, but would not otherwise be generating income.

NOTE: Specifics on potential buildings will be developed if and when additional information can be secured.

Facility Characteristics

If Stoughton targets existing buildings for reuse, the following characteristics should be viewed as ideal facility characteristics. It is understood, however, that it will be difficult to find a building that meets all of the needs.

The appropriate size of the business incubator facility is largely dependent on the number of businesses it would be able to attract at any given time. During the first stage of incubator development, the facility will be attempting to gain exposure among the entrepreneurship community so will likely require less space. It is recommended that, initially, the business incubator be sized between 15,000 and 20,000 gross square feet. Of the total square feet, approximately 10,000 to 15,000 should be leasable to businesses.

It is the recommendation of this report that about half of the total floor area be dedicated to light industrial bays that range from 2,000 to 4,000 square feet. The remainder will be divided between common area, non-tenant office space and leasable office space. The leasable office spaces should be between 125 to 250 square feet per office

It is recommended that the incubator include the following physical traits:

- Access to overhead doors and loading docks
- Shared conference room with audio/visual equipment
- Shared office equipment (e.g., copier, fax, paper cutter, etc.)
- Mail service
- High-speed data connections

Virtually all of these facility requirements will remain the same as the incubator transitions from serving a general start-up market to one focused on innovation. To prepare for that shift, however, it will be critically important that the facility's manufacturing space be very flexible to accommodate equipment and other needs of future tenants. It is recommended that the

building offer essentially one large manufacturing space that is then subdivided by movable and configurable walls.

Business Assistance Services and Equipment

Unlike the physical traits of the facility, the shift from general incubator to innovation-focused will require additional business assistance services. Based on our research, we recommend that the following services and areas of expertise be made available:

Stage One – General Incubator

Services and Areas of Expertise

- Business plan review and refining
- Specialized financing services such as loan structuring and equity/debt financing
- Assistance with businesses that may become export-based in negotiating added permits, taxes and fees
- Marketing assistance
- Accounting assistance
- Tax law interpretation
- Basic legal assistance, particularly in patents

To provide these services, Stoughton must develop a network of public and private expertise. For example, it is recommended that the City attempt to assemble local professionals with the above skills (accountants, attorneys, bankers, etc.) to provide regularly scheduled “open office hours” at the incubator facility. During these times, start-up businesses could receive basic answers to important questions free of charge. If they need more in depth services, those same professionals would be available for hire at a reduced rate. In addition to the group of private sector professionals, there are numerous public entities that can assist in providing services. In particular, the Stoughton Chamber of Commerce should be involved with the provision of services, and the UW-Small Business Development Center (SBDC) in Madison has already expressed interest in being involved in the creation and operation of the incubator.

Currently, few Wisconsin incubators are charging fees for their services. The decision to charge fees or build all costs into a leasing structure will need to be reassessed after the financing of the incubator is better understood

Stage Two – Incubation Focused

All of the services recommended in Stage One should continue to be offered as the incubator evolves into one focused on innovation; however, innovation based businesses require additional expertise that other start-ups may not. Therefore, it is recommended that the following services be made available in addition to the general services of Stage One.

Services and Areas of Expertise

- Intellectual property law
- Knowledge of, and connections to, local and regional angel and venture capital funds
- Industry liaison – someone who can broker relationships between start-up companies, ideas and established businesses in LMT industries

Much like the services outlined in Stage One, the provision of these services should come from local professionals and public entities. The industry liaison will likely need to be a salaried position that works out of the incubator facility.

At this stage, it is not recommended that the incubator provide any specific equipment. As the general incubator evolves, a need may arise. The most common equipment provision that may be necessary in the future is a fork-lift.

Ownership and Management Structure

Typically, a business incubator is owned and managed by an economic development organization, a public entity such as a University or Tech-College, or some public-private consortium. At this point, there is no formal economic development organization within the City of Stoughton, and there are no local public institutions that have economic development or business growth as part of their mission. However, a business incubator also works to foster redevelopment through the growth and graduation of new businesses. Therefore, given their charge, it is recommended that the Stoughton Redevelopment Authority (RDA) manage the incubator and take ownership of any real or personal property purchased for the incubator. The RDA should rely heavily on other entities such as the Stoughton Chamber of Commerce and the UW-SBDC for the operation and provision of services. If, at some point, a formal Stoughton economic development organization is created, the RDA should consider transferring ownership and management to that group.

Regardless of the entity managing the incubator, it is recommended that a board of directors be established that includes public and private interests.

Anticipated Lease Rates

Based on the analysis of other incubator lease rates and existing lease rates in the Stoughton and East Dane County markets, it is recommended that office space be leased at approximately \$7.00 to \$8.00 per square foot per year, and manufacturing space be made available at \$4.00 to \$5.00 per square foot. It is a common practice to elevate lease rates the longer a businesses remains located in the business incubator. This strategy will likely be appropriate in the future, but, until the incubator becomes established, the recommendation is to keep rents flat over time.

Once the transition to innovation focus is completed, the manufacturing space should be leased on a highly flexible, month-to-month basis. This is because companies using the space to test a new idea or product will not have uniform needs in terms of length of occupancy.

Potential Partners

For sustained success of a Stoughton incubator, it will be important to gather information and resources from other organizations involved with business development. Below are the primary local organizations that could be of assistance to a new business incubator.

Thrive

Thrive is an umbrella economic development organization for eight south central Wisconsin counties including Dane County. Thrive can provide data and technical assistance on business development programs.

Wisconsin Business Incubation Association (WBIA)

WBIA is a statewide non-profit organization that sponsors comprehensive incubator surveys and state entrepreneurship/incubation conferences and seminars.

Wisconsin Small Business Development Center (SBDC)

The Wisconsin SBDC is an organization dedicated to fostering business growth through entrepreneurship. The group offers education and resources for aspiring entrepreneurs and business owners.

Wisconsin Entrepreneurs Network (WEN)

The Wisconsin Entrepreneurs Network is a statewide entrepreneur resources organization. Its mission is to provide the expertise needed to foster new businesses and assist existing ones.

Madison SCORE

The Service Core of Retired Executives is an organization that offers services, mentorship and expertise to start up businesses. It would be an ideal partner in the provision of business services throughout both stages of the incubator. SCORE Madison is currently located in the MGE Innovation Center.

ThinkWay Strategies

ThinkWay Strategies is a consulting services run by a local individual. They assist companies in refining and improving their model in order to achieve increases in efficiency, profit, waste, etc. Given the local connection, ThinkWay Strategies may be a candidate to provide periodic assistance and services to new businesses.

All of the above organization could be important partners throughout the process, but some additional contacts will need to be explored as the incubator transitions into a focus on innovation. Some initial potential partners are identified below:

Wisconsin Manufacturing Extension Partnership (WMEP)

WMEP provides small to medium sized businesses with expertise in growth strategies, management change, supply chain optimization, lean manufacturing and high variety low volume manufacturing techniques. They also "provide information to those focused on the success of Wisconsin manufacturing." WMEP could be a key resource for information and expertise in technology transfer and innovation in LMT industries.

Wisconsin Alumni Research Foundation (WARF)

WARF assists in the patenting of technologies and ideas that are developed in the UW, and the licensing of those ideas to companies in Wisconsin. If the Stoughton Incubator can get WARF to provide them with information on technologies that could impact LMT industries, the incubator

could serve as place where those technologies are tested and eventually integrated into local firms.

Potential Funding Sources

The following grant and loan programs could potentially be used as funding sources for the development and operation of a Stoughton Business Incubator. The resources included in this document only apply to potential funding that would be dispersed directly to the managing entity of the business incubator. Other grants and loans exist for individual start-up businesses, but they would have to be applied for by the businesses themselves.

County Programs:

TBD

State Programs:

Community Based Economic Development Program (CBED)

The Community Based Economic Development Program is designed to promote local business development in economically distressed areas. The program awards grants to community-based organizations for development and business assistance projects, and to municipalities for economic development planning. The program helps community-based organizations plan, build, and create business and technology-based incubators, and can also capitalize an incubator tenant revolving-loan program. Eligibility includes:

- Grants up to \$100,000 for unique regional projects which are collaborative efforts between community-based organizations or local units of government.
- Grants of up to \$10,000/year for technical assistance in developing a feasibility study or the initial design of an incubator start-up or expansion project or to improve the operation of an incubator.
- Grants of up to \$100,000/year to start, rehabilitate or expand an incubator.
- Grants of up to \$30,000/year to fund operations of an existing incubator.
- Grants of up to \$75,000/year for a venture capital development seminar.

Federal Programs:

Each program is described below and, when appropriate, includes the Catalogue of Federal Domestic Assistance (CFDA) code. Detailed program descriptions can be found at <http://www.cfda.gov>.

Regional Business Service - Business and Industry Loans CFDA: 10.768.

Assists public, private, or cooperative organizations (profit or non-profit), Indian tribes or individuals in rural areas to obtain loans for the purpose of improving, developing or financing business, industry and employment, and improving the economic and environmental climate in rural communities including pollution abatement and control.

Economic Development Administration (EDA) Grants

The EDA grant program has recently been expanded to include money designated for flood recovery following the floods of 2008. The available money must be used for job creation and/or economic development in flood-affected counties.

Stoughton, Wisconsin

Business Incubator Feasibility Study

PART TWO: Technical Analysis and Data

Regional Economy

Regional Economic Overview

Analyzing the regional economy provides insight into the industry sectors that are most likely to produce new jobs and foster economic growth, as well as those that have the most robust existing clusters and are foundational to the regional economy. This is important to the business incubator study for a variety of reasons.

Most importantly, understanding which industry sectors provide the best job creation and economic growth potential will help identify the sectors that are at the core of the regional economy, and therefore the business which should be supported, either directly or indirectly, by the incubator. In other words, if a business incubator is going to receive some amount of public funding, capital or operational, then it will be important for the incubator to foster the types of businesses that can help grow existing key industries and those that have the best long-term community impact. The businesses that offer the best long-term impact are likely going to come from an industry that historically has led the way in job creation and regional economic growth. In addition, having a clear understanding of the regional economy will help justify the need for a business incubator, and could be useful in crafting applications for grant money or approaching potential project partners.

Secondly, start up businesses that utilize a Stoughton incubator will be operating within the same regional economy as the mature firms included in this analysis. As new ventures grow, they will need to capitalize on the existing economic infrastructure that the mature firms provide (supply chains, workforce, knowledge base, etc.). An industry sector with a strong presence in the regional economy often correlates to a healthy supply chain, a professional knowledge base and a skilled workforce; thus creating the environment needed to serve the needs of new businesses during their growth. In addition, statistics show that 65 to 80 percent of new jobs are created from spin-offs of existing businesses. Therefore, if the Stoughton region is highly concentrated in a particular sector, it is highly likely that sector will produce a business that may utilize the proposed incubator.

To examine the regional economy this section will deal with the nine industry "sectors" that contain all of the businesses within the study region. After the primary economic drivers are identified amongst the sectors, a more detailed analysis of specific industry types will follow. It should be noted that not all of the sectors included in this analysis have the potential to utilize a business incubator. For example, public administration consists of primarily public sector jobs that would never locate in a Stoughton facility. Nonetheless, they are included in the analysis so that the strengths and weaknesses of each sector are accurately compared against all businesses in the region. The following page identifies each sector and all of the industry subsectors that are included within the analysis. The sectors are color coded to aid in quick identification throughout the document.

■ Natural Resources and Mining

- Agricultural Production - Crops
- Agricultural Production - Livestock
- Agricultural Services
- Forestry
- Fishing, Hunting and Trapping
- Metal Mining
- Coal Mining
- Oil and Gas Extraction
- Mining NonMetalics, Except Fuels

■ Manufacturing

- Food and Kindred Products
- Tobacco Manufacturers
- Textile Mill Products
- Apparel and Other Fabric Products
- Lumber and Wood Products, Except Furniture
- Furniture and Fixtures
- Paper and Allied Products
- Printing, Publishing and Allied Industries
- Chemicals and Allied Products
- Petroleum Refining and Related Industries
- Rubber and Miscellaneous Plastics Products
- Leather and Leather Products
- Stone, Clay, Glass & Concrete Products
- Primary Metal Industries
- Fabricated Metal Products
- Industry and Commercial Machinery and Computers
- Electrical and Electronic Equipment(Ex. Computers)
- Transportation Equipment
- Measuring and Analyzing Instruments
- Miscellaneous Manufacturing Industries

■ Services

- Personal Services
- Business Services
- Automobile Repair, Services and Parking
- Miscellaneous Repair Services
- Hotels and Other Lodging Places
- Amusement and Recreational Service (Ex. Movies)
- Health Services
- Legal Services
- Educational Services
- Social Services
- Museums, Art Galleries, Zoos, Etc.
- Membership Organizations
- Eng, Acct, Research & Mgmt Related Services
- Miscellaneous Services

■ Construction

- Building Construction and General Contractors
- Heavy Construction, Except SIC 15
- Construction-Special Trade Contractors

■ Wholesale Trade

- Wholesale Trade-Durable Goods
- Wholesale Trade-NonDurable Goods

■ Transportation and Utilities

- Railroad Transportation
- U.S. Postal Service
- Local, Suburban and Interurban Transportation
- Motor Freight Transportation and Warehouse
- Water Transportation
- Transportation by Air
- Pipe Lines, Except Natural Gas
- Transportation Services
- Communication
- Electric, Gas and Sanitary Services

■ Retail

- Building Materials, Garden Supply and Mobile Homes
- General Merchandise Stores
- Food Stores
- Automobile Dealers & Gas Service Stations
- Apparel and Accessory Stores
- Home Furniture, Furnishings & Equipment
- Eating and Drinking Places
- Miscellaneous Retail

■ Finance, Insurance & Real Estate (FIRE)

- Depository Institutions
- NonDepository Credit Institutions
- Security and Commodity Brokers and Service
- Insurance Carriers
- Insurance Agents, Brokers and Service
- Real Estate
- Holding and Other Investment Offices

■ Public Administration

- Exec., Leg. and Gen. Govt. (Except Finance)
- Justice, Public Order and Safety
- Public Finance, Taxation and Monetary Policy
- Administration Of Human Resource Programs
- Admin. Of Environ. Quality and Housing Programs
- Administration Of Economic Programs
- National Security and International Affairs

To provide an overview of the regional economy and identify primary economic and job growth drivers in the study region, the following analysis is broken into three parts:

1. *General Industry Overview:* The general industry overview provides background information on the concentration of firms, employees and sales within the study region. This information helps define the overall make-up of the regional economy as well as identifying which sectors have the most significant industry clusters.
2. *Drivers of Job Creation:* Using employment data for each sector, the regional economic analysis will identify the industry sectors that are most likely to produce new jobs, as well as those that will produce the highest paying jobs. This information is important to the study because it should be the goal of an incubator to grow businesses that, once they graduate and become stable within the community, are most likely to contribute positively to regional job creation. This metric also helps reveal which industries are foundational to the economy.
3. *Drivers of Economic Growth:* The primary drivers of economic growth are the industry sectors that bring in new money from outside the region by selling export goods. Like job creation, it is important to identify these sectors in order to promote start-up businesses that have long-term, positive community benefits. By combining the information on drivers of job creation and economic growth, this study will begin to narrow down the industry targets that best fit the Stoughton business incubator. Further insight into specific industry will be provided in a later section.

General Industry Overview

The General industry overview will help determine the stability of existing industry clusters. This information can then be used as an approximate measure of the amount of economic infrastructure that exists within the region for each sector.

Table 2.1 includes four columns of different concentration measurements. The first three columns show the distribution of each sector in terms of number of firms, employees and sales. For example, the services sector accounts for 40 percent of regional firms, 41 percent of regional employees and 38 percent of regional sales. Based on the data in the first three columns it is immediately apparent that the study region is dominated by service based firms, which, consequently, provide the most jobs and produce the most sales. The high concentration of services likely indicates that threshold of entry into the industry is lower. In other words, there are a lot of firms competing over a large market share, so a new entry should only have to secure a small portion of that market to be successful.

The remaining sectors' concentrations pale in comparison to services. However, some interesting things still emerge. For example, although manufacturing only has five percent of the region's firms, they account for 11 percent of total employees. Likewise, although FIRE only has seven percent of employees they account for 13 percent of total sales. These differences between measures show where industries offer a business by business advantage. For example, the shift present in manufacturing means manufacturing firms employ more people per business than other sectors. Therefore, although services have the highest concentration in every category, their measures are relatively constant so they are not excelling in any one category on a business by business basis.

Table 2.1: General Industry Concentration Statistics

	Regional Distribution Firms	Regional Distribution Employees	Regional Distribution of Sales	Employee Location Quotient
Services	40%	41%	38%	1.03
Retail	19%	18%	21%	0.90
FIRE	10%	7%	13%	1.00
Construction	9%	4%	8%	0.90
Manufacturing	5%	11%	8%	1.09
Public Administration	5%	9%	n/a	1.32
Transportation & Utilities	4%	4%	3%	0.84
Wholesale Trade	3%	4%	7%	0.96
Natural Resources & Mining	3%	1%	1%	0.83
All Industries	100%	100%	100%	n/a

Source: Claritas, 2009 (Business-Facts, InfoUSA); Vierbicher

The last column is the best pure measure of industry concentration. The employee location quotient compares the distribution of the regional employees to the national distribution to determine if the study region has a greater or lesser concentration in a given sector than would be expected based on the national landscape. A location quotient over 1.0 means the region has a higher concentration than average, and a location quotient of less than one means there is a lower concentration than average. The data show that the region is very well balanced among sectors, except for public administration which is very high due to the state capitol and major university. The only other areas where there is slightly more concentration in the study region are services and manufacturing. In the end, the data suggest that although this region is clearly dominated by service sector firms, manufacturing is also highly important and likely has an established economic infrastructure. In addition, FIRE and wholesale trade seem to offer different advantages on per business level. This information will be explored in more detail throughout this section.

Divers of Job Creation

The potential for an industry to act as a driver of new job creation is determined largely by how many employees a sector has historically provided on a business by business basis. Table 2.2 shows the average number of employees per establishment for each sector as well as the percent of businesses within each sector that employs 20 or more individuals.

In both categories, the manufacturing sector is by far the most significant employer on a business by business basis. In terms of employees per firm, manufacturing has more than twice as many as the average of all the industries combined. In addition, manufacturing has twice as many employees per firm than wholesale trade, which is the next closest sector that would actually be able to use a business incubator facility. Likewise,

Table 2.2: Job Creation Statistics

	Average Employees per Firm	Percent of Firms with 20+ Employees
Manufacturing	36	27%
Public Administration	28	24%
Wholesale Trade	18	14%
Transportation & Utilities	17	17%
Services	16	12%
Retail	15	17%
FIRE	11	8%
Construction	8	7%
Natural Resources & Mining	7	6%
All Industries	16	13%

Source: Claritas, 2009 (Business-Facts, InfoUSA); Vierbicher

manufacturing is twice as likely to produce a business with more than 20 employees than would be expected based on the percent of all industries that have 20 or more employees. This information seems to indicate that a mature manufacturing business is the best driver of job creation in the study region. In addition to pure job creation potential, the quality of newly created jobs is important.

Table 2.3 shows the average 2008 wages for each sector in the study region. The highest average wages are found in the transportation and utilities sector. However, if utilities are removed, transportation alone falls to only \$31,000. After transportation and utilities, manufacturing, construction and wholesale trade provided the highest wages. It is informative to see manufacturing with the second overall highest average wage because manufacturing firms are also the most likely to create the highest number of new jobs on a business by business basis. These findings suggest that manufacturing offers the best long-term community benefit in terms of job creation.

Drivers of Economic Growth

Economic growth most typically occurs when “new” money is brought into a local or regional economy. The new money that is brought in then goes towards paying local employees who, most often, purchase goods and services from other local businesses. To bring in new money, an economy must be selling its goods outside its borders. To measure an industry’s contribution to the export economy, a combination of sales data and location quotients are used.

Location Quotients

A location quotient is a measure of concentration of a sector in a study area compared to the nation as a whole. If an industry has a greater presence in a region than would be expected given the overall US economy, the location quotient will be greater than 1.0. The opposite is true for industries that are not well established in a specific place. For purposes of this analysis, the focus is on economic drivers and export businesses, so a sales location quotient was used. The resulting location quotient can be interpreted in the following way:

- A location quotient of 0.75 or less means the industry is not able to meet local consumption through local production and, therefore, this sector must import goods.
- A location quotient of 0.76 to 1.24 means the industry is largely meeting the local consumption through local production; this is called the subsistence range.
- A location quotient of 1.25 or more means the industry’s local production is exceeding local consumption and excess product is being exported. The production above local consumption is what makes up an industry’s export base.

Table 2.4 shows the sales location quotients for each sector in the four-county study region.

Table 2.3: Average 2008 Wages

		Average Wages (2008)
	Manufacturing	\$46,211
	Public Administration	\$38,604
	Wholesale Trade	\$43,658
	Transportation & Utilities	\$47,892
	Services	\$34,778*
	Retail	\$24,427
	FIRE	\$41,880
	Construction	\$44,549
	Natural Resources & Mining	\$32,492
Study Region Average per Capita Income		\$30,400

Source: Claritas, 2009 (Business-Facts, InfoUSA); Vierbicher
**Services Wages were calculated using only professional services categories. This is because the range of services includes everything from lawyers to fast food workers. Because an incubator would target the professional level services, the others were excluded.*

Table 2.4: Sales Location Quotient

	Sales Location Quotients
Manufacturing	1.10
Services	1.07
Fire	1.03
Construction	0.98
Retail	0.94
Wholesale Trade	0.90
Transportation & Utilities	0.78
Natural Resources & Mining	0.61
Public Administration*	N/A

Source: Claritas, 2009 (Business-Facts, InfoUSA); Vierbicher

* Public Administration is not available because it does not produce a product that is measurable in sales

When aggregating all four counties in the study region, the sales location quotient reveals that only Natural Resources & Mining is outside the subsistence range. This is probably because the study region includes a major metropolitan area in Madison, as well as some traditionally more blue-collar manufacturing communities. The result is a mix of micro-economies that mimic the nation's economy as a whole. However, if the sectors are divided up by county, very different location quotients emerge. Therefore, to better understand

the economic drivers of the region, Figure 1.1 illustrates the sales location quotients for each county.

Figure 1.1 shows the sales location quotients for each of the nine sectors in each individual county. The solid line, intersecting the vertical axis at "1.0," represents the average national concentration. The dotted lines intersecting at 0.75 and 1.25 illustrate the upper and lower boundary of the "subsistence" area. Anything above the upper dotted line represents output (sales) from exported goods and services. The data show that, in three of the four counties, the manufacturing segment is a strong, export-based industry. Further analyses of the manufacturing data show that in Green County approximately 30 percent of sales in the manufacturing industry are attributable to export. In Rock County 32 percent of manufacturing sales are exports, and 53 percent of manufacturing sales are attributable to export activity in Jefferson County. Retail in Green County and wholesale trade in Rock County also have location quotients indicating export based sales. Combining these data with average sales per establishment can identify which sectors are most responsible for bringing in new, outside dollars into the regional economy.

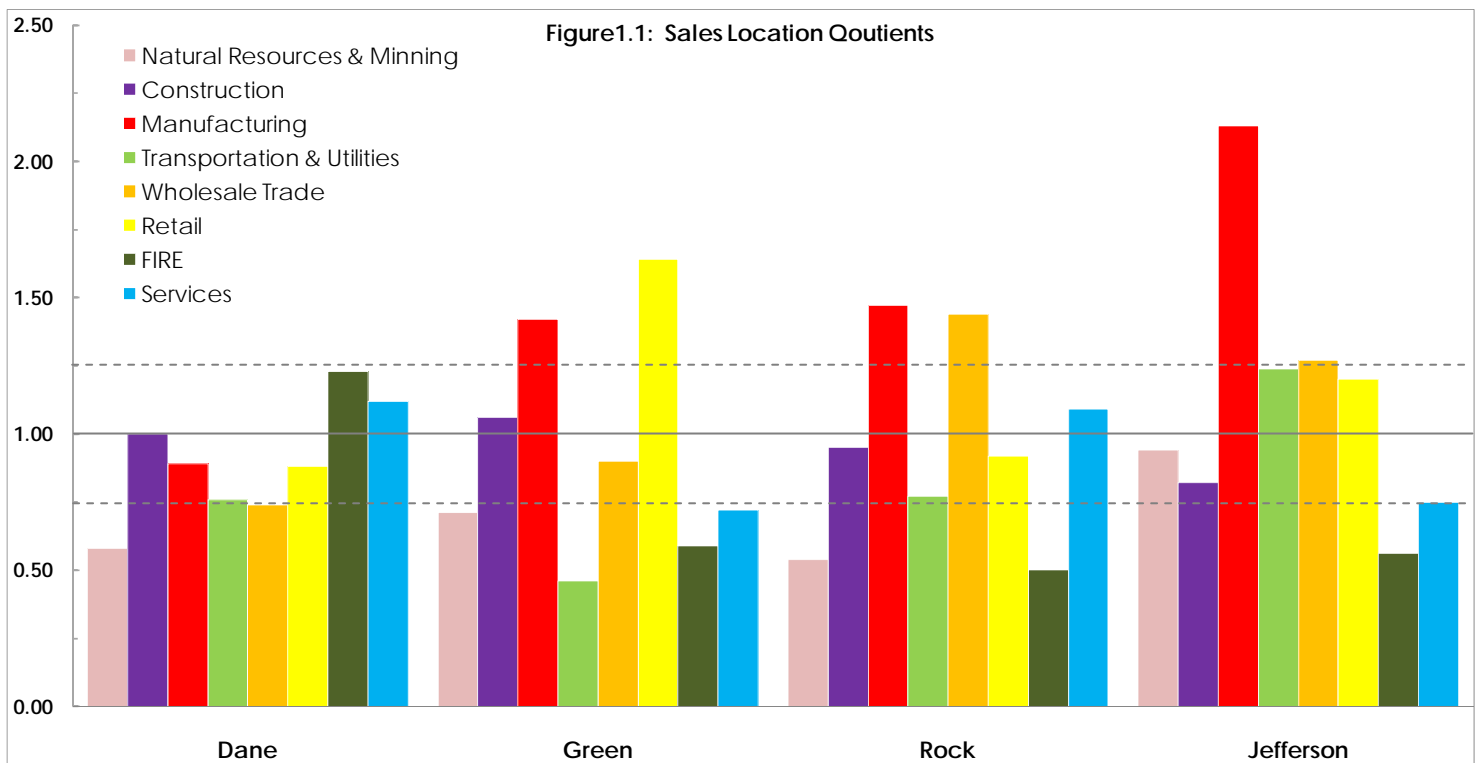


Table 2.5: Average Sales per Establishment

	Four County Study Region	Dane	Green	Rock	Jefferson
Manufacturing	2.75	2.56	2.25	3.02	3.54
FIRE	2.10	2.41	1.25	1.24	1.05
Retail	1.81	1.86	2.33	1.56	1.73
Services	1.56	1.60	0.96	1.68	0.95
Construction	1.49	1.67	1.01	1.32	0.91
Transportation & Utilities	1.47	1.67	0.52	1.18	1.46
Wholesale Trade	1.47	2.83	2.08	5.34	3.51
Natural Resources & Mining	.39	0.38	0.25	0.27	0.33
Public Administration	N/A	N/A	N/A	N/A	N/A
All Industries	1.62	1.68	1.29	1.62	1.31

Source: Claritas, 2009 (Business-Facts, InfoUSA); Vierbicher

Table 2.5 provides the average sales per establishment data for each county as well as the total for the four-county study region. The top sectors for each area are highlighted in green. The primary economic drivers for the region should be the sectors that have location quotients above the subsistence level, and also have the highest sales per establishment. That combination means that firms within that sector sell a significant amount of product, and a portion of those sales are going to clients outside the region; in other words, those firms have the best likelihood of bringing in large amounts of “new” money

The data show that manufacturing has among the highest average sales in each area, and it is an export based business in three of the four counties. In addition, wholesale trade in Rock County, and retail in Green County have high average sales per establishment and are also export industries. Ultimately, the consistency of performance in manufacturing seems to suggest it is the primary economic driver region-wide. It should be noted that because these measures are based on sales, public administration is not factored in. If it were, it is likely that it would appear as a primary driver because of the presence of government sector jobs and the University of Wisconsin.

Section One Summary

The information on entrepreneurial resources and the regional economy reveals important insight into the feasibility of a Stoughton Incubator and how an incubator’s money should be invested. First, the comparison of typical entrepreneur characteristics to the regional population suggests that Stoughton has a more substantial pool of potential entrepreneurs than the average region within the state. Secondly, the overview of the regional economy reveals that, although the region is dominated by service businesses in terms of sheer numbers and production, it is the manufacturing industry that offers the best job creation and economic growth potential on a business by business basis. Manufacturing also appears to be the underlying foundation of the regional economy. To that end, a business incubator in Stoughton would likely be best suited to foster or support small service start-ups and new manufacturing businesses. Services would likely be a good fit for the incubator because there is a vast regional talent pool and the barrier to entry into the market is lower than other sectors.

Although the information gathered for this section is informative, it is not detailed enough to provide a clear course of action for a Stoughton business incubator. That is why the next section of this study will provide a detailed look at the identified sectors to determine precisely the business types and emerging markets that would offer the best incubator and regional opportunity. However, due to the amenities needed by the services sector, little further analysis is needed. Instead, a business incubator that provides office space and basic new business services will attract and support service industry start-ups. Manufacturing on the other hand may require specialized equipment and knowledge; therefore, it is important that a detailed understanding of manufacturing possibilities is provided. To that end, the following section explores the manufacturing subsectors and emerging markets.

Detailed Manufacturing Analysis & Trends

The detailed industry analysis is focused on exploring manufacturing subsectors to determine the best fit for the Stoughton Business Incubator. The criteria used to make that determination is intended to evaluate short-term potential for start-up businesses as well as long-term growth opportunity and community benefit. The variables considered in this section include:

- Industry Concentration
- Job Creation Potential
- Economic Drivers
- Future Industry Growth Opportunities
- Emerging Market Potential
- Local, Specialized Knowledge

Manufacturing Subsectors

The detailed analysis of the manufacturing industry will focus on the 20 specific business types that together make up the manufacturing sector. Because the overview of the regional economy revealed manufacturing in to be one of the primary job creators and economic growth engines, examining just the manufacturing sector at this level of detail will provide insight into the specific services, facility needs, expertise, etc. that the business incubator would have to include in order to successfully foster manufacturing start-ups.

■ Manufacturing

- Food and Kindred Products
- Tobacco Manufacturers
- Textile Mill Products
- Apparel and Other Fabric Products
- Lumber and Wood Products, Except Furniture
- Furniture and Fixtures
- Paper and Allied Products
- Printing, Publishing and Allied Industries
- Chemicals and Allied Products
- Petroleum Refining and Related Industries
- Rubber and Miscellaneous Plastics Products
- Leather and Leather Products
- Stone, Clay, Glass & Concrete Products
- Primary Metal Industries
- Fabricated Metal Products
- Industry and Commercial Machinery and Computers
- Electrical and Electronic Equipment(Ex. Computers)
- Transportation Equipment
- Measuring and Analyzing Instruments
- Miscellaneous Manufacturing Industries

Industry Clusters

The first variable examines the number and intensity of manufacturing business in the study region. This measure is used to approximate the presence and scale of local supply chains, professional networks and knowledge base. The more manufacturing businesses of one type that exist in the region, presumably the stronger these elements are, and therefore, the more resources a start-up will have at its disposal. Table 2.1 provides the same industry concentration measures as the section on the regional economy, but this time is limited to only manufacturing categories. The top grouping of subsectors in each category has been highlighted in green.

Table 2.6 shows that there is considerable variability amongst manufacturing subsectors and between the different measures of concentration. For example, printing and publishing has the most businesses, but food and kindred products lead the way in number of employees and sales. Because of the variation in firms, employees and sales, the final column, employee location quotient, becomes the most important element in identifying important industry clusters.

Table 2.6: Manufacturing Industry Concentration Statistics

	Regional Distribution of Firms	Regional Distribution of Employees	Regional Distribution of Sales	Percent of Firms with Four or Less Employees	Employee Location Quotient
Printing, Publishing & Allied Industries	23%	12%	11%	45%/73%	1.04
Industry & Commercial Machinery & Comps	15%	8%	10%	26%	0.69
Miscellaneous Manufacturing Industries	10%	4%	4%	n/a	0.72
Fabricated Metal Products	8%	7%	7%	31%	0.74
Food & Kindred Products	7%	16%	16%	22%	1.60
Measuring & Analyzing Instruments	5%	12%	11%	38%	1.64
Chemicals & Allied Products	4%	6%	6%	22%	1.07
Lumber & Wood Products, Except Furniture	4%	2%	3%	36%	0.52
Electrical & Elec. Equipment (Ex. Comps.)	4%	5%	5%	31%	0.80
Stone, Clay, Glass & Concrete Products	4%	2%	2%	22%	0.57
Rubber & Miscellaneous Plastics Products	3%	5%	5%	32%	1.24
Furniture & Fixtures	3%	4%	4%	27%	2.11
Transportation Equipment	2%	11%	9%	17%	1.44
Paper & Allied Products	2%	2%	2%	33%	0.65
Primary Metal Industries	2%	3%	3%	19%	0.84
Apparel and Other Fabric Products	2%	0%	0%	Insuf. Data	0.15
Petroleum Refining & Related Industries	1%	0%	1%	Insuf. Data	0.42
Textile Mill Products	0%	0%	0%	Insuf. Data	0.07
Leather & Leather Products	0%	0%	0%	Insuf. Data	0.21
Tobacco Manufacturers	0%	0%	0%	Insuf. Data	0.02
Total	100%	100%	100%	n/a	n/a

Source: Claritas, 2009 (Business-Facts, InfoUSA); Vierbicher

As discussed in the first section, an employee location quotient over 1.0 means the region has a higher than average industry concentration, and a location quotient of less than 1.0 means the region has a below average concentration. Because industry concentration is a good indicator of regional specialization, a high employee location quotient likely points to a manufacturing subsector that has a well established support network of suppliers, skilled labor and specialized knowledge. Future start-up businesses will need to capitalize on that network in order to gain entry into the field and garner valuable business insight. Therefore, the employee location quotient can help clarify the other concentration measures. For example, although the printing and publishing subsector is near the top in the firm, employee and sales measures, it has a location quotient of only 1.06, meaning the amount of printing and publishing activity in the study region is not uncommon. Therefore the study region likely does not offer any significant advantages to a new printing or publishing company compared to other locations. On the other hand, although furniture and fixture manufacturing does not account for many firms, employees or sales, it does have a very high location quotient, suggesting the region is uniquely rich with furniture and fixture companies. More detail into each subsector will emerge throughout this section.

Entry into the Market

It is typically easier for a new business to enter a competitive market place if the industry is accessible to small firms. A preponderance of small businesses within a manufacturing subsector likely means that suppliers are easily accessible, start-up costs are manageable, and it requires only a small market share to be successful. Table 2.7 shows the percent of businesses within each subsector that have four or fewer employees according to 2007 Department of Workforce Development data.

The data presented in Table 2.7 shows printing and publishing has the highest concentration of small businesses. The two numbers provided for printing and publishing are important to distinguish between. The printing and publishing subsector used in this report can also be reported as two separate subsectors; printing and allied businesses and publishing businesses. One of the important components of the publishing subsector is software publishing. The first number provided for the printing

Table 2.7: Concentration of Small Businesses

	Percent of Firms with Four or Less Employees
Printing, Publishing & Allied Industries	45%/73%
Measuring & Analyzing Instruments	38%
Lumber & Wood Products, Except Furniture	36%
Paper & Allied Products	33%
Rubber & Miscellaneous Plastics Products	32%
Fabricated Metal Products	31%
Electrical & Elec. Equipment (Ex. Comps.)	31%
Furniture & Fixtures	27%
Industry & Commercial Machinery & Comps	26%
Food & Kindred Products	22%
Chemicals & Allied Products	22%
Stone, Clay, Glass & Concrete Products	22%
Primary Metal Industries	19%
Transportation Equipment	17%
Miscellaneous Manufacturing Industries	n/a
Apparel and Other Fabric Products	Insuf. Data
Petroleum Refining & Related Industries	Insuf. Data
Textile Mill Products	Insuf. Data
Leather & Leather Products	Insuf. Data
Tobacco Manufacturers	Insuf. Data

Source: Department of Workforce Development: 2007 es-202 Data Vierbicher

and publishing subsector in Table 2.7, 45 percent, is the concentration in the printing and publishing industry excluding software publishing. The second number, 73 percent, is just the concentration of small firms within the software publishing subsector. They were separated in this chart because the concentration within software publishing is so high, and because software publishing is not typically thought of as being part of the printing and paper publishing industry. Clearly the printing and paper publishing subsector and software publishing have considerably more small firms than the majority of other subsectors.

Job Creation Potential

Like the regional economic overview, the purpose of the job creation component is to determine which manufacturing subsector is most likely to provide a business that employs numerous individuals with good pay. If there are specific subsectors that are more likely to fill this role than others, and if it is feasible to provide support to start-ups in that subsector via the incubator, then it would be most beneficial to target those subsectors for the Stoughton facility. Table 2.8 provides the average employee per establishment measure and the percent of total establishments with more than 20 employees.

According to the data presented in Table 2.8, transportation equipment has the highest average number of employees per establishment, but a below average percentage of establishments with more than 20 employees. This suggests that the high average per establishment is being skewed by only a few firms. With that taken into consideration, food and kindred products, rubber and plastics, primary metal industries, and measuring and analyzing instruments appear to be the primary job creators in the manufacturing subsector. However, when compared to the sectors discussed in Section One, the entire upper half of Table 2.3 offers better job creation potential than the other industries examined.

Table 2.8: Manufacturing Industry Job Creation Potential

	Average Employees per Establishment	Percent of Establishments with 20+ Employees
Transportation Equipment	161	24%
Measuring and Analyzing Instruments	86	56%
Food and Kindred Products	75	44%
Rubber and Miscellaneous Plastics Products	63	52%
Primary Metal Industries	56	44%
Furniture and Fixtures	56	36%
Electrical and Electronic Equip.(Ex. Computers)	49	33%
Chemicals and Allied Products	44	42%
Paper and Allied Products	34	33%
Fabricated Metal Products	32	33%
Industry and Comm. Machinery and Computers	20	24%
Printing, Publishing and Allied Industries	19	16%
Petroleum Refining and Related Industries	19	36%
Stone, Clay, Glass and Concrete Products	18	24%
Lumber and Wood Products, Except Furniture	17	25%
Leather and Leather Products	13	33%
Miscellaneous Manufacturing Industries	12	12%
Textile Mill Products	9	14%
Apparel and Other Fabric Products	5	3%
Tobacco Manufacturers	2	0%
Total	36	27%

Source: Claritas, 2009 (Business-Facts, InfoUSA): Vierbicher

Table 2.9 shows the median employee wages in 2008 for each of the manufacturing subsectors. With a regional average per capita income of only \$30,400, all but three of the manufacturing subsectors have higher average wages than the overall region.

Table 2.9: Manufacturing Industry Average Employee Wages (2008)

	Average Annual Wage
Chemicals and Allied Products	\$ 55,248
Primary Metal Industries	\$ 51,404
Fabricated Metal Products	\$ 51,152
Electrical & Electronic Equipment (Ex. Comps)	\$ 50,949
Industry & Commercial Machinery & Computers	\$ 48,264
Transportation Equipment	\$ 46,455
Measuring and Analyzing Instruments	\$ 46,014
Furniture and Fixtures	\$ 43,315
Tobacco Manufacturers	\$ 42,233
Food and Kindred Products	\$ 42,139
Rubber and Miscellaneous Plastics Products	\$ 39,920
Printing, Publishing and Allied Industries	\$ 36,687
Stone, Clay, Glass and Concrete Products	\$ 35,949
Paper and Allied Products	\$ 35,643
Textile Mill Products	\$ 29,880
Lumber and Wood Products, Except Furniture	\$ 29,026
Apparel and Other Fabric Products	\$ 22,147
Miscellaneous Manufacturing Industries	n/a
Petroleum Refining and Related Industries	n/a
Leather and Leather Products	n/a

Source: Wisconsin DWD (2008); Vierbicher

Overall, most of the manufacturing subsectors are good job creators that pay higher than average wages. Therefore, almost any of the top subsectors in either Table 2.8 or 2.9 would likely be appropriate for incubator investment from a job creation standpoint. Only primary metal industries performed well in both measures.

Economic Drivers

The economic drivers within the manufacturing subsectors are identified using average sales per establishment and sales location quotients. The subsectors of interest have location quotients at or above 1.25, meaning they are exporting product, and also have high sales per establishments. That combination means businesses which grow out of the incubator will have a good chance to bring in “new” money from outside the regional economy. It is the influx of new money

which most effectively spurs economic growth. Table 2.10 shows the average sales per establishment and the sales location quotient for each industry subsector.

The data in Table 2.10 reveals that food and kindred products, furniture and fixtures, chemicals and allied products, and paper and allied products all have location quotients near or above 1.25. All but paper and allied products also have average sales per establishment that are higher than the total manufacturing average, and more than twice as high as the total regional average sales per establishment presented in Table 2.5. Therefore, it is likely that the food products, furniture and fixtures, and chemicals and allied products subsectors are the primary economic drivers within the manufacturing industry in terms of export based sales.

Table 2.10: Manufacturing Sales and Export Data

	Average Sales per Establishment	Sales Location Quotient
Transportation Equipment	10.16	0.84
Measuring and Analyzing Instruments	6.35	1.14
Food and Kindred Products	5.75	1.23
Rubber and Miscellaneous Plastics Products	4.65	1.14
Furniture and Fixtures	4.32	1.59
Primary Metal Industries	4.22	0.98
Chemicals and Allied Products	3.92	1.33
Electrical & Electronic Equipment (Ex. Computers)	3.38	0.84
Paper and Allied Products	2.64	1.25
Fabricated Metal Products	2.54	0.78
Petroleum Refining and Related Industries	2.51	0.84
Lumber and Wood Products, Except Furniture	1.88	0.82
Industry & Commercial Machinery and Computers	1.86	0.95
Stone, Clay, Glass and Concrete Products	1.79	0.91
Printing, Publishing and Allied Industries	1.31	1.13
Leather and Leather Products	1.17	0.48
Miscellaneous Manufacturing Industries	1.03	0.98
Apparel and Other Fabric Products	0.67	0.73
Textile Mill Products	0.56	0.37
Tobacco Manufacturers	0.10	0.47
Total	2.75	1.10

Source: Claritas, 2009 (*Business-Facts, InfoUSA*); Vierbicher

Future Manufacturing Industry Growth Opportunities

For a business to be successful in the long term, it is beneficial if it is entering an environment that has future growth opportunity. To measure future growth opportunity, Wisconsin Department of Workforce Development (DWD) industry growth projections were combined with the employee location quotients to produce Figure 2.1. Figure 2.1 presents, in a single chart, the study region's future manufacturing leaders and the best manufacturing opportunities.

The x-axis on Figure 2.1 is the forecasted growth projection for each industry out to the year 2016. The solid line intersecting the x-axis at approximately -1.7 percent is the overall manufacturing industry growth forecast. In other words, the Wisconsin DWD expects manufacturing as a whole to decline by 1.7 percent over the next six years. The y-axis is the employee location quotient, or employment concentration measure (ECM). The ECM is used to illustrate the relative concentration of each industry and the overall regional manufacturing specialization. The bubble size and number within the bubble represents the total number of establishments in the region. When these measures are combined, in particular the ECM and growth forecast, it becomes clear which industries have the infrastructure and future market to likely succeed in the region.

The upper right-hand quadrant of the graph (yellow) contains the industries which are both high growth and high concentration. These collections of businesses are the industry leaders because they already have an established specialization within the region and they also have good future growth prospects. The lower right-hand quadrant (green) represents the region's future opportunities. These industries do not presently have a great concentration, but they do have excellent growth potential. Therefore, with the right support the opportunity industries could grow into future leaders. The upper left-hand quadrant (blue) shows the area's mainstays. The mainstays do not have great future growth potential, but they are highly concentrated in the region so will likely remain a staple of the manufacturing landscape. The lower left-hand quadrant (red) shows the industries that are declining and do not have an existing concentration. It is likely best that these industries be ignored as future economic drivers or job creators. To summarize Figure 2.1, the region has the following leaders, opportunities, mainstays and declining industry. Although not included graphically in the figure, the leaders and opportunities in the service industry are also included in the following list. Virtually all other service subsectors are mainstays:

Leaders

- Furniture and Fixtures
- Rubber and Plastics
- Chemicals and Allied Products
- Printing and Publishing (Software)
- Social Services (Child Care, Job Training, Housing Services, etc)
- Professional, Scientific and Technical Services

Opportunities

- Stone, Clay, Glass and Concrete
- Miscellaneous Products
- Fabricated Metal
- Health Care Services (Ambulatory, Hospitals, Nursing and Residential Care)

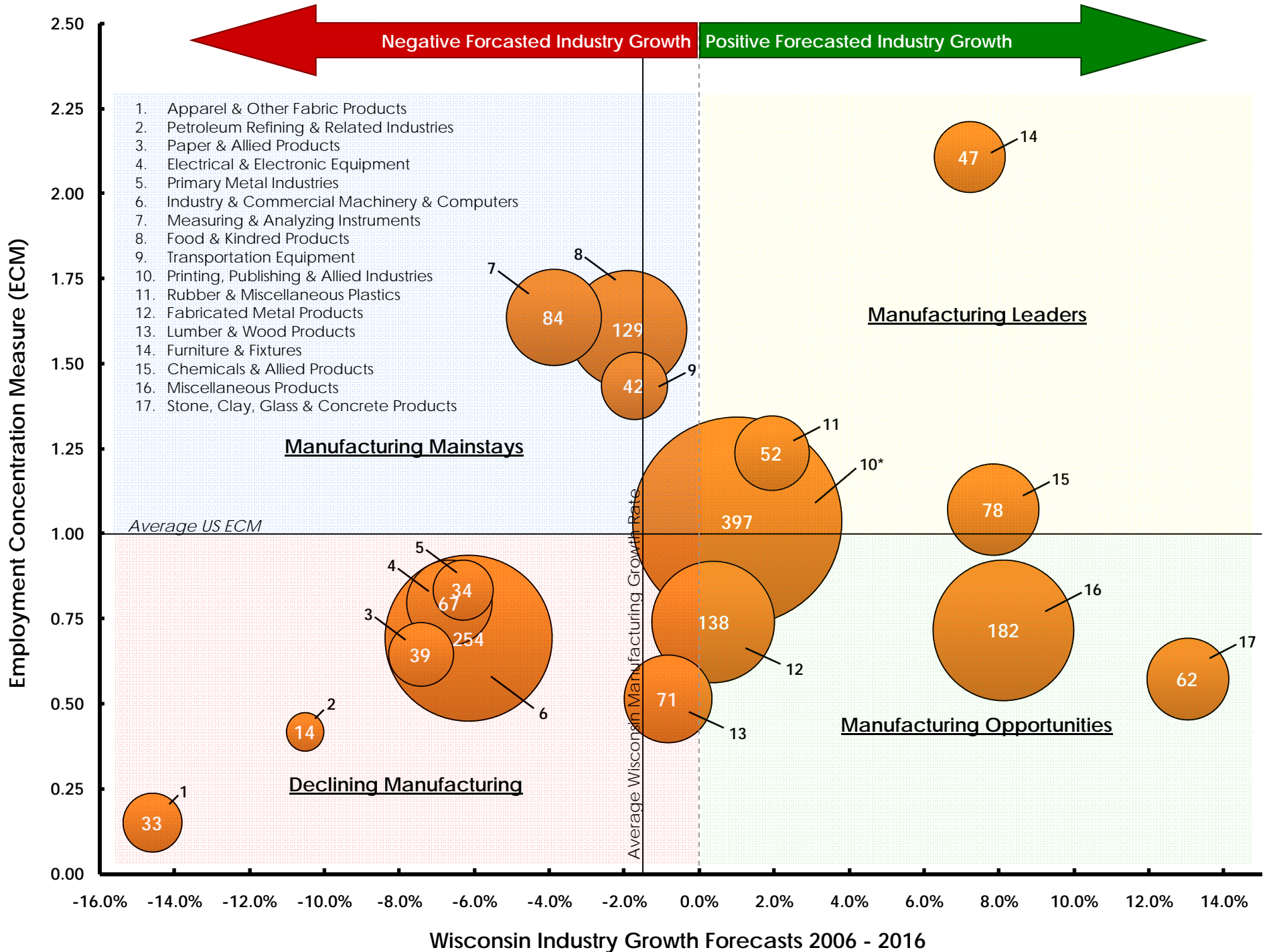
Mainstays

- Measuring and Analyzing Equipment
- Food and Kindred Products
- Transportation Equipment
- Printing and Publishing (Printing and Paper Industry)
- Miscellaneous Products

Declining

- Apparel and other Fabric Products
- Petroleum Refining
- Paper and Allied Products
- Electrical and Electronic Equipment
- Primary Metals
- Industry and Commercial Machinery and Computers
- Lumber and Wood Products (very near to being an opportunity, with a 0.8% projected decline by 2016)

Figure 2.1: Manufacturing Forecast and Opportunity



* Printing and Publishing is now comprised of two separate subsectors: Printing, which is within the manufacturing sector, and publishing which is within the information subsector. Combined they have a 1.0% projected growth rate. However, individually printing has a growth rate of -0.8% and publishing's growth rate is +4.3%.