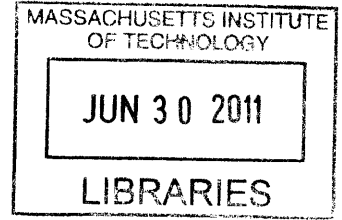


The Future of Manufacturing in Somerville

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Abstract

As traditional industrial uses in the U.S. have declined, Somerville, Massachusetts has similarly seen a decline in active industrial uses, together with a loss of living wage jobs. Somerville, like many New England cities, is now struggling to establish its identity in this “post-industrial” world. The City’s large manufacturers have, for the most part, left the City leaving behind an abundance of old and irregular industrial building stock. Mayor Curtatone is on record as being interested in biotechnology, green, and clean energy businesses and City staff are actively seeking opportunities in these areas.

At the same time, the City is increasingly becoming a regional destination for small-scale artisanal and food manufacturing. Products being manufactured locally include bicycles, guitars and chocolate. However, this sector faces many challenges such as limited growth and intense competition. Yet despite these challenges, this sector provides economic development returns by bringing new revenue into Somerville and providing lower skill residents with a higher wage than their alternatives in the retail and restaurant industry. What’s more, this sector is appropriate for Somerville’s land availability and building stock, and it significantly contributes to Somerville’s creative brand and therefore its ability to attract more Creative Class residents and businesses.

To bolster this sector, Somerville should embark on sector-specific strategy to strengthen the existing consumer goods sector. The cornerstone of this effort will be the creation of an umbrella organization that will provide technical assistance, marketing, and financial assistance to local manufacturers. To support this work, Somerville will also make infrastructure investments and targeted land use policies. With these policies in place, Somerville will create jobs in Somerville for Somerville residents, extract more value from the existing land, and strengthen its “brand” as a “City of Makers.”

What can other cities learn about manufacturing as an economic development activity from Somerville? When considering a manufacturing strategy, a city must consider: 1) its role within the region; 2) land availability; 3) existing building stock, and; 4) existing and nascent industry networks. Sound economic development strategies should not only attempt to foster profitable uses (tax revenues), but also uses that leverage a city’s relative strengths and are aligned with their larger community and economic development goals including a range of jobs, quality of life, and perhaps most importantly, creating a strong identity and pride of place.

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Chapter 1: Why Manufacturing?

They're closing down the textile mill across the railroad tracks
Foreman says these jobs are going boys and they ain't coming back. . .

“My Hometown”
Bruce Springsteen
1985

The scenario Bruce Springsteen paints of the U.S. manufacturing industry's economic decline is nothing new to the United State's older industrial cities and their economic development offices. But was Bruce right? Is U.S. manufacturing dead, or at least dying? Is it worth energy and investment or should we concede that manufacturing has no place in a mature service-oriented economy and let it die a respectful death? If manufacturing remains in the U.S., does it have a place in the urban core? And if in fact it does have a place, what type of manufacturing can survive in urban environments?

This research will attempt to answer these questions using Somerville, Massachusetts as a case study. Somerville, located just north of Boston, is a city of roughly 80,000 people and 4.1 square miles and as of the 2000 census, Somerville was the most densely populated municipality in New England.¹ Once an industrial center for the Boston Metropolitan area, Somerville, like many other cities of its type, has seen a decline in active industrial uses, together with a loss of living wage jobs. Today, Somerville is struggling to establish its identity in this “post-industrial” world. The City's large manufacturers have, for the most part, left the City leaving behind an abundance of old and irregular industrial building stock and a disproportionate reliance on low-paying service industry jobs. Mayor Curtatone is on record as being interested in biotechnology, green, and clean energy businesses. At the same time, the City is increasingly becoming a regional destination for small-scale artisanal and food manufacturing. Products being manufactured locally include bicycles, guitars and

¹ *Economic Trends* (Somerville, MA: City of Somerville, Office of Strategic Planning and Community Development, 2009), 4.

chocolate. However, preliminary research calls into question the ability of this sector to generate economic development returns for the City. What's more, industry projections point to manufacturing with high-tech processes, low-volume production runs and high-margin profits as the future of manufacturing, particularly in the US. With limited funding, the City must make critical decisions about its economic development priorities, particularly as it plans for the upcoming Green Line extension, which is expected to generate public and private development and investment in the City.

To return to the initial question of whether or not manufacturing is dead, domestic manufacturing has certainly experienced a drastic decline. No other sector has lost so much ground relative to the rest of the economy, with steady job loss since 1998.² Manufacturing's share of gross domestic product reached its peak in 1950 at nearly 30 percent but has dropped to somewhere between 11 to 13 percent today.³

Despite the incessant reports of firms closing up shop or moving their production offshore, the U.S. remains the world's largest manufacturer by output accounting for 19.9 percent of global manufacturing in 2010. However, it was closely followed by China at 18.6 percent and most economists predict that China will deny the U.S. the number one spot in 2011. U.S. domestic manufacturing accounts for 60 percent of exports, employs 11.6 million people nationwide and generates 1.6 trillion dollars in revenue.⁴

In Massachusetts, manufacturing employs close to 10 percent of the state's workforce or approximately 300,000 people, and accounts for 40 billion dollars worth of sales annually. Manufacturing is the fourth largest employer with only health care, retail trade

² Chris Isidore, "Factory jobs post surprising strength - Sep. 27, 2010,"

http://money.cnn.com/2010/09/27/news/economy/manufacturing_job_rebound/index.htm?hpt=T1.

³ Louis Uchitelle, "Ron Bloom Is Obama's Emissary for Manufacturing," *The New York Times*, September 9, 2010, sec. Business / Economy,

http://www.nytimes.com/2010/09/10/business/economy/10manufacture.html?_r=1.

⁴ Timothy Aepfel, "China's Gains in Manufacturing Stir Friction Across the Pacific," *Wall Street Journal*, August 3, 2009.

and the education sector employing more people. Despite its recent attention, the State's biotechnology sector employs one fourth of the workers as are employed by the manufacturing sector.⁵

What's more, there is recent evidence that mass lay-offs have slowed. In July of 2009, the manufacturing sector accounted for 37 percent of all mass layoff events, while in July of 2010, manufacturing made up only 25 percent of events.⁶ Since the start of 2010, there's been a 1.6 percentage gain in manufacturing jobs, which is about twice the pace of growth in other private sector jobs.⁷ A deeper look into the sector shows a more dynamic picture than just loss or growth. As Table 1.1 below demonstrates, even in the recession years of 2000-2001, there was an average of 500 new establishments created each year in Massachusetts. The total loss of 1,423 establishments between 1995 and 2003 was the result of more than 4,200 new establishment births offset by more than 5,600 deaths. The births include new manufacturing facilities constructed by existing firms; others represented totally new companies.⁸

⁵ The Center for Urban and Regional Policy School of Social Science, Urban Affairs, and Public Policy Northeastern University, *Staying Power: The Future of Manufacturing in Massachusetts* (The Boston Foundation, 2008), <http://www.bostonfoundation.org/UtilityNavigation/MultimediaLibrary/ReportsDetail.aspx?id=8242&parentId=354>.

⁶ "Mass Layoffs Summary," *U.S. Bureau of Labor Statistics*, August 20, 2010, <http://www.bls.gov/news.release/mmls.nr0.htm>.

⁷ Isidore, "Factory jobs post surprising strength - Sep. 27, 2010."

⁸ "Staying Power: The Future of Manufacturing in Massachusetts," *www.bostonfoundation.org*, <http://www.bostonfoundation.org/Content.aspx?ID=9252>.

Table 1.1 Massachusetts Manufacturing Establishments, 1995-2003

Year	Initial Year Establishments	Births (Adjusted)	Deaths (Adjusted)	Birth : Death Ratio
1995	9,544	584	691	0.85
1996	9,437	722	686	1.05
1997	9,473	419	876	0.48
1998	9,016	481	701	0.69
1999	8,796	523	646	0.81
2000	8,673	546	612	0.89
2001	8,607	454	804	0.56
2002	8,257	486	622	0.78
2003	8,121	N/A	N/A	N/A
Total		4,215	5,638	

Net Change -1,423

Source: U.S. Census Bureau, *Statistics of U.S. Businesses*, 2008

According to authors of The Boston Foundation’s 2008 report, “Staying Power: The Future of Manufacturing in Massachusetts”, this data suggests that despite all the news about the loss of manufacturing prowess in the State, there are still many investors who view it as a good location for new manufacturing operations. Another conclusion they draw is that the growth of manufacturing in Massachusetts is elastic over the short term, responding to external shocks and the overall health of the national economy. The short-term variability in the number of establishments ranges from positive growth in one year to a five percent loss in the next.⁹

President Obama seems to agree that manufacturing is worth investment. On a September 8th speech in Cleveland, he imagined a future “where we invest in American innovation and American ingenuity; where we export more goods so we create more jobs here at home; where we make it easier to start a business or patent an invention.”¹⁰ What’s more, he has named Ron Bloom, a Harvard M.B.A. who has worked on Wall

⁹ The Center for Urban and Regional Policy School of Social Science, Urban Affairs, and Public Policy Northeastern University, *Staying Power: The Future of Manufacturing in Massachusetts*, GET PAGE.

¹⁰ “Obama Cleveland jobs speech. Transcript - Lynn Sweet,” September 8, 2010, http://blogs.suntimes.com/sweet/2010/09/obama_cleveland_jobs_speech_tr.html.

Street, as well as an advisor to the United Steelworkers, as a special adviser for manufacturing policy. Bloom takes a strong stance on the importance of domestic production and believes that Americans cannot excel at high-end innovation if the related production activities continue to decline or move overseas: “I am deeply afraid that if you lose the ability to make things,” he said, “all the intellectual activity involved in innovation and design will over time erode as well.”¹¹

Manufacturing continues to make up a significant portion of our national economy and policy efforts are underway at the federal level, but more central to the purpose of this research, does manufacturing still have a place in cities? This question has been at the center of a national debate for decades. Historically, industrial uses were the major driving factor behind the emergence of major cities. During the Industrial Revolution, firms located in the city center in order to access inputs, a large labor pool, transportation networks and markets. The invention and mass consumption of the automobile quickly shifted this dynamic. Clarence Stein, an architect and one of the inaugural members of the Regional Planning Association of America predicted the effect that improved transportation technology would have on urban industry in 1925:

When the local overhead cannot be shifted, and when smaller centers are, in spite of their poorer financial and business facilities, able to make their industrial advantages felt, the great city’s industries will have to migrate or declare bankruptcy. We are still in the day of postponement, but the day of reckoning will come, and it behooves us to anticipate it.¹²

The introduction to a 1993 report of a policy forum sponsored by the National Council for Urban Economic Development, “Urban Manufacturing: Dilemma or Opportunity,” further elaborates on the market forces that shifted the location patterns of urban manufacturing:

¹¹ Uchitelle, “Ron Bloom Is Obama’s Emissary for Manufacturing.”

¹² Clarence Stein, “Dinosaur Cities,” *The Survey* (1925): 138.

Before the invention of the private automobile, transportation costs propelled companies employing large numbers of workers to locate near the labor market. As personal means of transportation expanded, the labor pool of available workers grew and the comparative costs of commuting decreased. As the nation built up extensive networks of roads and highways, the relative costs of transporting materials also decreased dramatically, making locations outside the urban center more feasible. In addition, modern manufacturing firms utilize more vertically integrated production processes. That means that companies produce many of the inputs needed in the final production process in-house, and they are less dependent on other local resources for inputs. At the same time, those firms require more production space and are consequently more land intensive. The factors contributed to many firms' decisions to move out of the central city locations.¹³

The effect of this outmigration can be seen in today's smaller post-industrial cities across the U.S. In these once thriving company towns, which in many ways embodied the American Dream with strong middle classes and rooted institutions, the industry that built them has long since closed up shop, leaving behind the remnants of boom time with little resources or jobs. Much like Somerville, their residents are often either long-time citizens, who feel a strong connection to the place, or new immigrants who have settled there due to the affordable cost of living.¹⁴

In addition to the historical market forces that have pushed manufacturing outside of the urban core, today, urban firms face a plethora of challenges that make it difficult to succeed in an urban environment. According to "Urban Manufacturing", these include environmental regulations and externalities, an unskilled labor force and antiquated facilities.¹⁵ A 2007 Report, "Made in San Francisco," identifies the challenges that San Francisco firms face, many of which are applicable to other urban areas. These include land

¹³ *Urban Manufacturing: Dilemma or Opportunity?* (Washington, DC: National Council for Urban Economic Development, 1993), 1.

¹⁴ Lorlen Hoyt and Andre Leroux, *Voices from Forgotten Cities: Innovative Revitalization Coalitions in America's Older Small Cities* (Policy Link, Citizens' Housing and Planning Association and Massachusetts Institute of Technology, 2007), 8.

¹⁵ *Urban Manufacturing: Dilemma or Opportunity?*, Preface.

use constraints, anti-industry governance, a lack of business assistance programs for industrial firms, and poor quality of infrastructure in industrial areas, particularly a lack of public transit serving industrial areas and poor maintenance of industrial areas.¹⁶

In addition to the challenges that firms face, “Made in San Francisco” identifies three key challenges policy-makers must address when attempting to promote and support urban manufacturing. First is the “unsolvable challenge of limited land area.” The report indicates that the “land available for the kind of larger-footprint and operations-intensive activities characteristic of Back Streets Businesses is not growing, and in fact has been shrinking over recent decades as office and residential uses have slowly spilled over into formerly industrial districts from adjacent neighborhoods.”¹⁷ This factor is exacerbated by a loss of flexible building stock that has traditionally been used for industrial purposes with little to no new development of industrial space to replace the reduced supply.¹⁸

Second, there is a problem of general public misperception and lack of exposure to the city’s light industrial businesses and thus a lack of a unified advocacy voice for this industry. This lack of awareness could lead to a diminished importance afforded to this sector’s ability to provide economic development returns. The report claims that a major part of the problem is that there isn’t a perception that a problem even exists.¹⁹

Lastly, with the rapid growth of the bioscience sector and internet-related digital media and digital fabrication businesses, as well as R & D firms in the “green technology” sector, there is confusion as to what exactly is “industrial.” These new types of businesses come along with older, more traditional light industrial uses in the limited areas of the city where industry has traditionally clustered. San Francisco is struggling to plan for these new uses, and without precedence to draw upon, is struggling to model the implications that their decision

¹⁶ *Made in San Francisco* (Back Streets Businesses Advisory Board, City of San Francisco, 2007), 44-45.

¹⁷ *Ibid.*, 18.

¹⁸ *Ibid.*

¹⁹ *Made in San Francisco*.

will have on the local economy. Do they have the same needs? Should they be subject to the same rules and zoning regulations?²⁰

Given the numerous and sizable challenges that urban manufacturers and their respective economic development practitioners face, one must question why we continue to endeavor to make urban manufacturing successful. Despite its many challenges, the presence of a healthy manufacturing sector provides significant economic benefits for cities by providing jobs and significantly contributing to the tax base. Manufacturing jobs are particularly attractive to cities like Somerville that have a diverse population with varying degrees of skills and education. To that end, manufacturing provides a wide range of employment as compared to other industries – from entry-level production where workers are trained on-the-job, to skilled high-tech precision manufacturing that requires a technical degree, to research and development and management and operations jobs, which might require a post-secondary degree. A manufacturing base would provide jobs for many of the City’s residents, the majority of which commute to other places for employment; currently 83 percent of Somerville’s residents work outside of the City.²¹ Creating jobs in Somerville for Somerville residents would also add to Somerville’s currently dismal daytime population, providing foot traffic to its many restaurants, bodegas and other retail establishments that suffer from low daytime sales.

Next, manufacturing has a high relative wage as compared to other industries. Massachusetts manufacturing jobs pay 26 percent above the state average.²² In Somerville, the average annual manufacturing wage is \$52,104 as compared to the average retail trade wage of \$26,208 and the average hotel and restaurant wage of \$19,760. However, only 6

²⁰ Ibid., 18-20.

²¹ *Economic Trends*.

²² “Staying Power: The Future of Manufacturing in Massachusetts.”

percent of Somerville residents currently work in manufacturing as opposed to 32 percent who work in hotel, restaurant, retail and other service industries.

Lastly, manufacturing provides an opportunity to create goods that can be exported to other cities, regions and countries. A strong export economy will bring new revenue into the City and the region, as opposed to recycling the wealth that already exists. Statewide, manufacturing is a significant export industry for the region; 29 percent of firms have out-of-state customers and 14 percent have a significant foreign customer base.²³

Those who believe manufacturing is dying are correct that urban areas will increasingly have difficulty competing in the mass production of low-cost commodities; and most would agree that the same applies to most, if not all, of domestic production. So what is the future of manufacturing in the U.S.? Industry analysts expect almost all new manufacturing jobs in the US will come from small, high-tech companies.²⁴ A Pease Group survey of small manufacturers (less than \$25 million in annual sales) shows that most expect to grow this year, many by double digits. Some, such as Wired Magazine's Editor-in-Chief Chris Anderson, are going as far as to predict that niche, small-scale, high-tech manufacturing will be the "next Industrial Revolution." The main factors driving this shift are the increased prevalence in cheap and easy to use prototyping tools and a shift in manufacturing towards lower volume and higher profit margin products. On the consumer side, there is increased market demand for customization due in large part to the availability of substitutes provided by the Internet and e-commerce and reduced transportation costs.²⁵

A McKinsey and Company report, *"Creating Value in the Age of Distributed Capitalism,"* claims that "a historic transition in capitalism is unfolding where there is a convergence of technological capabilities and the values associated with individual self-determination." The

²³ The Center for Urban and Regional Policy School of Social Science, Urban Affairs, and Public Policy Northeastern University, *Staying Power: The Future of Manufacturing in Massachusetts.*

²⁴ Ibid.

²⁵ Ibid.

author, Shoshana Zuboff, the former Charles Edward Wilson Professor of Business Administration at the Harvard Business School, explains the effects of increased self-determination on the conventional capitalist business model:

In the same way that mass production moved the locus of industry from small shops to huge factories, today's mutations have the potential to shift us away from business models based on economies of scale, asset intensification, concentration, and central control. That's not to say factories are going away; their role in supplying quality, low-cost goods, including the technologies underpinning the shift to more individualized consumption, is secure. Yet even mass production is becoming less homogenous (consider the ability to order custom sneakers from Nike). And for many goods and services, new business frameworks are emerging: federations of enterprises—from a variety of sectors—that share collaborative values and goals are increasingly capable of distributing valued assets directly to individuals, enabling them to determine exactly what they will consume, as well as when and how. This shift not only changes the basis of competition for companies but also blurs—and even removes—the boundaries between entire industries, along with those that have existed between producers and consumers. The music and newspaper industries ignored this shift, to their great detriment. I believe *all* businesses will have to find ways to adapt to this new world if they want to grow.²⁶

Zuboff claims that the winners in this new age of capitalism will be those that “create value by offering consumers individualized goods and services at a radically reduced cost.”²⁷

Recently, the trend towards small-scale and customized goods has garnered national attention as several articles have been published highlighting small, urban manufacturing sectors. A February 11th article in the *New Republic* by Jennifer Vey, “New Manufacturers Make it in the U.S.,” begins by describing how the author’s six-year-old daughter asked her,

²⁶ Shoshana Zuboff, “Creating value in the age of distributed capitalism - McKinsey Quarterly - Strategy - Strategic Thinking,” http://www.mckinseyquarterly.com/Strategy/Strategic_Thinking/Creating_value_in_the_age_of_distributed_capitalism_2666.

²⁷ Ibid.

after examining her clothes and toys, “Don’t we make *anything* in this country?”²⁸ Vey responded to her daughter’s precocious question by referencing two urban areas with thriving industrial sectors: San Francisco and Baltimore. However, Vey points out that this is not just any manufacturing, in fact, it is dramatically different from the traditional concept of manufacturing: “Unlike the days when large companies dominated the nation’s commodity production, today’s manufacturing landscape is largely occupied by decentralized networks of small specialized firms, many of which are hidden in plain sight in America’s urban areas.”²⁹

Lizzie Bennett, author of a February 8th article, “We Still Make Stuff in San Francisco,” which appeared on the *Atlantic’s* website, explores the 200 to 300 businesses that actively manufacture products in San Francisco. Again, these are not your typical manufacturers; she characterizes these firms as small, fast and nimble and uses the firm she works for, Timbuktu, which makes custom messenger bags, as an example. The firm began production in 1989 - a time when many sewing firms were moving outside of the City. The founder is Rob Honeycutt, a bike messenger who “became fascinated with just-in-time manufacturing and applied the Toyota model to the making of messenger bags.”³⁰ Bennett further explains Timbuk2’s competitive advantage: “Because Timbuk2 is local (i.e. in the USA), we manufacture and ship custom bags in two to three business days. And if the customer is in San Francisco, we can do same-day manufacturing and delivery. This is more in-line with what online shoppers have learned to expect.”³¹

In addition to being small, quick and nimble, these firms also share some additional, important similarities. Kate Sofis of SFMade, a non-profit dedicated to supporting and

²⁸ Jennifer Vey, “Small Urban Manufacturers Make It In The U.S.A. | The New Republic,” February 11, 2011, <http://www.tnr.com/blog/the-avenue/83305/small-urban-manufacturers-make-it-in-the-usa>.

²⁹ Ibid.

³⁰ Lizzy Bennett, “We Still Make Stuff in San Francisco - James Fallows - Business - The Atlantic,” February 8, 2011, <http://www.theatlantic.com/business/archive/2011/02/we-still-make-stuff-in-san-francisco/70946/>.

³¹ Ibid.

growing manufacturing in San Francisco, comments in the *Atlantic* article on the characteristics of thriving San Francisco-based firms: "Companies here share a few very noteworthy traits. They are almost all consumer-product companies [that are] design-driven, intensely customer focused, increasingly sell direct, and often marry technology in their business model."³² Bennett goes on to reinforce the importance of technology in this combination; particularly technology that allows for the production of highly customized products with low minimums and a quick speed to market.³³

This movement from low to high-tech processes is not just a West Coast phenomenon. Using a classification scheme devised by the Organization for Economic Cooperation and Development (OECD), *Staying Power* divided the Massachusetts manufacturing sector into low-tech, medium-low-tech, medium-high-tech, and high-tech industries and traced manufacturing by technology intensity over time. This analysis shows that Massachusetts has moved from the low-tech production of shoes and textiles to a more technologically sophisticated sector with computer and electronic products, navigational measuring, electro medical and control instruments and semi-conductor and electronics leading the pack (by employment). The *Staying Power* chart below illustrates this movement – activities characterized as low-tech have decreased from 39.8 percent in 1970 to 30.6 percent in 2006, while high-tech activities have grown from 19.8 percent to 30.6 percent of the State's manufacturing production.

³² Ibid.

³³ Ibid.

Table 1.2: Share of Manufacturing by Technology Intensity, 1970-2006

Shares of Manufacturing Employment by Technological Intensity (1970 - 2006)					
	1970	1980	1990	2000	2006
Low-Tech	39.80%	29.70%	28.40%	29.40%	30.60%
Medium-Low-Tech	21.50%	21.10%	20.10%	22.90%	20.40%
Medium-High-Tech	18.90%	24.10%	24.80%	21.90%	18.30%
High-Tech	19.80%	25.70%	26.70%	25.70%	30.60%

Source: Calculations done by authors of *Staying Power: The Future of Manufacturing in Massachusetts*, using U.S. Census Bureau data and categorized by the Organization for Economic Co-Operation and Development's (OECD) Hatzichronoglou Methodology (1997).

An interesting difference in San Francisco and Massachusetts' current industry makeups are their respective products – San Francisco firms largely create end-consumer products, while Massachusetts firms create a mix of machine parts, electronic parts and chemical inputs. Massachusetts, known for its highly educated population and concentration of universities, particularly MIT, has several innovation clusters such as biotechnology and technical instruments, which are industries that can support a significant amount of vertical integration in one geographic area.

In this new era of capitalism, the urban manufacturers who will largely succeed are small to mid-size firms that utilize high-tech processes to create a specialized product. To attract and retain firms to urban areas, policy-makers must recognize these firms' potential and help them overcome the land and building constraints, capital access problems, and workforce issues that can delay or even deny their success. Undoubtedly, there is room for both consumer products and component parts in this game, however, cities that want to foster industrial uses must understand their strengths and weaknesses in relation to industry

sectors, paying particular attention to surrounding clusters and consumer trends that could be leveraged for their advantage.

The remainder of this paper will attempt to determine the extent to which there is a future for the manufacturing industry in the city of Somerville. More specifically, what are the characteristics of a specific place that help support urban industry, and does Somerville have enough of these characteristics to pursue an industrial strategy? If so, what type of industry is best suited for Somerville and what can the City's policy-makers do to attract, retain and grow these businesses. How can economic development strategies adapt to address the needs of this new iteration of manufacturing? To answer this question I have embarked upon a series of inquiries investigating manufacturing in Somerville and the greater Boston metro area.

First, I conducted data analysis using publicly available data from sources such as the Bureau of Labor Statistics and the U.S. Census Bureau, to determine the existing make-up of manufacturing within Somerville, the market for these businesses and their potential to generate jobs and tax revenue. Next, I examined the Boston metropolitan area's manufacturing sector to determine what sub-sectors are growing, what factors drive their location decisions, and what policies and programs attract and grow these businesses.

Additionally, this information provides a picture of how Somerville compares to other regions. Secondary data sources, such as industry reports, magazines and newspaper articles and public documents are also referenced, when appropriate, to provide context, comparison and expert analysis.

More than 25 interviews with Somerville manufacturers, manufacturers in the Boston metro area, and economic development practitioners in cities with similar demographic and socio-economic characteristics are referenced to provide anecdotal information to either support or explain the data analysis and to guide recommendations.

The focus of interviews with manufacturers was to understand their location decisions, life cycle and growth potential. This information helps guide decisions regarding what sectors are suitable candidates for location in Somerville, given the City's physical layout, building stock, population and other assets. Interviews with other economic development practitioners will help glean best practices and lessons-learned that also inform the recommendations of this paper.

To understand the context in which this research takes place, I have examined literature pertaining to the history of Somerville, the history of manufacturing and manufacturing policies in Somerville, and to a lesser extent, Massachusetts. In particular, I have researched Somerville's past efforts to promote manufacturing in the Boynton Yards plans, and their legacy today.

Based on my quantitative and qualitative findings, and informed by the City's past failures, successes and lessons learned, I have made recommendations regarding what types of manufacturing sub-sectors are best suited for Somerville and what policies and programs the City should engage in to further promote them.

Chapter 2: Somerville's Industrial History

The City of Somerville has a long history as an industrial center for the Boston metropolitan area with a diverse mix of artisan and semi-industrial manufacturing. Originally established as an extension of Charlestown, Somerville is less than two miles from downtown Boston, making it an ideal location as a manufacturing and distribution hub. During the eighteenth century, much of the area remained rural but Somerville settlers established sawmills, gristmills, limekilns and fish weirs to help fuel the activity of the greater Boston area. The mid-eighteenth century brought the establishment of the brick-making

business, which took advantage of region's clay beds, capitalized on the architectural style of the time, and employed many of the areas new immigrants.³⁴

In the nineteenth century, Somerville was unique among its peers; it was neither rural, like outlying Concord and Lexington, nor industrial, like nearby Waltham and Newton, which harnessed the power of the Charles River to run mills. However, with the arrival of rail transportation in 1835, Somerville's economy began to shift more dramatically away from agrarian uses to a more concentrated, yet diverse, industrial mix. By the mid-19th century, Somerville boasted facilities for soap production, wool dye, glass production and perhaps most-importantly, meat packing. The slaughtering and meat packing industries in Boynton Yards remained the top industry, by output and employment, through the 19th century. In the 1920s, the First National Grocery Store chain opened a plant in what is now Somerville's Assembly Square, and the A&P grocery chain also built a warehouse and bakery in the Brickbottom area, further solidifying the area as a hub for food production and distribution – a legacy that is still apparent today. The 1920s also brought more technologically advanced production, such as the Ford Motor Company facilities. The Ford Motor Plant closed in 1958 and by the late 1970s, a number of other industrial businesses had closed as well. During the last half of the 20th century and into the 21st, the City struggled to maintain a strong industrial mix, but held on with anchor establishments such as Ames Safety Envelope and Rogers Foam, which each employed hundreds of people.³⁵

One particular area of interest is Boynton Yards, which has been at the center of Somerville's Industrial redevelopment plans for three decades. Boynton Yards is arguably Somerville's oldest industrial center and was the birthplace of its brick industry, which was followed by slaughterhouses and meatpacking. Other industries that were located in Boynton

³⁴ Landscape Research (Firm);Somerville (Mass.), *Beyond the Neck : the architecture and development of Somerville, Massachusetts*. (Cambridge Mass.: Landscape Research, 1982).

³⁵ Ibid.

Yards include glass, soap and ice cream. In the first half of the twentieth century, several small residential neighborhoods sprung up in the adjacent areas intended “as housing for workers within hearing of the factory whistles.”³⁶ After World War II, Boynton Yards’ industrial base began to decline and less intensive uses such as automobile junkyards, scrap metal dealers and barrel cleaning and storages moved into the areas vacated by older industrial uses.³⁷

The City commissioned the first comprehensive study of the project area in 1981. The report, completed by the consulting firm Harrington, Keefe & Shork, Inc. (HKS), documented the “conflicting land uses and blighted conditions.”³⁸ This report was followed by a more in depth study in July of 1984, which conducted a detailed analysis of the problems of the area: soil conditions, existing utilities and traffic circulation problems.

In the late 1980s the City continued its planning for the area and produced two plans: *Boynton Yards Revitalization Plan* and *Boynton Yards Revitalization Plan: Phase I: Urban Renewal Plan*. Originally, there were to be four phases of work but only one was initiated (Phase I), which was terminated three years short of its twenty-year timeframe, in 2006.

The first plan, completed in February of 1988, was the *Boynton Yards Revitalization Plan* which outlined major efforts to be undertaken in the area, including “the elimination of blighted and decadent conditions, a reduction in the conflicting land uses, the assemblage of parcels to develop an industrial park, a more rational circulation system, the revitalization of residential neighborhoods, the creation of jobs and more affordable housing, and the expansion of the tax base for the City.”³⁹

³⁶ *Boynton Yards Urban Renewal Plan* (Somerville, MA: Somerville Redevelopment Authority, 1989), 5.

³⁷ *Ibid.*, 3-5.

³⁸ *Ibid.*, 5.

³⁹ *Urban Renewal Plan for the Boynton Yards and Union Square Districts* (Somerville, MA: Office of Strategic Planning and Community Development, August 2008), 5.

Following the *Boynton Yards Revitalization Plan*, the City undertook the Phase I Plan, a more in-depth study and planning effort for a smaller planning area of approximately 9 acres. The objectives of this plan are outlined below:

- 1) The elimination of blighted, decadent and substandard conditions in the project area;
- 2) The encouragement of more appropriate land uses in the project area by eliminating conflicting and incompatible land uses;
- 3) The assembly of parcels in the core area suitable for modern industrial park development, to provide opportunity for expansions for small businesses, particularly those currently based in Somerville, and in the Boynton Yards area;
- 4) The development of a more rational traffic circulation system for the project area so that new and existing businesses may have safe and convenient access by both automobile and truck traffic;
- 5) The creation of additional job opportunities, particularly for low and moderate income people;
- 6) Expansion of the tax base for the City of Somerville.⁴⁰

A major component of the plan was to create zoning that encouraged more appropriate uses. In particular, the plan created an Industrial Park (IP) allowing only clean, light intensity commercial or industrial uses in the area. The Phase I area fell completely within the new IP area. The IP goals were stated in the original Phase I plan as follows:

- 1) Encourage the development of light intensity, clean industry, serving the expansion and diversification of the local economy;
- 2) Provide quality employment opportunities for Somerville residents;
- 3) Provide appropriate locations with adequate transportation access for light intensity industry;
- 4) Reduce conflicting land uses which detrimentally affect surrounding properties and neighborhoods;
- 5) Provide appropriate buffers of green space, structural screens between industrial and residential areas, and;
- 6) Insure that industrial development is an aesthetic compliment to the City of Somerville.⁴¹

According to City documents, the Urban Renewal Plan Phase I was successful to the extent that the majority of the goals outlined in the plan were met or “rendered obsolete” by the changing market and economic shifts. The plan officially closed on June 22, 2006. In the resolution a summary of the accomplishments and shortcomings of the Urban Renewal Plan was given, which include:

⁴⁰ *Boynton Yards Urban Renewal Plan*, 12.

⁴¹ *Ibid.*, 14-15.

- The substandard, decadent, and blighted properties identified were acquired, demolished and remediated;
- Properties that were identified for disposition were assembled and redevelopers were approved;
- Transportation access improved through the creation of new roads and reconstruction/realignment of previous roads;
- The tax base was expanded for the City;
- New job creation/retention exceeded U.S. Department of Housing and Urban Development (HUD)'s requirements with the creation/retention of 626 jobs (71% of which were low/moderate benefit).⁴²

The failed goals of the Phase I Plan (including a one acre portion of the Project Area that remained undeveloped) were thought to be “no longer achievable...and that the continuation of the obligations and conditions under the Plan is no longer relevant or applicable”. The objectives of the Phase I Plan were thought to be “satisfactory, though not completely exhausted.” Phases II, III and IV were never developed or implemented. Instead of amending the original plans from the 1980s, the City of Somerville stopped work on the Urban Renewal Plan as it stood.⁴³

Not long after the 1989 plan was halted in 2006, an Urban Redevelopment Plan was once again drafted in 2008. However, this plan stalled at City Hall. This plan marked the City's first efforts to plan for Boynton Yards in anticipation of the Green Line MBTA Extension –the City is slated to receive five new T stops through the Green Line Extension, including one in Union Square, which is adjacent to Boynton Yards and is a critical component and catalyst to the Urban Renewal Plan at Boynton Yards/Union Square. A departure from the 1989 Phase I plan, which created the Industrial Park, the 2008 draft calls for the elimination of industrial uses altogether:

Underpinning the vision and the implementation plan behind the Boynton Yards and Union Square URP is the desire to transform an area that has most recently been a light industrial area into a more lively, mixed-use neighborhood. While there is a certain mix of businesses within the area now, this plan allows for a more diverse mix of uses within the area, including office, commercial, residential and open space uses.⁴⁴

⁴² *Urban Renewal Plan for the Boynton Yards and Union Square Districts*, 17-18.

⁴³ *Urban Renewal Plan for the Boynton Yards and Union Square Districts*.

⁴⁴ *Ibid.*, 9.

The 2008 URP Redevelopment also describes the challenges to redevelopment that remain today:

An irregular street pattern that lacks connectivity throughout, the Fitchburg Railway right of way which divides the site and hinders traffic flow and ease of north-south pedestrian access, a lack of pedestrian amenities and open spaces predominate throughout the area, an abundance of small and irregular shaped parcels act as barriers to further development, and a plethora of auto-related uses and scrap yards makes this area a potentially undesirable place for developers as there are many obstacles to overcome with access and assemblage of parcels, as well as compatible land uses in the area. Furthermore, the lack of public spaces does little to attract new investment into the area.⁴⁵

Today, the City has revived its efforts to plan for the Boynton Yards and is drafting yet another redevelopment plan. Boynton Yards' current uses are identical to the conditions described in the 2008 URP and represent a missed opportunity for the City in both employment and tax revenue; uses such as chop shops and scrap yards are not the area's highest and best use, and also discourage other private investment. However, Somerville's persistent history as an industrial center for the larger Boston area suggests that Somerville is playing a key role in the region as the industrial market has remained in Somerville. This role should be bolstered and supplemented with a refined manufacturing strategy that retains industrial uses but transitions underutilized areas, such as those occupied by scrap yards, chop shops and storage facilities, to higher uses within the industrial sector. A redeveloped Boynton Yards, with its proximity to Union Square, Inman Square, Kendall Square and the Lechmere area, as well as the upcoming public transit infrastructure, has great potential for a vibrant, revitalized neighborhood center. The City's current planning, specifically its potential elimination of all industrial uses in Boynton Yards, would lead one to believe that the City does not value the role of industrial uses despite the fact that they provide relatively high-wage jobs for residents with varying degrees of skills. The City should carefully consider the mix of uses that will best serve this area; in particular, it should not make a

⁴⁵ *Ibid.*, 7.

short-sided decision, which would eliminate thriving industrial firms. What's more, a thoughtful 21st century industrial strategy must acknowledge the changing dynamics of urban manufacturing (from large, land intensive, low-tech operations to small, high-tech workshops) and supplement the land use and real estate strategies that were once the whole of economic development plans, with strategies that address new manufacturing needs' such as technical assistance, networking and infrastructure investments.

Chapter 3: Manufacturing in Somerville and the Region

In Somerville, the evolution of manufacturing “started with basic pottery, slate and bricks production, with the brickyards being replaced by brass tube manufacturers, which were then followed by glass manufacturing and finally automobile plants. The Ford plant closed when heavy manufacturing left Massachusetts en masse after World War II.”⁴⁶ Today, Somerville’s manufacturers are small in scale and fall within three categories: 1) bastions of older industrial uses such as forging and ironworks; 2) consumer products including artisan*, food production, and small batches of flexible specialization** ; 3) a few notable higher-tech firms, several of whom have recently left Somerville as their production needs ramped up. Somerville is unique in a region dominated by land intensive suburban manufacturing and Cambridge and Boston’s high-tech biotechnology, pharmaceutical and technical instrument manufacturing. Each of Somerville’s sectors have different needs and have located in Somerville under different circumstances and for different reasons. Older industrial uses have been around for decades and remain in Somerville largely due to inertia and the cost of relocation. Consumer product and food manufacturers came to Somerville because of its low rents and unique, older industrial building stock. They also appreciate and benefit from

⁴⁶ *Economic Trends*, 16.

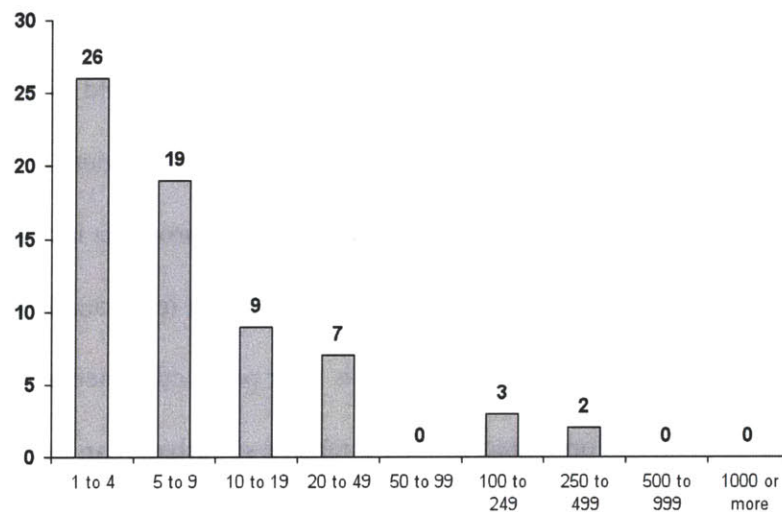
** Artisan production is limited in quantity and uses traditional methods.

** Flexible specialization uses computer-aided manufacturing technologies, paired with team-based work organizations.

Somerville’s active artist and design communities and networks. High-tech companies often came to Somerville to incubate their prototypes in garage-type spaces. However, when it came time to scale up, these businesses often leave for the suburbs where they can find larger floor plates, higher quality building stock, and equivalent rent per square foot.

Now, let us take a look at the current industry makeup in Somerville and how it compares to region. According to 2007 Massachusetts Department of Labor Employer Tax Data, there are currently somewhere between 66 and 69 manufacturers in the City of Somerville. The majority of these firms are small – 61 firms have less than 50 employees and 29 have less than five employees, which is characteristic of entrepreneurial efforts.

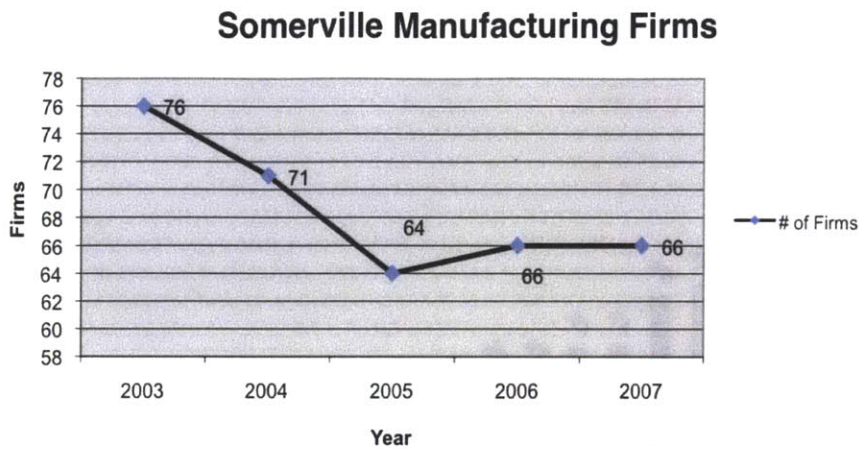
Table 1.3: Somerville Manufacturing Firms by Employment Size



Source: Massachusetts Department of Labor, *Employer Tax Data, 2007*

Like national and statewide trends, the number of manufacturing firms in Somerville is declining. From 2003 to 2007, the number of manufacturing firms in Somerville decreased from 76 firms to approximately 66 firms.

Table 1.4: Somerville Manufacturing Firms, 2003-2007



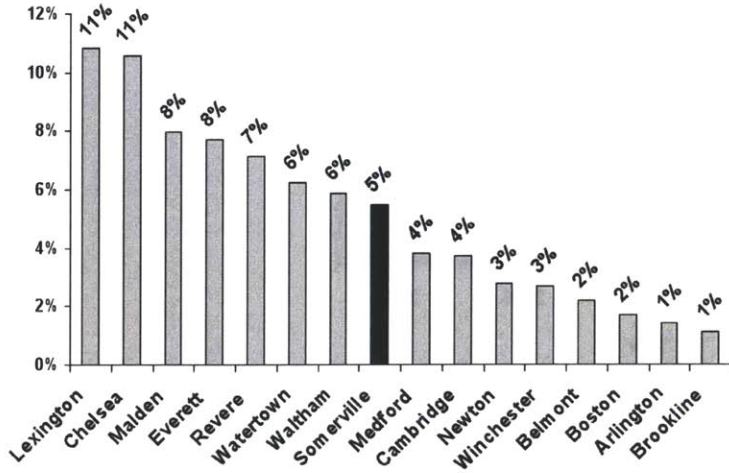
Source: U.S. Census Bureau, *Zip Code Business Patterns, 2003-2007*

In the Boston metropolitan statistical area (MSA) all manufacturing employment declined 14 percent from 2003 to 2007 but overall payroll increased by 2.47 percent. One can infer that this is partially due to streamlining of production resulting in layoffs, which in turn reduces operating costs and increases wages and profits. Another phenomenon that is likely at play given Massachusetts' shift in technology intensity from low to high-tech, is the closing of large facilities with low profit margins and the establishment of new higher-tech productions with fewer employees but higher wages and profit margins. This evidence is supported by recent trends in Somerville, such as the closing of Ames Envelope and Rogers Foam, large-scale producers of paper and foam products with hundreds of employees, and the establishment of smaller operations such as iRobot and Second Wind, makers of robotics and wind-measuring devices which both employ under 50 employees.

As of 2007, manufacturing accounted for 1,175 jobs and roughly five percent of Somerville's employment. Somerville is the median city for manufacturing employment in

the MSA – suburban Lexington leads the pack at 11 percent and Brookline and Arlington tie for the lowest manufacturing employment at one percent.

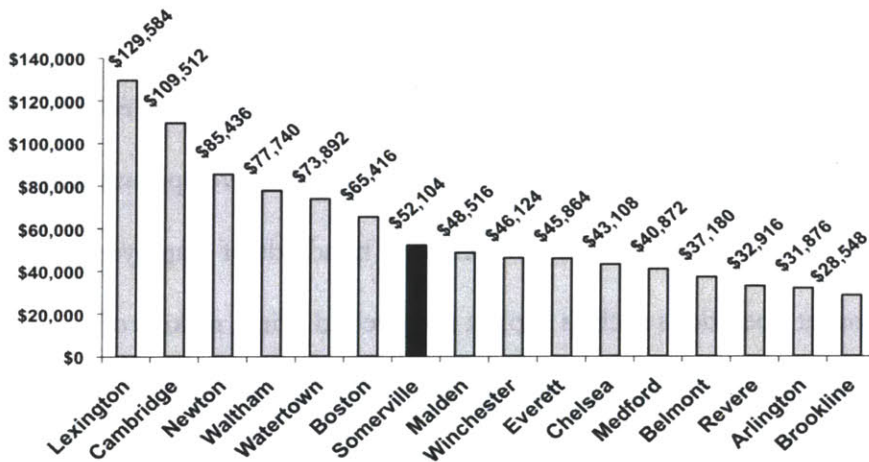
Table 1.5: MSA Manufacturing Employment



Source: Massachusetts Department of Labor, *Employer Tax Data, 2007*

Somerville’s manufacturing wages are also in the middle of the pack for the region, although higher than a majority of Cities’ averages. Somerville manufacturing wages falls directly after Boston’s wages, but are nearly half of Cambridge and Lexington’s wages.

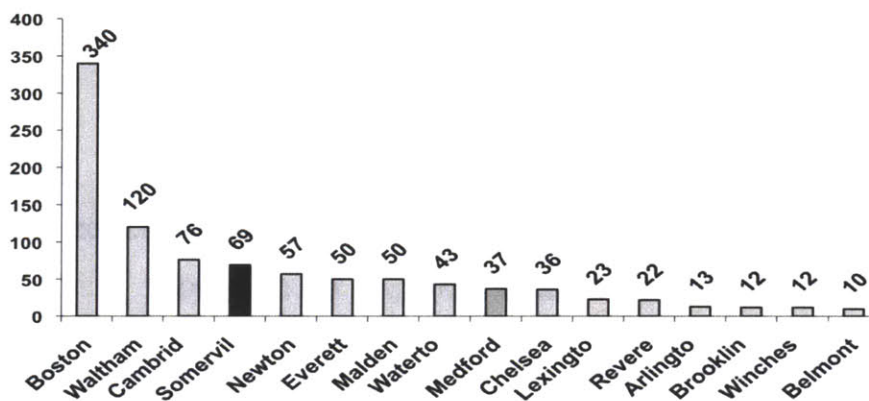
Table 1.6: MSA Manufacturing Wages



Source: Massachusetts Department of Labor, *Employer Tax Data, 2007*

While manufacturing in Boston only makes up two percent of its employment, it has a whopping 340 establishments. In comparison, Lexington, for which manufacturing makes up 11 percent of its employment, the highest in the region, only has 23 firms – it has fewer firms but these firms are larger by employment class which is typical of land intensive suburban manufacturing.

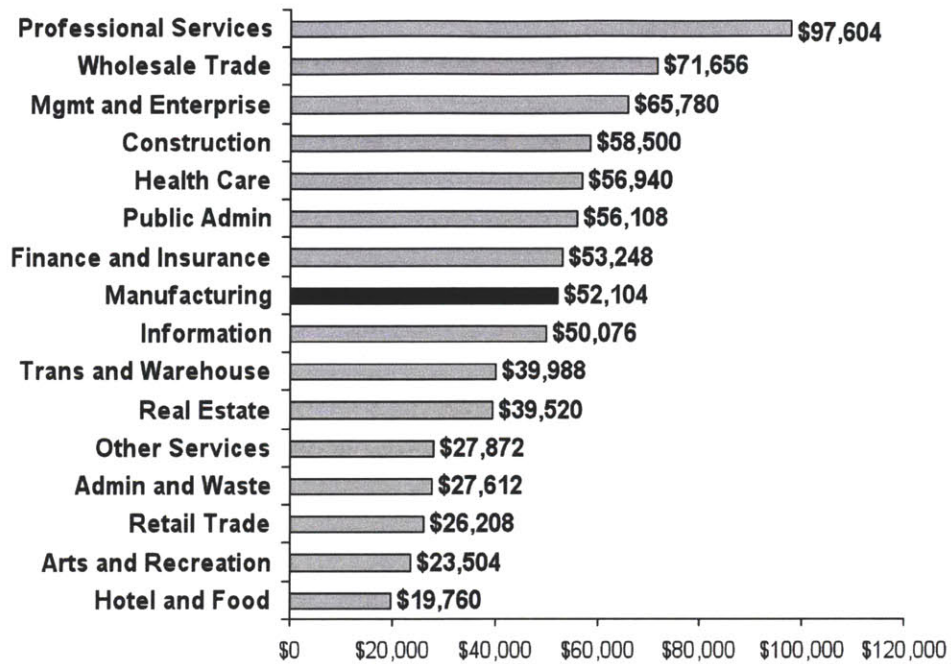
Table 1.7: MSA Manufacturing Firms



Source: Massachusetts Department of Labor, *Employer Tax Data*, 2007

While manufacturing only accounts for five percent of employment in Somerville, it accounts for 6.5 percent of Somerville wages because manufacturing salaries are relatively high paying. The average manufacturing wage in Somerville is \$52,104 – nearly \$30,000 more than the average wage in Somerville’s hotel and food industry and more than \$25,000 more than its retail sector. However, 32 percent of Somerville residents work in hotel, restaurant, retail and other service industries as compared to six percent in manufacturing – a significant opportunity to move residents to higher wage professions.

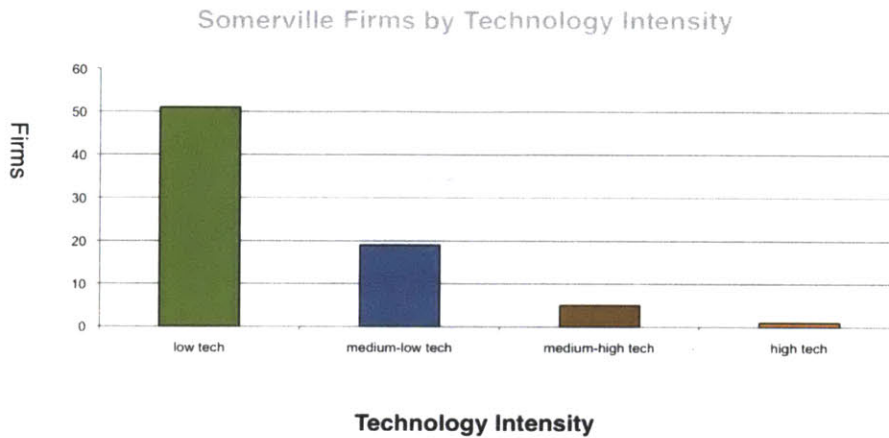
Table 1.8: Somerville Wages by Industry



Source: Massachusetts Department of Labor, *Employer Tax Data, 2007*

At first glance, the industry appears quite diverse with 44 different six-digit North American Industry Classification System (NAICS) codes. However, when consolidated at the three digit level, the City has four small clusters: printing (11 firms), food manufacturing (10 firms), furniture manufacturing (10 firms) and miscellaneous manufacturing (9 firms) which captures instruments, bicycles and jewelry-making among other things. Unlike Massachusetts, Somerville has not experienced the shift from low to high-tech. As seen in the table below, more than half of Somerville’s manufacturing firms fall into the low-tech category.

Table 1.9: Somerville Firms by Technology Intensity

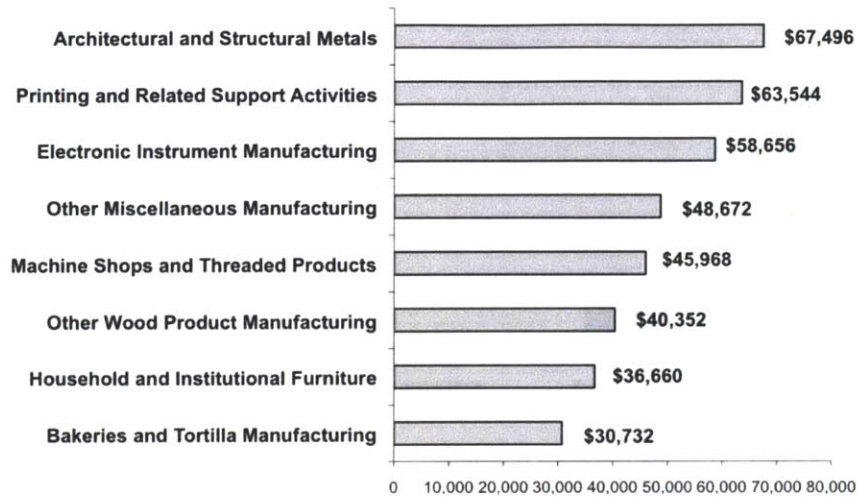


Source: Calculations done by Anne Emig using 2008 InfoUSA data and categorized by (OECD) Hatzichronoglou Methodology (1997).

Low-tech firms include iron works, foundries and other one-off uses as well as what the City characterizes as “artisanal goods.” The furniture, food clusters, miscellaneous - a catch all that includes guitars, bicycles and jewelry-making – and printing clusters all have firms that fall into the low-tech category as well as some firms that utilize flexible specialization that fall into the medium-low tech grouping. Despite a few high-tech exceptions, Somerville’s firms are “low-tech” according to the OECD methodology. However, other cities, such as San Francisco, have been able to foster a higher-tech consumer goods subsector because the firms use technologically sophisticated processes.

While Somerville manufacturing has an overall higher wage than the service sectors, all manufacturing is not equal. Below is the breakdown of key sectors of manufacturing wages present in Somerville at the four-digit NAICS code level.

Table 2.0: Somerville Manufacturing Wages

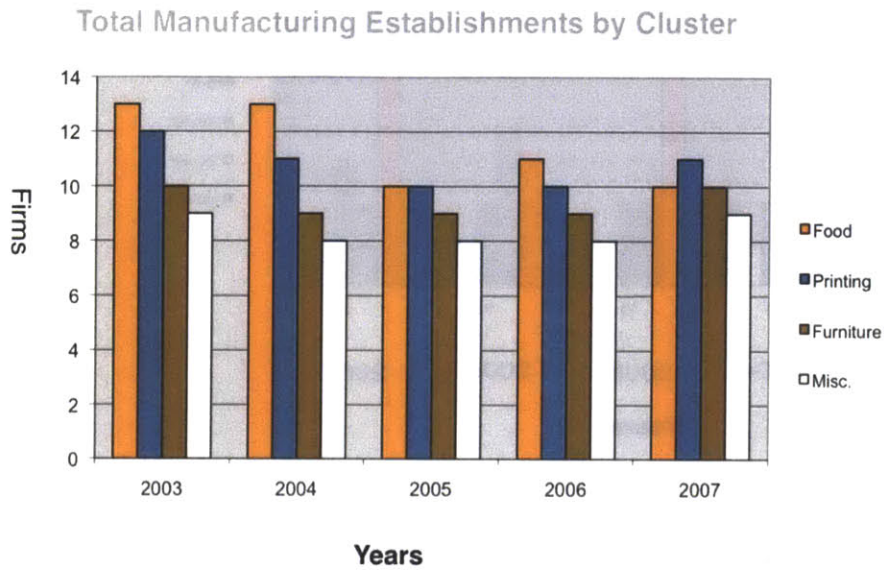


Source: U.S. Census Bureau, Employer Tax Data, 2006, *4 digit NAICS code

Architectural and Structural metals (a small and shrinking category in Somerville) has the highest wage at \$67,496, with Printing and Related Support Activities following at \$63,544. Miscellaneous manufacturing is relatively high at \$48,672 and Furniture lower at \$36,660. Bakeries and Tortilla Manufacturing (the largest type, by firm, of food manufacturers in Somerville) has the lowest wage at \$30,732. A higher-tech sector, Electronic Instrument Manufacturing, a sector that Somerville lacks but is strong in the Boston MSA, has a high-paying wage of \$58,656.

In relation to number of establishments, it is important to note that all four Somerville clusters are small, ranging from 8 to 11 firms. From 2003 to 2007, the two larger clusters – printing and food manufacturing - experienced overall negative growth at the establishment level decreasing from 12 to 11 firms and 13 to 10 firms respectively. Furniture and Miscellaneous manufacturing declined in 2004, 2005 and 2006, but had a slight rebound in 2007, bringing them back to their original 2003 levels. However, no cluster had a gain or loss of more than three firms at any time in the five-year period.

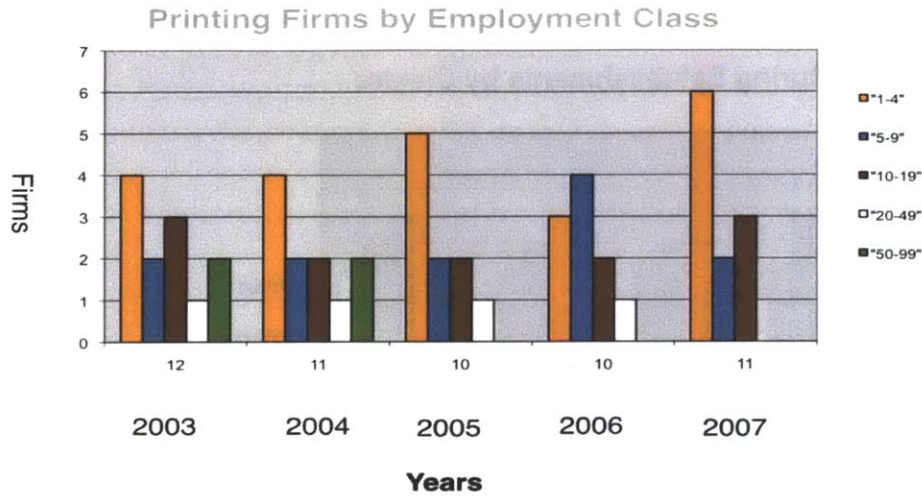
Table 2.1: Somerville Cluster Establishments, 2003-2004



Source: U.S. Census Bureau, *Zip Code Business Patterns, 2003-2007*

While there are currently only 11 printing establishments in the City of Somerville, there are also another eight to 10 printing related establishments such as book publishers and paper makers. This co-location of related industries in one geographic area hints at the presence of an industry cluster. At the MSA level, printing establishments have decreased 14.2 percent, employment has dropped 19.56 percent and payroll is down .7 percent. Printing is the only sector of the four clusters that had a decrease in payroll. Somerville printers have not been hit as hard, decreasing by only one firm over the five-year time period. Interviews with printers indicate that the significant decreases in employment can likely be attributed to technological advances in printing, which have led to increased automation of processes and thus less need for employees.

Table 2.2: Somerville Printing Manufacturing Firms by Employment Class, 2003-2007

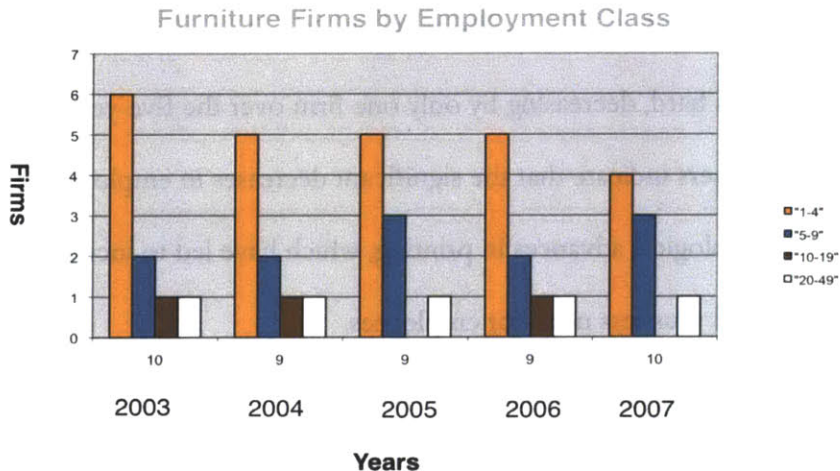


Source: U.S. Census Bureau, *Zip Code Business Patterns, 2003-2007*

Another important finding from interviews is that the NAICS printing category includes commercial printing and copying establishments who view themselves as separate from the manufacturing industry with different needs and challenges.

At the MSA level, furniture manufacturing firms have decreased 8.24 percent (there is no data for employment or annual payroll), while at the Somerville level, furniture manufacturers have held steady, fluctuating between nine and 10 firms over the five-year period.

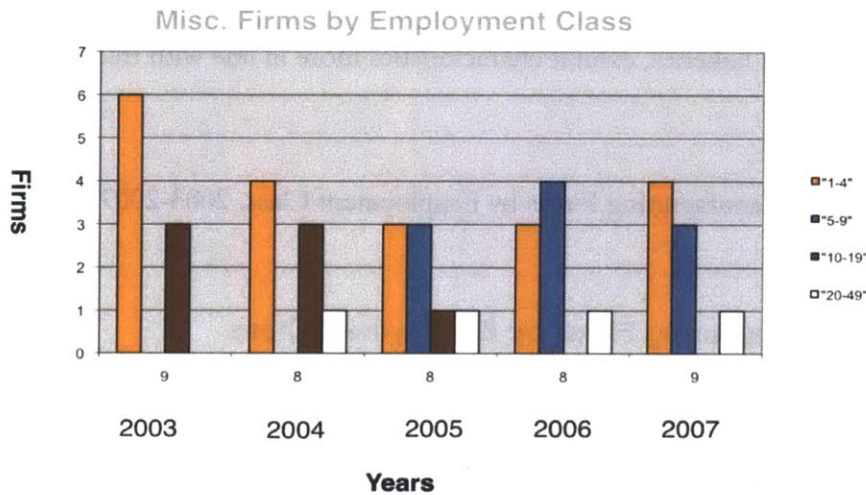
Table 2.3: Somerville Furniture Manufacturing Firms by Employment Class, 2003-2007



Source: U.S. Census Bureau, *Zip Code Business Patterns, 2003-2007*

Miscellaneous Manufacturing, which includes guitars, bicycles and jewelry among other things, has experienced large payroll gains at the MSA level. From 2003 to 2007, miscellaneous manufacturing establishments had a 53 percent increase in payroll. Unfortunately, it is difficult to ascertain exactly what subsectors of this ambiguous, yet diverse, category are experiencing such rapid growth. However, at least two of the miscellaneous firms that were interviewed, First Act and Independent Fabrication, shared some important commonalities with San Francisco’s industrial sector – they create highly customized consumer products using digital fabrication technology and are able to charge a premium for their products.

Table 2.4: Somerville Miscellaneous Manufacturing Firms by Employment Class, 2003-2007

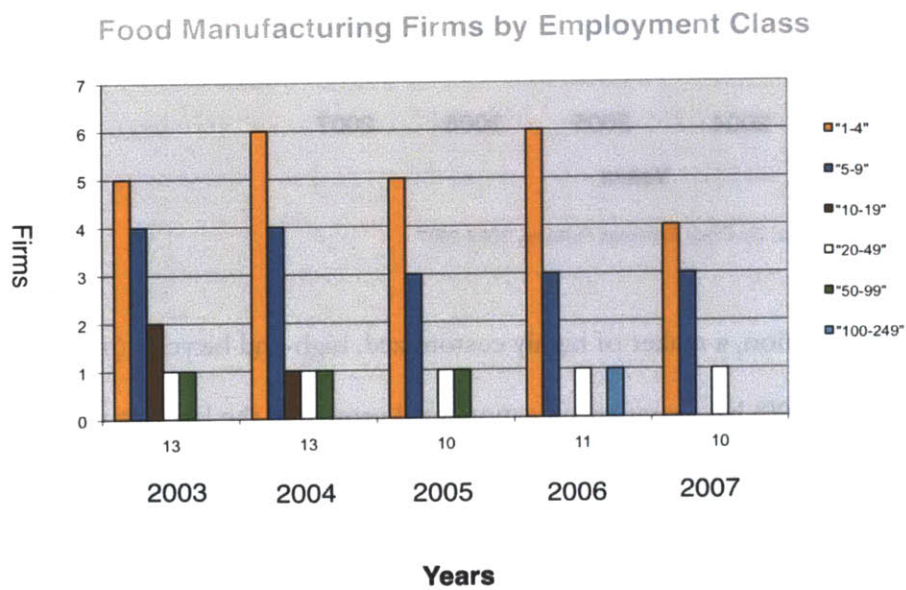


Source: U.S. Census Bureau, *Zip Code Business Patterns*, 2003-2007

Independent Fabrication, a maker of highly customized, high-end bicycles (models retail from \$6,000 to \$20,000) has experienced exponential growth in the last five years, selling to end-users and vendors around the globe. The company cited their unique product as their biggest asset. First Act, which makes customized guitars for top billing artists, can gross as much as \$15,000 per guitar.

Despite the miscellaneous sector's earnings, the cluster that has received the most attention from the City and local media is food production. Somerville is a city with deep food industry roots. It was once an area rich with livestock, agriculture and food processing facilities, but with the emergence of other industry and a dramatic increase in population, there was little room left for these food related businesses. However, in recent years, Somerville's local food movement has enjoyed a surge in popularity with the addition of new restaurants, farmer's markets and specialty food manufacturers. Today, Somerville has 10 food manufacturers, a slight decrease from 13 in 2007. Among Somerville's rising food stars are Taza Chocolate and Fiore di Nonno, a handmade mozzarella maker. However, not all players in this food movement are new. Boston area staples such as Capone Foods and Golden Cannoli originated in Somerville and have been in business for decades. These firms, which are essentially industrial bakeries, exhibit characteristics more in line with traditional, land intensive operations.

Table 2.5: Somerville Food Manufacturing Firms by Employment Class, 2003-2007



Source: U.S. Census Bureau, *Zip Code Business Patterns, 2003-2007*

At the MSA level, food manufacturing firms have decreased 9.2 percent while food employment is up by 4.55 percent. Food payroll has also increased by 10.83 percent; the largest MSA increase was in Chemical Manufacturing, which increased by 27.95 percent. Chemical Manufacturing includes makers of inputs for Cambridge's biotech sector, which explains its significant growth.

The time series analyses of the four clusters' establishments by employment class (See tables 2.1 – 2.5) show that they have failed to exhibit strong growth potential. When looking for strong growth potential in a time series, one would expect to see a decipherable shift in the employment size bins from left to right, or at least growth in the larger employment bins, assuming that new, small firms are continually added, which would account for a steady level of small firms. This type of pattern would illustrate firm growth by adding more employees over time. Not only do the graphs not exhibit this pattern, but in several instances (printing and food), we see the largest employment bins fall of the map completely, which suggests large manufacturing operations that employed a lot of people have closed and new firms have not sprung up to replace them. Certainly no large firms have been established. However, food and miscellaneous manufacturing production at the MSA level has grown over the four-year period indicating that there is potential for growth in these sectors.

Interviews support the quantitative evidence that Somerville's current industry mix has experienced challenges to growth. Consumer goods manufacturers report difficulty recruiting employees, often times because these fledgling operations are not able to pay employees a living wage or provide benefits. The Internet and e-commerce have lowered the barriers to entry, leading to market saturation and difficult competition, especially if products do not have a competitive advantage in either customization or specification. Lourdes Smith, the owner of Fiore de Nonno, which produces handmade mozzarella cheese, characterized

the simple, yet difficult, conditions of the specialty food market: “Everybody has an idea for a specialty cheese, salsa or cookie. It’s very difficult to compete.”⁴⁷ These businesses also reported profits lagging far behind volume of orders and a fear of debt financing, which could put them on faster growth track and allow them to employ skilled workers at a living wage.

However, it isn’t all doom and gloom for these firms. As in the case of San Francisco’s thriving small-scale manufacturing sector, firms that can identify a niche and charge a premium are having a lot of success. Firms that find a way to marry technology into their business process, often by selling directly to the consumer and allowing for a high level of customization are also succeeding. What’s more, these firms are benefitting from consumers’ increasing preference for local and sustainable products.

In a March 27, 2011 New York Times Article, Mark Dwight, the founder of SFMade, explains, “For decades we have developed a culture of disposability — from consumer goods to medical instruments and machine tools. To fuel economic growth, marketers replaced longevity with planned obsolescence — and our mastery of technology has given birth to ever-accelerating unplanned obsolescence. I think there is increasing awareness that this is no longer sustainable on the scale we have developed.”⁴⁸ Somerville manufacturers like Independent Fabrication and First Act guitars have adopted this model, making high-end, high-quality “investment” products.

Dwight knows that “pride of place” is “a way to ‘brand’ the history, culture, personality and natural beauty of [a] city as a means to uniquely differentiate our local

⁴⁷ Lourdes Smith, June 2010.

⁴⁸ “The Future of Manufacturing is Local - NYTimes.com,” <http://opinionator.blogs.nytimes.com/2011/03/27/the-future-of-manufacturing-is-local/>.

manufacturers.”⁴⁹ Somerville firms, like Taza Chocolate, have had great success partially due to exploiting this local cache.

As indicated by national and state trends, the high-tech manufacturing sector has strong growth potential, but for the most part, Somerville has not been successful in attracting this sector. However, several high-tech start-ups have made Somerville their home, citing its cheap rents and unique, hip identity as the main draw. However, three high-tech companies who initially located in Somerville - iRobot, 3Play Media, and Second Wind - have left Somerville because, as their operations expanded, they were unable to find adequate space for their operations. This will receive further treatment in the next chapter on Somerville’s strengths and weaknesses.

The prospects for manufacturing can be summarized with three major points. First, the bastions of old manufacturing that use mass production will continue to decline in Somerville (and in all urban areas) as they move to locations with lower taxes and cheaper labor, utilities and transportation costs. Somerville has already witnessed this trend. Ames Safety Envelope is the quintessential case in point and will be discussed further in Chapter 4.

But what about Somerville’s thriving consumer products industry which includes artisanal good such as hand made food, furniture, and guitars as well as higher-tech printing presses and bicycle-making? This sector has a significant presence in Somerville but faces a lot of challenges that could prevent them from creating a significant amount of jobs or tax revenue for the City. Businesses in this sector are small and don’t appear to be growing, face difficult competition, low profit margins and a high failure rate. However, firms that have identified a niche, are charging a premium, marry technology into their business model, and take advantage of local and sustainable consumer preferences are thriving. While this sector may not be providing significant exports for the region, by increasing the specialization of

⁴⁹ Ibid.

local markets and by keeping costs low, these types of businesses can be profitable within the region.⁵⁰ While some firms struggle to pay a competitive wage, overall the sector provides high-paying jobs relative to Somerville's large retail and restaurant industry. Perhaps most importantly, the idea of making things is intrinsic to the City's history and identity and in-turn contributes to its ability to attract other creative industries, a characteristic that will also be discussed in further detail in the following chapter.

Lastly, small manufacturing, which uses high-tech, proprietary processes in low-volume, high-margin production runs, is the sector that holds great potential for growth in the United States. Despite a few notable exceptions, Somerville has largely been unsuccessful in attracting and retaining these businesses.

Chapter 4: Location Decisions, Strengths and Weaknesses

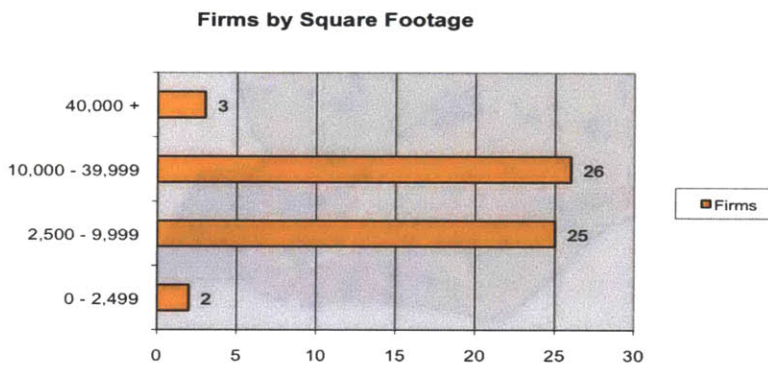
More than 25 manufacturing firms were interviewed to determine the factors they consider when making location decisions, the challenges they face, growth trends and the advantages and disadvantages of being located in Somerville. Given that the three sectors – low-tech, consumer goods and high-tech—each have different needs and challenges, it is not surprising that each had different and sometimes contradictory opinions about Somerville's strengths and weaknesses in relation to manufacturing.

Despite the often-contradictory views of the different sectors, there was one thing all three clusters could agree upon: Somerville rent is relatively cheap, and that is a good thing. When interviewed, firms cite the low cost of rent in Somerville as the driving factor in their location decision regardless of industry specification. The average rent per square foot for industrial space in Somerville is roughly \$10 per square foot as compared to \$16-\$18 for light industrial space in Cambridge. Of 63 firms categorized as factories in the City assessor's data,

⁵⁰ Kate Miller-Sofis, "Places of Making: Craft Space in our Urban Communities" (Cities Programme London School of Economics, 2003), 4.

firms range from 2,000 square feet to 228,231 square feet, with the median square footage at 10,229 - the mean is not a good indicator of overall size because it is skewed to the right due to two firms with floor plates over 100,000 square feet. The overwhelming majority of firms (51 out of 63) fall between 2,500 and 40,000 feet.

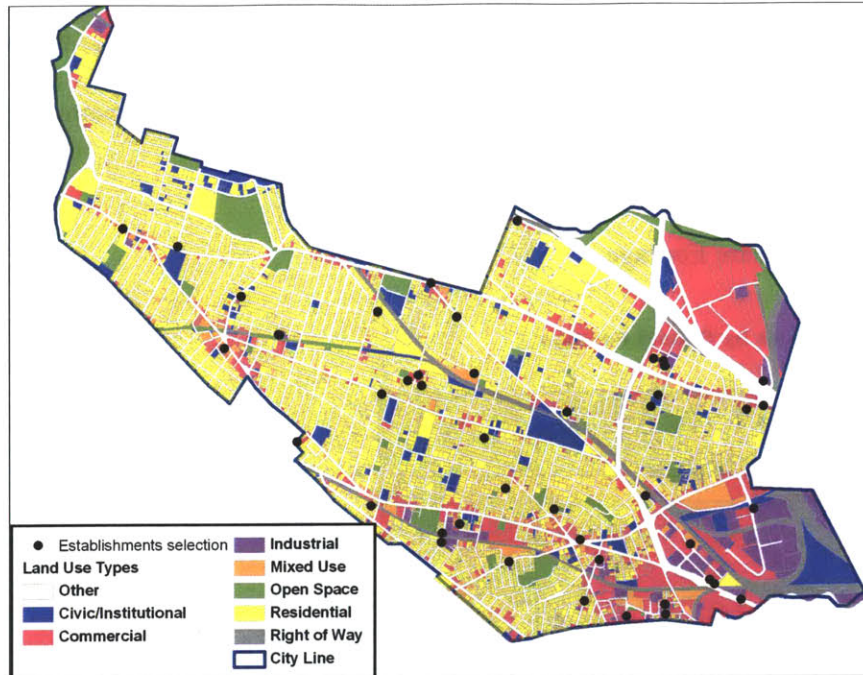
Table 2.6: Firms by Square Footage



Source: Somerville City Assessor Data, Winter 2010; InfoUSA, 2008

While manufacturers are present in almost all areas of Somerville, there are two areas with high concentrations of manufacturers – Brickbottom and Boyton Yards. These areas, as discussed in Chapter Two, have a long history of industrial use, and are physically separated from the rest of Somerville by highways and rail yards. One Boynton Yards building in particular, 561 Windsor Street, houses a plethora of light industrial, food manufacturing and printing operations. The building has been completely renovated but maintains an industrial feel, and most importantly, affordable rents. Joy Street Studios in the Brickbottom area is also home to several manufacturers, including Independent Fabrication. This building has larger unit sizes and retains a more industrial, bare bones look and feel.

Table 2.7: Somerville Manufacturing Locations



The vast majority of manufacturing firms in Somerville do not require any special zoning beyond light industrial and can be located adjacent to other uses. However, convenient access for vendors and delivery trucks is important to all firms and most firms prefer, if not require, loading dock access.

The Older Industrial Perspective

Somerville has historically been home to many of “the more noxious, undesirable industries” that were not allowed to locate in Boston or Cambridge, such as slaughterhouses, automotive plants and industrial laundry.⁵¹ This tradition persisted into the 1980s.

Somerville’s Economic Development Director, Rob May, likened Somerville’s business attraction program in the 1980s to an awkward, insecure adolescent: “We were the ugly girl at the dance. We’d take anything we could get.”⁵² Today, many of the low-tech older industrial firms that remain in Somerville are family-owned businesses that have been in Somerville for decades. Many of these uses, such as industrial laundry and foundries, would

⁵¹ Ezra Glenn, March 4, 2011.

⁵² Rob May, June 1, 2010.

not be permitted today, but have been grandfathered in as a result of decades of lax zoning permissions.

While the businesses that remain have yet to act on the suburban pull (their production has been stable, although not growing, so they haven't had the need to expand into larger production facilities and thus move to the suburbs) they do face significant challenges. The first is an aging workforce and a lack of younger workers to replace them. Valerie Ann Bono, General Manager and co-owner of Golden Cannoli, expressed this concern regarding her production floor employees. Golden Cannoli was started by Valerie's father in the 1960s and has always been in Somerville. Most of their employees are in their late 40s or early 50s and are approaching retirement. Bono commented on the nature of the work and younger workers' attitudes toward it: "the work is hot and uncomfortable and younger generations just aren't interested in that type of labor."⁵³

In addition to an aging workforce, many of these businesses are energy intensive, and the relatively high cost of utilities in Massachusetts makes it difficult to stay competitive. Bono said, "If we were smart we'd move to New Hampshire." She's not alone in this type of thinking. Ames Safety Envelope, a family-owned business that has been in Somerville since the 1930s and was once its largest employer at 500 jobs, announced in February of 2010 that it had sold its operations to TAB, a Wisconsin-based corporation. Ames' former CEO, Bill Shea, said in a statement on the Somerville Chamber of Commerce website "Computer-driven digital solutions have increasingly replaced the company's principal markets of X-ray and medical filing products. In addition, the Northeast has become an expensive area to operate a manufacturing operation..."⁵⁴ Steve Mackey, President of Somerville's Chamber of Commerce further commented on the price of doing business in the Northeast, "The

⁵³ Valerie Ann Bono, August 16, 2011.

⁵⁴ Gail Waterhouse, "Ames Envelope sold; 150 Somerville jobs lost," *Boston.com*, February 4, 2010, http://www.boston.com/yourtown/news/somerville/2010/02/ames_envelope_sold_to_wisconsi.html.

company that purchased Ames will be able to cut their overhead by one-third by moving its operations to Wisconsin.”⁵⁵ The outmigration of large scale, energy-intensive manufacturing in Somerville is typical of manufacturing trends nationwide, and is largely unavoidable and inevitable.

The Consumer Goods Perspective

Not surprisingly, when asked about Somerville’s strengths, consumer goods and food manufacturers repeatedly cited affordable rent as a driving factor, particularly for small, start-up ventures. For fledgling businesses, the ability to find space for \$10-12 per square foot, as opposed to \$16 to \$18 in the surrounding areas, is crucial to their success.

What’s more, many of these firms and their owners identify with both the socio-economic landscape and built environment of Somerville. In turn, this has created extraordinarily strong artisan networks. According to a 2009 survey conducted by the City of Somerville, more than half of its residents self-identify as artists.⁵⁶ These citizens appreciate being surrounded by other like-minded individuals in a place where they can access public transportation, ride their bicycles, access local and organic food and patronize Somerville’s many Squares with unique and locally owned restaurants and retail establishments. The City of Somerville’s Economic Development staff elaborated on Somerville’s appeal to Creative Class firms and residents in the 2009 Economic Trends report: “...there is a strong interrelationship between the character of residents, the mix of businesses and the way urban environment creates a sense of place...many firms were attracted to Somerville because of its perception as being “on the edge” and possessing both a raw built environment and a diverse, engaging population.”⁵⁷ Richard Florida coined the term “Creative Class” in his 2002 book The Rise of the Creative Class. Florida says that the Creative Class is a class of workers whose job is to create meaningful new forms. It is composed of scientists and engineers,

⁵⁵ Stephen Mackey, July 9, 2011.

⁵⁶ *Economic Trends*, 67.

⁵⁷ *Ibid*.

university professors, poets and architects, and also includes "people in design, education, arts, music and entertainment, whose economic function is to create new ideas, new technology and/or creative content."⁵⁸ Members of the Creative Class have always preferred to be in cities, and the role of older building stock has always been central to their location decisions. In her seminal work, The Death of Great American Cities, Jane Jacobs argues that these firms must initially locate in older stock, as few small businesses can afford new premises:

Cities need old buildings so badly it is probably impossible for vigorous streets and districts to grow without them. If a city area has only new buildings, the enterprises that can exist there are automatically linked to those that can support the high costs of construction. To support the costs of such high overheads, the enterprises must be either 1) high profit or b) well subsidized. Chain stores, banks, and chain restaurants go into new construction. And for really new ideas of any kind, there is no leeway for such chancy error and experimentation in the high-overhead economy of new construction. Old ideas can sometimes use new buildings. New ideas must use old buildings.⁵⁹

What Somerville may initially see as a hurdle to economic development, its old building stock, when marketed to the Creative Class, may actually prove to be a strength. One might wonder why attracting creative class residents is important for economic growth? Richard Florida would argue that it is important because it is not the jobs that bring the people, but the people that bring the jobs. To illustrate his point, Florida cites a 2002 survey of 4,000 recent college graduates, reported in *The Wall Street Journal*, which found that three-quarters of them identified locations as more important than job availability when selecting a place to live. Florida argues that:

Place is the key economic and social organizing unit of our time. It is place that solves the chicken-and-egg problem, matching people to jobs; jobs to place. Place provides the "thick" and fluid labor markets that help match people to jobs. Place supports the mating markets that enable people to find life partners. Places provide the ecosystems that harness human creativity and turn it into economic value.⁶⁰

⁵⁸ Richard L Florida, *The Rise of the Creative Class: And How It's Transforming Work, Leisure, Community and Everyday Life* (New York, NY: Basic Books, 2004), 8.

⁵⁹ Jane Jacobs, *The Death and Life of Great American Cities* (New York: Random House, 1961), 245.

⁶⁰ Florida, *The Rise of the Creative Class*, Preface, XIV.

According to Florida, the key dimension to economic growth is a city's ability to attract, cultivate and mobilize its creative residents.⁶¹

Within the creative class networks, the food networks are particularly strong. Somerville is known as a home to foodies, food entrepreneurs and great restaurants, which all contribute to the strength of the food networks and the ability to attract new food businesses, as well as businesses in general. Somerville food manufacturers have a strong connection to the City and cite their networks, both formal (such as Somerville First and Union Square Main Streets) and informal, as a key factor to their success.

Time after time, food firms enumerated the ways in which these networks have benefited their businesses. Fiorre de Nonno, a small operation (ranging from two to five people depending on the season) often works with other businesses in its building like Taza Chocolate to place bulk orders from food providers in order to get a better rate. In fact, when Fiorre de Nonno was in its infancy, the owner rented space in Taza's kitchen by the hour. When it reached a sales capacity that could support its own facilities, the owner rented a unit in the same building, 561 Windsor Street. Fiore de Nonno also has personal relationships with restaurant owners and bakery owners, which has provided invaluable and authentic endorsements, which has led to a higher volume of orders and more consistent orders. In addition, these relationships have provided introductions to food bloggers, reporters and critics, which in turn has led to more local exposure and cache.

Another advantage of Somerville is its proximal location to customers and vendors. The high concentration of restaurants in Somerville, Boston and Cambridge make Somerville particularly attractive for food production. Some of these firms, such as Fiorre de Nonno, sell exclusively to local restaurants and retailers. Another firm that relies on its location as a competitive advantage is Golden Cannoli. Golden Cannoli, maker of cannolis

⁶¹ Ibid., Preface, XVI.

and cannoli shells, sells to most if not all, Italian restaurants and bakeries in Boston's Italian District, the North End. However, the firm's locational advantage is its proximity to Boston, not its Somerville address.

From their rave reviews and organic migration to Somerville, it seems that the City is a natural fit for artisans and other small-scale consumer goods manufacturers. However, the City isn't without room for improvement. Not surprisingly, many owners of these firms feel that Somerville's limited access to public transportation and bike accessibility hinder their ability to attract employees. This is a problem that is Somerville-wide but is particularly felt by its industrial areas. The few firms that are commingled in commercial areas find it is difficult for their vendors and distributors to park for deliveries and pick-ups. As a work-around, these firms have been able to obtain residential parking permits in the abutting neighborhoods so vendors can park relatively close by. However, the cost of these permits has significantly increased each year.

Another challenge that this sector faces is limited access to capital or little knowledge of existing programs to access capital. As small operations, many of these firms are sole proprietorships and voiced a fear of debt financing, which if pursued, might allow them to bring their operations to scale and invest in badly needed capital equipment.

Lastly, while consumer goods producers have strong relationships within their own networks and generally strong ties to Somerville, they do not have a loyalty to, or even a relationship with, City Hall. Several firms said it wouldn't occur to them to reach out to the City for relocation or business assistance. Others, who have reached out, felt that the City is apathetic to their needs and concerns. Tyler Davis of Independent Fabrication met with the Mayor and Economic Development representatives to discuss their real estate needs. Independent Fabrication was looking to expand in Somerville, but was having difficulty finding anything appropriate for their needs. He felt they were given lip service in the

meeting, but that there was little follow-up beyond a staff person emailing him two broker listings that they had already seen. His interaction with City Hall led him to believe that the City did not take them seriously as a viable business, despite the fact that they have had exponential growth in the premier custom-made bicycle market: “It’s like having Ferrari in your backyard and not even knowing it.”⁶²

The perception that City Hall is anti-business also permeates into the food sector. In particular, many businesses feel that the health inspector does not have enough time to adequately coach them through the approval process but instead rushes through the inspection and slaps them with citations. Many businesses are looking for a resource that can aid in their success, and were disappointed to be met with opposition and acrimony at every step.

The High-Tech Perspective

High-tech firms cite that the main benefit of Somerville is its location within the greater Boston area. These firms feel that the benefit of the proximity to Boston outweighed the higher cost of rent as compared to the suburbs. However, keep in mind that the high-tech firms that have located in Somerville are not land-intensive operations, such as older industrial operations like Ames Envelope. The benefits of Somerville’s location include proximity to universities, vendors, distributors and an educated workforce. Additionally, high-tech firms find that their employees identify with the creative class and generally prefer to work in a City as opposed to suburbs. In particular, they enjoy Somerville’s restaurants, retail and unique “garage industry” character.

As indicated by national and state trends, the high-tech manufacturing has strong growth potential, but for the most part, Somerville has not been successful in attracting this sector. However, several high-tech start-ups have made Somerville their home, citing its

⁶² Tyler Davis, June 2010.

cheap rents and unique, hip identity as the main draw. Three high-tech companies who initially located in Somerville - iRobot, 3Play Media, and Second Wind - have left Somerville because as their operations expanded, they were unable to find adequate space for their operations. Searches for industrial or flex space over 20,000 square feet returned one result on Loopnet.com, which leads one to believe there are very few spaces that could accommodate firms that need larger production space.

What's more, firms found the existing industrial spaces in Somerville to have irregular shapes, poor building quality and poor climate control, a departure from the artisan manufacturers preference for Somerville's quirky building stock. Second Wind, producer of wind measuring devices, recently moved its production facilities from Somerville to Newton, and Susan Giordano, General Manager for Second Wind, noted that there was nothing in Somerville that could compete with its "new, shiny" digs in Newton where "the bathrooms never back up."⁶³

When high-tech firms need space that can accommodate both production and office uses, Somerville is at a distinct disadvantage to its neighbor, Cambridge, which has strong brand equity as home to a robust high-tech cluster with access to capital. One firm that ran into this problem is 3Play Media, a manufacturer of digital transcription files. 3Play Media's founder, CJ Johnson said, "when someone tells me they're located in Somerville, I think of a couple guys tinkering around in a garage, but when you need office space where you can host funders, you have to go to Cambridge."⁶⁴ And while Somerville is known for its artists, it lacks the same high-tech cache. Juan Navarro of 3Di Models, makers of architectural models, noted that Somerville isn't thought of being on the "cutting edge" in the same way

⁶³ Susan Giordano, June 17, 2010.

⁶⁴ CJ Johnson, August 18, 2010.

that Cambridge is, and it could benefit from more opportunities for its existing high-tech professionals to connect with one another.⁶⁵

Interviews reveal that the manufacturing industry in Somerville is a dynamic situation that will continue to evolve over the next decade and beyond. Traditional industries face ever-increasing pressures of high utility costs, an aging workforce and higher rents than could be achieved in suburban areas. Despite these pressures, there are a few firms that remain in Somerville because the cost of relocating has deterred them from leaving. If these firms were to be disrupted, say by the Green Line extension, it is likely that they would seek space outside of Somerville. High-tech industries have overlooked Somerville because of its lack of appropriate real estate and weak networks. Somerville's consumer goods manufacturers face many of the same challenges of traditional industries, and also have slow growth and low employment. However, these industries significantly add to Somerville's brand and Somerville boasts several success stories that have found a way to exploit a niche market or integrate technology into their business productions. What's more, this type of manufacturing is most appropriate for Somerville's existing real estate and role within the region.

Chapter 5: Recommendations and Conclusions

If manufacturing is to survive in Somerville, the city must recognize its strengths relative to the region, appreciate the sectors that are thriving, and rethink the way it defines manufacturing. To that end, Somerville's policy should be sector-specific: it should strive to maintain and support the Consumer Goods sector, which includes artisans, food manufacturers and other small scale producers that are more technologically advanced. As established in Chapter One, cities work to retain a manufacturing sector because of its high relative wage, its range of employment opportunities (from entry-level, low-skill, to post-

⁶⁵ Juan Navarro, July 1, 2010.

secondary degrees) and its ability to produce exports, or to bring in new wealth to a city or region. This sector, while it may not provide a significant export industry for the region, as many jobs, or as high-paying jobs as suburban manufacturers, it does sell to the larger region to bring new revenue into Somerville and provides jobs for its lower skill residents with a higher wage than their alternatives in the retail and restaurant industry. This sector is also appropriate for Somerville's land availability and building stock, and it significantly contributes to Somerville's creative brand and therefore its ability to attract more creative class residents and businesses.

While industry analysts and recent trends point to small, high-tech manufacturers as the future of domestic manufacturing, Somerville does not have the building stock, networks or "brand" to attract the type of high-tech firms that have been successful in the greater Boston area. However, drawing from best practices from other successful light industrial urban centers such as San Francisco, Chicago and Philadelphia, Somerville should endeavor to attract more creative, niche firms that produce highly customized consumer products that utilize new technologies to reduce costs and shorten time to market.

Just as Somerville must redefine how it defines manufacturing, it must also rethink the type of economic development activities that will attract and support this new iteration of small-scale, creative manufacturing. Based on the findings from interviews with Somerville's successful artisan and consumer goods manufacturers, it is clear that these new firms value networks and urban amenities above all. Interviews with economic development practitioners from cities with successful small-scale creative sectors, such as San Francisco's Todd Rufo and Kate Sofis, reveal that the "if you zone it/assemble it/build it they will come," is no longer an effective way to do business. What's more, Somerville's failure to create an industrial park in the Boynton Yards area through land use measures, demonstrates the shortcomings of this one-dimensional strategy. Today, cities must provide wrap-around

business services to attract, retain and grow healthy industrial sectors. The relationship between building supply, real estate development and firm formation is complicated and non-linear; economic development practitioners must recognize this and adapt accordingly.

Many have called this most recent evolution of economic development the “third wave of economic development.” The first wave, which began in the 1930s in response to the Great Depression, consisted of policies designed to “lower the costs of land, buildings, taxes, and labor to attract businesses.”⁶⁶ This wave is also known to many as “smokestack chasing.” The second wave developed out of increasing global competition and doubt surrounding the effectiveness of traditional economic development activities. This wave’s efforts focused on helping entrepreneurial efforts discover and expand markets by accessing capital and inputs. This most recent wave, the third wave, recognizes the large proportion of knowledge-based and creative economy jobs and the increasing role of the Creative Class, and focuses on creating “new institutional and organizational arrangements with sufficient scope, responsiveness, and flexibility to provide the foundation for economic development.”⁶⁷ In relation to Somerville, these three waves, and the economic development activities contained within each one, should be viewed as a collective set of tools from which to draw from and combine, not three static approaches to choose between and implement as is. By combining aspects of all three approaches, Somerville will have not only the land and capital, but also the networks and amenities needed to grow and support a healthy consumer goods sector.

To that end, Somerville should nurture new networks and relationships among artisanal manufacturers and provide technical assistance to both attract more technologically savvy firms and help their current artisanal sector infuse their business practices with 21st

⁶⁶ Julie Cencula Olberding, “Diving into the “Third Waves” of Regional Governance and Economic Development Strategies: A Study of Regional Partnerships for Economic Development in U.S. Metropolitan Areas,” *Economic Development Quarterly* 2002 16: 251-253.

⁶⁷ *Ibid.*, 253-254.

century tools. It should supplement this effort with more traditional first and second wave economic development strategies to assemble, zone and retain space for industrial uses and to provide access to funding to grow their business and reach new markets, respectively. This sectoral approach will achieve three goals: 1) formalize and reinforce Somerville's existing "brand" as a "City of Makers;" 2) conversion of undesirable uses, such as junk yards and chop shops into more productive industrial uses in the existing industrial areas and therefore increased tax revenue for the City, and; 3) creation of living wage jobs for Somerville residents in Somerville.

According to Joan Fitzgerald, author of *Emerald Cities*, whether or not a city's sectoral approach is successful is the result of three factors: 1) economic and locational strengths; 2) choice of strategies, and 3) policy implementation. Fitzgerald identifies eight activities that practitioners engage in to attract new business growth or maintain and build on existing strengths and depending on specific challenges and goals, strategies should include some combination of the following eight approaches:

1. Identifying firms in the targeted sector that could expand or locate in the area;
2. Strengthening existing firms in the sector in the local economy (e.g. technical assistance in adopting up-to-date technologies, expanding into new product lines, coordinated purchasing);
3. Facilitating cooperation among university researchers and businesses in developing new technologies or products;
4. Developing financing mechanisms to fill capital needs not met by conventional financing sources;
5. Creating employment and training programs to assure an adequately skilled workforce;
6. Helping firms respond to environmental and other regulations;
7. Expanding markets through the city's purchasing power, and;
8. Addressing local competitiveness weaknesses (e.g. transportation inadequacy, outdated land use regulations, high energy costs).⁶⁸

In order to capitalize on its relative strengths and to make the best use of its limited resources, Somerville should make use of strategies two (strengthening existing firms, a third wave strategy), four (developing financing mechanisms, a second wave strategy) and eight

⁶⁸ Joan Fitzgerald, *Emerald Cities: Urban Sustainability and Economic Development* (New York: Oxford University Press, 2010), 13.

(addressing local competitiveness, a first wave strategy). These strategies have been selected because they are appropriate given the City's capacity and resources. For instance, the City is not in a financial or staffing position to help create expensive and time-intensive workforce development programs, nor is it reasonable to think that the City will embark on a firm-by-firm recruitment strategy or invest in the creation of new technologies. What's more, these three strategies will build upon Somerville's current strengths, in particular low rents and strong artisan networks, while addressing the challenges that firms identified in interviews, such as limited access to capital and accessibility issues, which will strengthen its competitive position. This blended strategy also combines the first, second and third wave economic development tools that will achieve Somerville's goals of strengthening its brand, converting land to higher uses and creating living wage jobs. Lastly, this combination of strategies will leverage the Massachusetts Bay Transportation Authority's (MBTA) infrastructure investment in the Green Line.

In implementation, these policies can be enacted using four planning and economic development tools: technical assistance, financing mechanisms, land use controls, and infrastructure investments. The centerpiece of this approach is the technical assistance effort, with land use regulations and financing mechanisms used in a secondary, and much more targeted way. This order of importance illustrates how economic development strategies can and should adapt to address the needs of contemporary urban manufacturing. Somerville's small firms are more likely to be intermingled with other uses (and if given the opportunity would even prefer to be in a mixed use neighborhood) than they were in the 1980s when Somerville first began planning for Boynton Yards. Therefore there is less need to "preserve" whole swatches of industrial areas. What's more, as a part of the Creative Class, these firms and individuals value networking, urban amenities and branding just as much as industrial land use protections and financing schemes. However, the ability to find

affordable space and the availability of capital is still critical to Somerville's ability to attract and retain new firms, particularly because the cost of space is *the* driving factor in firms' location decisions across sectors. While not the sole focus of recommendations, land use controls cannot be forgotten especially in anticipation of the Green Line extension, which is likely to drive up property values. Together, these policy efforts make up a refined economic development strategy that will extract more value from Somerville's industrial areas without attempting to force inappropriate or unrealistic uses.

Technical Assistance

Zoning is a powerful tool for economic development practitioners to insure that physical development is aligned with community goals, however it is not enough to zone an area and expect industry to follow. According to Todd Rufo of San Francisco's Office of Workforce and Economic Development, "if a city's goal is to grow an industrial sector, it needs to be able to provide wrap-around business assistance." In particular, he feels that it is essential to have a one-stop-shop ombudsperson. If that person works at City Hall, he or she needs to be someone who can seamlessly work across departments.⁶⁹

Given that the City of Somerville has limited staff and resources, it should partner with or create an umbrella organization to provide technical assistance and marketing for local Somerville manufacturing firms. The City of San Francisco and SF Made have demonstrated the effectiveness of this model. The City provides SF Made with a small but significant contribution to its operating expenses, which it then leverages to raise additional funds from other corporations and foundations. This grant is part of the City's annual Community Development Block Grant (CDBG) funds.

SF Made operates as the liaison to the City's manufacturers providing marketing, technical assistance and workforce development training. It also helps businesses navigate

⁶⁹ Todd Rufo, April 1, 2011.

the permitting process and creates a unified brand for products that are made locally. Currently there is no feedback loop for manufacturers (or any businesses for that matter) to communicate their challenges to Somerville City Hall. For instance, many food businesses expressed their perception that the City is anti-business, particularly when it came to fees, fines and regulations. Two particular issues are the rising cost of food permits for farmer's markets and the health inspector. These two issues are challenges that could be easily addressed if a communication line is in place from businesses to city agencies. An umbrella organization would provide that forum.

SF Made also helps manufacturers find attractive space in San Francisco. Interviews revealed three Somerville manufacturers that are currently searching for new space and have had difficulty assessing information regarding the availability of industrial space in Somerville. An umbrella organization could work with local brokers to better disseminate information regarding open space.

In addition to business attraction and assistance, organizations like SF Made formalize nascent industry networks. Location theory repeatedly stresses the importance of industry networks to help attract and grow industry clusters and interviews with Somerville manufacturers affirm this theory.

All of SFMade's activities add an immense amount of capacity to the City of San Francisco's efforts with a minimal investment from the City. Todd Rufo commented on the importance of SF Made, particularly Kate Sofis' ability to "run interference": "I sit in City Hall and manufacturing interests are only a small portion of my job objectives. Kate meets with hundreds of industrial employers, provides technical assistance and workforce development workshops and provides a forum to collect information about the industry's needs and challenges. She is really good at identifying the issues that cross sectors, and

communicating those issues back to City Hall.”⁷⁰ Other cities, like New York, have similar partnerships, such as the one between the New York Industrial Retention Network, the Industry and Technology Assistance Corporation and their non-profit technical assistance arm, Made in NYC.

For a city the size of Somerville, it is neither likely nor necessary to create a new organization that focuses solely on manufacturing interests. A more prudent effort would be to partner with an existing nonprofit, such as Somerville Local First, an organization that encourages Somerville residents to patronize local businesses. The City of Somerville could provide a small amount of CDBG funds in order to provide the capacity for a “Made in Somerville” effort to be incorporated into Somerville Local First’s existing structure. First and foremost, this initiative would provide a uniform brand and marketing outlet for all locally made products; a logo should be developed that manufacturers can place on their products to indicate this. Another important first step, would be to create a website that describes the initiative, highlights members and provides a forum to share information on best practices and fosters more dialogue between the City and manufacturers and amongst the manufacturers themselves. What’s more, the effort to create the initial membership list will provide a natural ombudsmanship opportunity in which the administrators of the program can candidly speak with firms and report concerns and issues back to City Hall. Given the size of Somerville’s manufacturing base, the initiative’s efforts would be on a much smaller scale than those of San Francisco or New York. Given this important difference, the Somerville model could be supported by a small grant from the City in the range of \$5,000 annually and membership fees would not be charged. In order to help staff the project at a low cost, the City should leverage its access to graduate level interns, who are funded by Federal Work Study, to recruit the membership base and create the logo,

⁷⁰ Ibid.

marketing materials and website. Once these initial efforts are complete, the website will serve as the main communication method, and limited staff time will be needed to conduct ongoing outreach and plan networking events. The creation of this initiative will allow Somerville to leverage a minimal investment for exponential returns.

Funding Mechanisms

Many businesses expressed that there is limited access to working capital in Somerville. While many consumer goods businesses may be good candidates for local sources of debt, they felt that they did not have access to those sources, or were apprehensive to take on traditional debt as a sole proprietorship. To address these issues, the City's should work with the newly created umbrella organization to distribute information on its small business loan program and other sources of funds such as the Small Business Administration and Community Development Finance Institutions, which provide low-interest small business loans and/or serve as guarantors. The City of Somerville, in partnership with ACCION USA, offers business owners access to capital through the Small Business Loans Program. Loans are available up to \$50,000 for established businesses and \$30,000 for start-ups. The City should revise its loan contracts to ensure that any business that receives a low-interest loan is obligated to remain in Somerville until their principal is paid off. Depending on funding, the umbrella organization may also be a candidate to create an additional revolving loan fund to assist with start-up costs and capital equipment investments. Access to low-cost capital could help these firms scale their efforts in a way that is not possible without debt financing.

Infrastructure Investments

One of Somerville's main disadvantages relative to the metro area is its inaccessibility. However, the City of Somerville is extremely fortunate that the MBTA is investing in a massive transportation initiative, the Green Line extension. This investment

allows Somerville to make targeted interventions to leverage the MBTA's investment. For instance, the City should continue with its efforts to make the city more bike-friendly; many of the firms interviewed indicated that their employees bike to work, and that bike-friendliness was a shared priority and value.

In addition to accessibility issues, businesses indicated that parking, particularly for businesses in mixed-use areas, is a challenge for employees. An easy solution to this problem (as suggested by a business-owner) would be to allow more permits for businesses to park in residential areas during business hours. The cost of these permits should be relatively low-cost for Somerville firms and should only be increased by a nominal amount each year. These targeted interventions allow Somerville to piggyback on the Green Line extension to make Somerville even more accessible for industrial employees, distributors and vendors.

Land Use

Given its concentration of existing industrial uses and the city's upcoming planning efforts in anticipation of the Green Line extension, this report will focus on land use policies for Boynton Yards. One can assume that with the arrival of the Green Line extension to Union Square, and given the language of the stalled 2008 Urban Renewal Plan, Boynton Yards' industrial uses are at risk of being converted to office, retail or residential and escalating rents could price-out some of the local manufacturing businesses. In order to retain a mix of industry that includes small-scale manufacturing in this area, the City should employ the use of an Industrial Employment District (IED) in the Boynton Yards area of Somerville that ensures that a percentage of the uses are light industrial, and also provides incentives in the form of tax credits or abatements for new firms that locate in Boynton Yards. This area is currently within two Transit Oriented Development (TOD) areas that provide a provision to retain 5% "Artist" uses. However, the policy contains no definition of "Artist" and provides no mechanism for enforcement of this code. By overlaying an IED

on Boynton Yards, the City could both protect existing businesses and provide incentives for new firms. IEDs, or some variation of them, have been used in San Francisco, New York, Philadelphia and have evolved from Chicago's successful Planned Manufacturing Districts (PMD). PMDs were originally implemented in the late 1980s and spurred millions in investment and created more than 4,000 jobs in one district.⁷¹ City data indicates that approximately 15 percent of the current uses in Boynton Yards are industrial. Therefore, a provision to retain 15 percent light industrial (as opposed to the current 5 percent) will make appropriate space for small-scale manufacturers while allowing for the collocation of retail and office that is lacking in the area currently.

According to the New York Industrial Retention Network's website, Industrial Employment Districts "discourage non-industrial uses such as hotels, superstores, waste transfer stations and offices that are unrelated to manufacturing by requiring that they first obtain a special permit and show that they would not destabilize the neighborhood."⁷² Once implemented, IEDs provide long-term real estate stability, promote industrial development and allow adjacent development of other uses, such as housing, to progress without destabilizing and risking jobs in remaining industrial areas. In addition to protecting existing industrial uses, IEDs can also include incentives for new businesses. For example, in New York, businesses that relocate into or within their Industrial Business Zones receive a \$1,000 per employee tax credit, up to a maximum of \$100,000, to encourage moving there.⁷³

A more aggressive approach the City could take to encourage light industrial development, would be to create a Boynton Yards redevelopment plan that would allow them to pursue a public-private development in which the City acquires and assembles land

⁷¹ "NYIRN Site - New York Industrial Retention Network Home," <http://www.nyirn.org/index.cfm?nodeid=3>.

⁷² Ibid.

⁷³ Daniel Massey, "City's industrial zones undermined, report says | Crain's New York Business," <http://www.craigslist.com/article/20091028/FREE/910289989>.

and issues an RFP for a private developer to create an innovative mixed-use development that marries small-scale production with retail. With the forthcoming Green Line extension near the Boynton Yards area, Somerville is in a unique position that many other Cities would jump at. According to Kate Sofis, Executive Director of SF Made, a nonprofit that serves as a liaison between San Francisco's manufacturers and the City of San Francisco, collocating production and retail has become a best practice in domestic small-scale manufacturing and the ability to combine this with a walkable, transit-oriented development provides an opportunity that many cities are currently pursuing.⁷⁴ This development would serve as an anchor to a larger mixed-use area, that would include office space, research and development and possibly high-density residential. There is some precedence for this model, such as the Ferry Building in San Francisco, Chelsea Market in New York and Eastern Market in DC, however these efforts are more of a flea market or craft fair model, where makers bring out their wares on specified dates. The proposed Somerville effort would be a model project, demonstrating the value of intentionally collocating transit oriented development, retail and production. In many ways, it would be a return to the medieval craft districts where the back of the store was used for production and the front for retail and the interaction and bond between maker and buyer provided a competitive advantage.

In addition to pursuing the public-private development, Somerville could subsidize rent for complimentary uses such as a Fabrication Laboratory, or Fab Lab, in partnership with MIT. A Fab Lab is a high-tech workshop that fosters innovation and invention by providing individuals with access to tools for digital fabrication. The Fab Lab will reduce barriers for individuals who want to perfect and produce new products for small to mid-sized manufacturing ventures. The inclusion of a Fab Lab in this new development will help incubate new businesses that could later become tenants in the district once firms are ready

⁷⁴ Kate Sofis, April 6, 2011.

to scale their innovations into the manufacturing stage. It could also be used as a meeting place for networking events, much as the guild hall was in medieval craft districts.

Conclusion

This research identifies opportunities for the City of Somerville to strengthen its manufacturing base by recognizing its role within the region, addressing its weaknesses, capitalizing on its assets and leveraging upcoming infrastructure investments, namely the Green Line extension. Somerville, unlike Boston and its suburban neighbors, has failed to transition from a low to high-tech manufacturing sector. Its old industrial uses have continued to decline and it has failed to attract and retain high-tech spin-offs while neighbors like Cambridge have created robust high-tech clusters. However, a tightly knit consumer goods sector has organically migrated to Somerville. People that work in this sector are drawn to Somerville's creative class zeitgeist, its low rents and unique building stock. This sector faces significant challenges such as difficult competition and slow growth, but despite these challenges, Somerville firms that are able to exploit a niche, charge a premium and/or infuse technology into their product or processes are succeeding. These firms also do significant local business, taking advantage of increasing consumer sentiment for high quality, locally made products.

The value of these firms is in both their ability to provide economic development returns for the City and in their contribution to Somerville's brand. Somerville's manufacturing jobs, although lower paying than Boston and suburban area's manufacturing jobs, pay a relatively high wages for low skill residents and represent a higher use of land in underutilized areas such as Boynton Yards. Kate Sofis, of SFMade expounded on the unique benefits of small manufacturers, specifically artisan manufacturers in her 2003 Master's Thesis, "Places of Making: Craft Space in our Urban Communities," for the London School of Economics:

Craft making, as a way of work, of community, of urban sociability – or, more broadly speaking, craft *habitus* – has contributed to our urban spaces and culture in Western Cities since medieval times. And economic evidence points to the fact that craft making is, in fact, not only economically viable, but it offers yet another means towards the amelioration of such intractable urban issues as lack of job skills and disenfranchisement in some urban communities -particularly in the case of immigrants, who may in fact already possess craft skills from their home countries -in a way that the large financial institutions, business corporations, and dead-end service sector jobs simply do not offer.⁷⁵

Sofis goes on to argue that despite the myriad of economic development benefits provided by small scale manufacturing firms, many economic development practitioners “in their zeal to reap the fiscal advantages of a seemingly more lucrative tax base ignore the fact that small and medium-sized businesses, manufacturing included, still account for the majority of local employment in most Western cities. And craft manufacturers themselves, when compared to other types of small-medium sized businesses, have a longevity beyond many other industries.”⁷⁶

To bolster this sector, Somerville should embark on sector-specific strategy to strengthen its existing firms, develop (or in this case promote) financing mechanisms and address local competitiveness. Fortunately for Somerville, the MBTA is making a huge infrastructure investment by extending the Green Line to Union Square, which will strengthen its competitiveness by providing much easier access to Boynton Yards, Somerville’s last industrial stronghold. This provides an opportunity to capitalize on this infrastructure investment by enacting zoning to protect and incentivize industrial uses in Boynton Yards. But zoning and land use alone are not enough. As manufacturing has changed, so must economic development strategies and practices. To keep pace with this “third wave of economic development,” Somerville should provide seed money to launch an umbrella organization that will provide technical assistance, marketing, workforce

⁷⁵ Miller-Sofis, “Places of Making: Craft Space in our Urban Communities,” 52.

⁷⁶ Ibid.

development, and financing information to local manufacturers. The organization will also promote stronger networks among these firms and strengthen awareness of their contribution to Somerville's identity and economy. With these policies in place, Somerville will create jobs in Somerville for Somerville residents, extract more value from the existing land, and strengthen its "brand" as a "City of Makers." There will be a future for manufacturers in Somerville, and that future will be bright.

What can other cities learn about manufacturing as an economic development activity from Somerville? The preface to this discussion is that the type of cities to which Somerville's experience is relevant, are small to medium-sized cities (or districts within cities) that are situated in a larger urban area, with a history of industrial uses, an old building stock and limited undeveloped land. While this list may seem quite specific, I would argue that this combination of characteristics is not uncommon and can be found in areas in and around San Francisco, Philadelphia and Chicago, just to name a few. Somerville is undoubtedly less relevant for cities with a lot of land, such as Detroit or suburban Kansas City. It also may not be relevant to older industrial cities that are independent from large metro areas and thus unable to leverage proximity to urban dynamics and dense populations, such as Springfield, Massachusetts.

For cities that find themselves in similar situations to Somerville, there are significant lessons about how to determine what is the most appropriate strategy, if any, and if this new iteration of small-scale, creative manufacturing fits into that strategy. When considering a manufacturing plan, these cities must consider: 1) its role within the region; 2) land availability; 3) existing building stock, and; 4) existing and nascent industry networks. For Somerville, a small city situated in a large, well-educated metro region with a significant technology sector and several of the world's leading research institutions, it might seem that an attraction strategy focusing on high-tech spin-offs and start-ups would be the most

appropriate strategy. However, this would not take into account Somerville's land scarcity and old, unique building stock. Other more suburban cities in the metro area, such as Lexington and Newton, can promote their proximity to Boston and Cambridge but could also provide low cost land and new facilities, making them more appropriate for high-tech production that might require larger floor plates and more precise temperature control. While the US is generally moving from large, low-tech production and products to small-scale and high-tech, the location decisions of these firms are heavily dependant on industry networks and the brand associated with an address. What's more, these networks are extremely concentrated and, unfortunately, there is little to no halo effect; Somerville, despite sharing a border with Cambridge, will not be able to attract high-tech companies by touting its proximity to Kendall Square. Instead of attempting to force an inappropriate use (such as citing a biotech firm in Somerville), cities should attempt to understand their strengths not only in the context of industry trends, but also relative to the region. A high-tech strategy wouldn't take into account Somerville's role as a home to artists and design professionals and as an incubator to other creative small businesses; it's Somerville's old and inexpensive building stock that first lured these firms to Somerville. The fact that there is a home for these types of firms in the urban core is good for the firms but also to the larger region. Sound economic development strategies should not only attempt to foster profitable uses (tax revenues), but also uses that leverage a city's relative strengths and are aligned with their larger community and economic development goals including a range of jobs, quality of life, and perhaps most importantly, creating a strong identity and pride of place.

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Appendix B: Implementation Chart

Strategy	Tool	Recommendation
Address Local Competitiveness	Infrastructure Investments	Continue to pursue funding for improved transportation systems, particularly bike accessibility , reduce cost of residential parking permit for local businesses.
	Land Use	Creation of IED with 15% Artisan retention in Boynton Yards; Provide tax credits for industrial businesses; Transit-oriented development that combines light industrial production, office and retail.
Strengthen Existing Firms	Technical Assistance	Partner with Somerville Local First to create an umbrella organization to provide technical assistance and marketing for local Somerville manufacturing firms.
Developing Financing Mechanisms	Financing	Distribute information about small business loans , make loans and leases coterminous