

Report:  
METRO HARTFORD TARGET INDUSTRY REPORT



Presented to:  
METROHARTFORD ALLIANCE

# REPORT: Metro Hartford Target Industry Report

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*This assessment is the second of three reports the MetroHartford Alliance will receive.  
For more information, go to <http://www.angeloueconomics.com/growmetrohartford/>*

Delivered to:



Prepared by:



AngelouEconomics has conducted an analysis of Metro Hartford’s economic base to determine which industry sectors currently drive growth in the area. Additionally, we have examined and researched regional, national, and global market and business trends for the purposes of making strategic recommendations for future target industries that the firm believes will work to produce economic prosperity and sustainable growth. The objective of this analysis is to determine those industries that Metro Hartford should expand and recruit based on its competitive advantages.

### Industry Location Analysis Background

Traditionally, the growth of economies has been described in terms of a region’s “basic,” or “primary” industries. These industries typically export their goods or services outside the region, thereby supporting local industries such as retail, housing construction, and personal services through payroll and local purchases. Primary industries reflect an injection of outside money to the community and have a high economic impact: a typical primary business may create two additional jobs in the local economy for every one job at its facility. For this reason, communities across the country compete to recruit or retain these high-impact, primary businesses.

Manufacturing is a good example of a primary industry, as most customers are found throughout the U.S., and abroad. With the manufacturing industry in decline and business today increasingly global, many more industries are “primary” in their make-up: distribution centers may serve a multi-state region, back office operations can serve a company’s global network of employees, and custom software companies can build Internet applications that can serve businesses anywhere in the world. Federal installations such as Army bases or federal research labs are clear examples of how government can be classified as a primary industry. High wage jobs are usually found at national or global companies that are enjoying growth.

While businesses are more global in nature today, rapid gains in technology, telecommunications, and markets continue to alter the location requirements of many companies. Often the speed of business drives corporate location decisions. The competition for top talent is now viewed to be the most important component of a successful company. Today’s business environment requires a community continue to upgrade the technological capabilities of its business community while expanding the skills of its available workforce. Innovation and change is now the baseline for success.

### Current Target Industry Efforts

In 1998, Connecticut became the first state in the nation to formally implement an economic development strategy based on industry clusters. Currently, the state has nine targeted clusters: Aerospace, Agriculture, BioScience, Insurance/Finance, Maritime, Metal Manufacturing, Plastics, Software IT, and Tourism. These clusters became the focus on statewide economic development efforts – loan programs, organized “cluster groups”, and significant investment.

A brief description of efforts within each cluster follows.

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### **Aerospace**

Connecticut's aerospace cluster is a network of independent Connecticut-based aerospace companies collectively known as the Aerospace Components Manufacturers (ACM). ACM is an organization formed by a core group of leading aerospace components manufacturers concentrated in the state of Connecticut. ACM has focused heavily on adopting and implementing lean enterprise practices and conducting workforce training and development

### **Agriculture**

Connecticut's Agricultural Business (CAB) is focused on managing byproducts effectively, promoting Connecticut-grown products, developing the workforce and dealing with forces that threaten the industry, including zoning, environmental regulations and encroaching urbanization. One of the group's goals is to generate a new business model for agricultural organizations within the state.

### **BioScience**

The state developed a partnership with the non-profit organization Connecticut United for Research Excellence (CURE) to promote the bioscience cluster. As part of the efforts to create a competitive business environment, the BioScience Cluster has help with the creation of the statewide Office of BioScience, a \$5 million CT BioSeed Fund managed by Connecticut Innovations, Inc (CII), and the appropriation of \$60 million for a BioScience Facilities Fund (managed by Connecticut Innovations).

### **Insurance/Finance**

The Insurance and Financial Service cluster is championed by the MetroHartford Alliance (MHA) with the primary purpose of creating a formal structure for the industry to cooperate and collaborate on issues and concerns of mutual interest that impact the business climate. The cluster is led by corporate leaders and supported by civic, educational, and government institutions.

### **Maritime**

The Maritime cluster is led by the Connecticut Maritime Coalition (CMC), a nonprofit trade association facilitating the competitiveness of Connecticut's maritime industries. CMC focuses efforts on workforce development, transportation strategy, dredged material management and commercial fishing advocacy. Accomplishments include securing \$20 million in federal funds for development of innovative technologies for sediment disposal dredged from Bridgeport Harbor, the attraction of the international cruise line industry into the state, and the creation of a Marine Technology Technician degree program with Gateway Community College.

### **Metal Manufacturing**

Connecticut's metal manufacturing cluster, The Metal Manufacturing Education and Training Alliance (METAL), has focused on keeping Connecticut metal manufacturers competitive through workforce development and lean manufacturing training. The cluster group has developed a two-year Associates Degree Program in Technical Studies in Metal Manufacturing at Housanonic Community College.

### **Plastics**

The Plastics cluster was formed in 2001 and is focused on workforce development and enhancing the state's competitive position within the industry.

### **Software/IT**

The Software/Information Technology cluster (SIT) is affiliated with the Connecticut Technology Council (CTC). The purpose of the cluster is to increase the productivity and competitiveness of all Connecticut

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businesses by creating the conditions necessary for the software and information technology industries to flourish. The organization focuses heavily on workforce development and sponsors internships, mentoring programs, and student tours between interested students and software companies.

### **Tourism**

The Connecticut Commission on Culture and Tourism manages the Tourism cluster. The Commission has found that for every \$1 the Tourism Division invests in marketing, there is a \$51 return on tourism spending.

### **Current Target Industry Results**

The state recently released the first performance report for the cluster effort. ICF Consulting was hired to examine the performance of all clusters except tourism between 1993 and 2003.

Results showed that only half of the clusters have shown any employment growth over the past 10 years. Those clusters are Agriculture, BioScience, Software/IT, and Maritime. In fact, the fastest growing industry, Maritime, averaged job gains of less than 1.5% annually. Maritime is also the smallest of the clusters, with total statewide employment of less than 10,000.

Although the cluster efforts are laudable, results have not been extraordinary. As a distinct region within the state of Connecticut, Metro Hartford must identify its own, specific target industry clusters and work together to realize economic growth within the region. An identification of Metro Hartford's current clusters follows in the next section.

AngelouEconomics employs a combination of quantitative and qualitative analysis in selecting the best target industries for a community. The process is guided by the following four questions:

**What industries currently exist locally, and are they growing?**

Immediate and obvious target candidates are those experiencing growth within the community or surrounding communities, particularly those growing faster than the national average. Industries that have a large presence, but lack growth suggest the region is losing its competitiveness in this industry. While the industry may be a candidate to target for a retention effort, a long-term decline calls for a close look at transitional opportunities into new industries that create jobs (e.g. textile workers transitioning into food processing).

**Are there local assets that give specific industries a competitive edge? What local weaknesses/barriers will limit industry growth?**

Communities are as unique as people. Each one has strengths that companies can leverage to create competitive advantages. These strengths can include such things as workforce skills, tax structure, infrastructure, or market proximity. The challenge is to identify the key assets in the region that will support growth in a wide range of industries, while continuously working to improve the community "product" (e.g. workforce skills or infrastructure).

**Does the community meet the requirements of the industry?**

Many companies will have specific infrastructure and workforce requirements; knowing if the region can meet those requirements is crucial. For example, if the region is lacking water and wastewater capacity or has stringent environmental regulations, the community could be eliminated for food processing and semiconductor manufacturing. Sometimes lack of available land requires a more precise list of targets. Understanding the needs of target companies is essential to recruiting them. For each possible target industry for Metro Hartford, we evaluate whether the needs of the industry are met locally.

**Does the industry match community goals?**

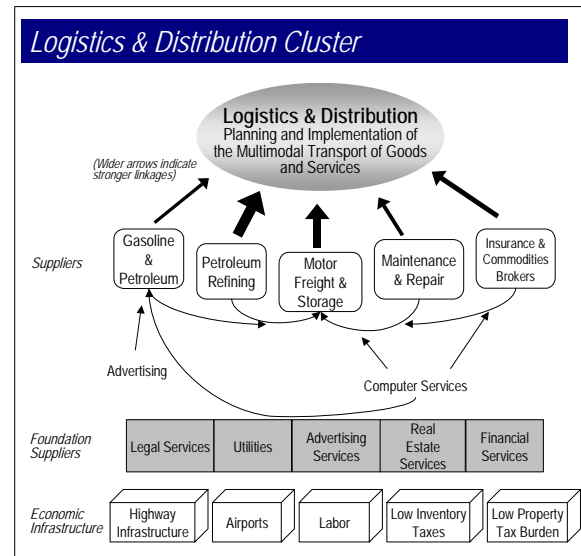
The most important criterion is often whether or not the industry matches the stated economic goals of the community. Some communities may want to avoid manufacturing businesses or businesses that pay below average wages. Communities wanting to maintain a small-town appeal, for example, may target homegrown "soft" industries. Others wanting to transition into a more urban, metropolitan setting may focus more on corporate headquarters. Industries that can survive locally will struggle to succeed without the backing of the populace and its elected officials. Likewise, an aggressive marketing campaign and a solid commitment by government to support a target can often overcome specific deficiencies or cost disadvantages.

Once criteria requirements are met for a target, the region was examined to see what might be their contribution to the industry. Contributions depend on factors such as workforce skills, infrastructure, and environmental assets. It should also be understood that as the target industries mature, industry roles might shift – which is to some degree what has happened with some of Metro Hartford's targets. Economic development is a fluid process.

## Cluster Analysis

Clusters are highly integrated groups of businesses with strong vertical and horizontal linkages. They categorize businesses by their final product and how these products are related to each other and integrated along the vertical supply chain.

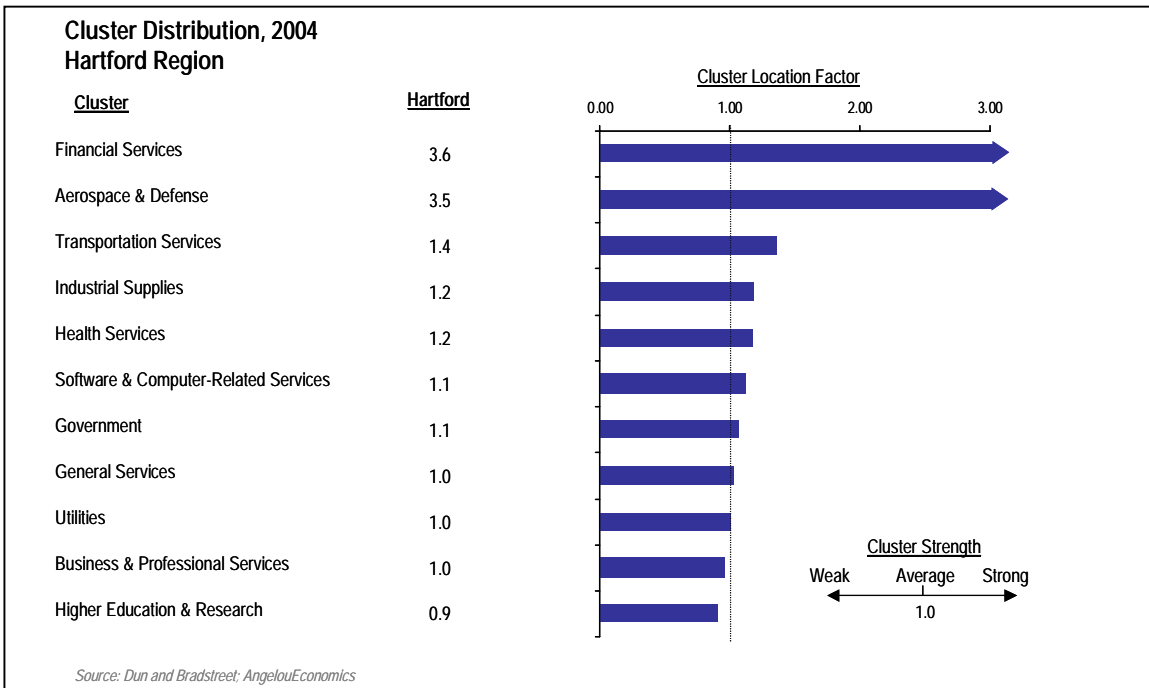
“Vertical” linkages include the suppliers and customers in a region that combine to create a competitive business model. The tight relationships between auto manufacturers and their suppliers are a good example of this vertical relationship. “Horizontal” linkages include the relationships that competing companies have and the public sector institutions that support them. Workforce is the primary asset that passes through these horizontal linkages, as competing firms often hire away each other’s workers (and learn from them) and also hire from the same training programs and universities. The diagram to the right shows how these relationships exist within a cluster.



Historically, clusters agglomerated in specific regions of the U.S. due to natural advantages (e.g. natural resources and climate), cost factors (e.g. distance to market, labor costs), and existing transportation infrastructure. Today, companies are increasingly drawn to regions that can supply the unique workforce they need. Universities and public sector institutions such as education and training facilities are now major drivers of regional economies. Clusters often mature when businesses expand their relationships with existing supplier firms in a region. As the clusters grow, additional supplier firms are attracted to the region, eventually creating a well-diversified “critical mass” of production, labor, and information.

To assess the strength of a cluster in the regional economy, the location factors are calculated by comparing the cluster’s share of total local employment to the cluster’s national share. This location quotient will generally yield a value between 0 and 2, where 1.00 demonstrates an equal share percentage between the local and national economies. Cluster location factors greater than 2.00 indicate a strong cluster agglomeration, while those less than 0.50 indicate extremely weak clusters.

The data, as reflected in the chart on the next page, reveals that Aerospace & Defense and Financial Services are the leading clusters within the Metro Hartford area. The cluster data reflects only the 35 towns within the Metro Hartford study region.



Currently, Metro Hartford enjoys cluster strength in:

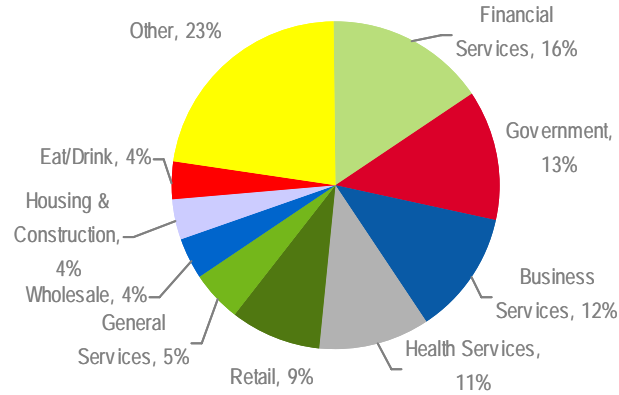
- Financial Services
- Aerospace and Defense
- Transportation Services
- Industrial Supplies
- Health Services

This does not mean that these clusters have the most employment within the region, but the highest concentration compared to the national average. The largest employment bases within the Metro Hartford region occur within Financial Services and Government.



## METRO HARTFORD EMPLOYMENT

% TOTAL EMPLOYMENT BY CLUSTER, 2004



Source: Dun & Bradstreet, AngelouEconomics

This chart does not include Manufacturing as a separate cluster because it is a function inherent in many of the "Other" industries, including Industrial Machinery, Biotechnology, and Chemicals and Plastics.

Local cluster strength does not automatically mean that it should be targeted for growth. National growth trends must be examined, as well as the region's relative competitiveness in each cluster. We assess these factors on the following pages.

Which industries are growing nationally?

In general, communities should target industries that are growing, although targets can include low growth or negative growth targets as well. The following chart shows the anticipated growth trends for specific industries and clusters:



Source: BLS, Angelou Economics

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Technology sectors such as those relating to the use of computers and networks promise a high level of growth over the next 10 years. Productivity improvements continue to be felt in traditional companies that adopt new computer technologies. The highest rates of growth will be found in design and service sectors such as **Computer Systems Design** (4.5% per year), **Internet Services and Data Processing** (3.9%), and **Packaged Software Publishers, not custom** (5.3%). **Electronics, Semiconductor, and Computer Manufacturers** will shed jobs as more and more production is moved to low cost facilities overseas.

**Health Care** will be a high growth industry, as the aging U.S. population becomes the dominant demographic over the next 20 years. By 2010, nearly 15% of the population will be seniors 65+, a period in one's life in which nearly half of health care expenditures occur. The senior population will be growing four times faster than the overall U.S. population by 2015. In 1950, there were 16 workers per retiree; today, the ratio is less than four-to-one, and by 2030, it will be two-to-one. With this massive demographic shift occurring, an estimated 4.4 million jobs will be created in the health care industry in the next 10 years, with residential and elderly care receiving the highest rates of growth. **Medical Instruments and Scientific Research and Development** will experience modest growth. **Biotechnology and Pharmaceuticals** are expected to see strong employment in the near and long term.

The steady growth of the overall U.S. population will drive the growth of industries that supply, feed, house and entertain us. Distribution of consumer goods will experience high growth: **Warehousing and Storage** (2.5% per year), **Truck Transportation** (1.9%), **Couriers and Messengers**, including overnight freight (3.5%), and **Wholesalers** (1.8%). **Entertainment and tourism/accommodation** industries will see high growth, and end-sales industries such as **Retail Trade** and **Restaurants** will see moderate growth. The **Construction** industry tracks well with overall economic growth, and is expected to experience modest growth.

**Local and State Government** will see job growth of 1.3%, slightly higher than total population growth (1%), as urbanization continues and federal jobs remain flat. Increasing wealth in the U.S. will require a larger **Financial Services** sector, which will also grow slightly faster than the population.

Manufacturing industries overall can expect continued job losses in the future due to continued technological improvements in the manufacturing process, large scale operations moving overseas, and for some, overall declines in final demand. Smaller, niche manufacturing sectors will see modest growth: **Machinery, Wood Products, Fabricated Metal, Machine Shops, Printing, and Food Processing**. Other sectors that will see falling job levels are **Agriculture, Oil and Gas Extraction and Refining, Chemicals, Mining, Apparel Manufacturing, Aerospace, and Rail Transportation**.

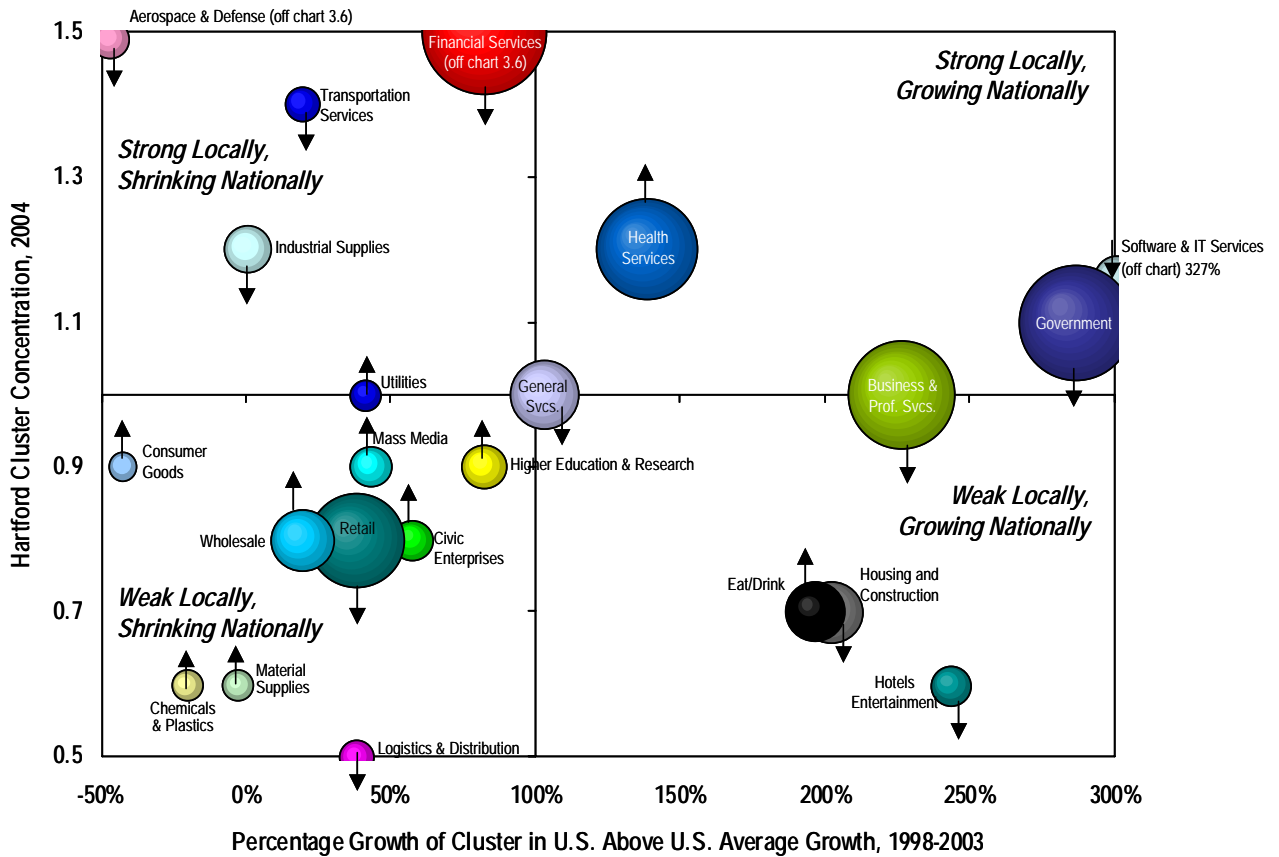
Which clusters are getting stronger in Metro Hartford?

Target selection must identify existing, strong clusters in the region, but also consider how clusters are gaining strength locally.

Clusters can gain strength in two ways:

1. Experiencing above-average growth nationally. This will result in a larger cluster employment concentration in Metro Hartford.
2. Experiencing an increasing cluster concentration ratio. A growing cluster concentration in a region indicates that a cluster is capturing a larger share of new jobs in the U.S., suggesting an improvement in the region's attractiveness and competitiveness for the cluster.

We show these two forces in the following diagram:



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### The Role of Dislocating Industries

At a national level, shrinking industries may still be an appropriate target for some communities if:

- **The industry is undergoing restructuring in order to be more competitive.** This often means that a company may relocate to another city, or may spinout divisions to more competitive locations. For example, the food processing industry is expected to create few net new jobs and have moderate growth rates nationally, but is migrating facilities from the Northeast to the Midwest and South.
- **The industry suffers a high rate of startup and failure.** While the U.S. South enjoyed many relocations from northern cities, most of the job growth occurred at companies that were founded in the South. As industries shrink in one region of the U.S., more competitive firms pop up and take market share. The success of financial services firms in the South and Midwest demonstrates the role that a competitive environment can play in an industry that suffers high churn.
- **Job loss is due primarily to technological investments, not declining revenue.** As some industries get more capital-intensive they require fewer workers (such as the semiconductor industry), but their strategic value to a regional economy still grows (a higher economic job multiplier or higher local tax payments).

Most communities make the right choices to preserve their existing industry base, and when these industries are shrinking, communities make every effort to forestall job losses (e.g. communities in traditional manufacturing or facing base closures). We label these industries “Dislocating,” as they are undergoing a basic restructuring in geography, technology, or markets.

The following sectors should be considered “Dislocating” clusters (slow U.S. growth, but increasing local strength) in Metro Hartford that can be targets, but deserve caution:

- **Material Supplies**
- **Chemicals & Plastics**
- **Higher Education & Research**
- **Mass Media**
- **Wholesale**

In the next section, we build on existing cluster data with a review of the region’s primary assets and limitations in each industry cluster.

Many of Hartford's assets and limitations were outlined in detail in the first report, *The Metro Hartford Regional Assessment*. Based on these assets and limitations, we examine Metro Hartford's suitability for a typical business in each cluster.

Key assets that differentiate Metro Hartford from its competitors and influence target selection include:

1. **Strategic location between New York City and Boston**  
Hartford is located within 2 hours of both Boston and New York City and provides easy access to each market at a significantly lower operating cost than either city.
2. **Easy access to major interstates**  
Hartford lies at the intersection of I-84 and I-91. Both interstates link the region to I-90, which extends east to Boston. I-91 stretches north into Canada and south to New Haven. I-95 extends east and west from New Haven, providing access to New York City.
3. **Bradley International Airport**  
Bradley International Airport is one of the fastest growing airports in the nation and the second largest in New England. Bradley also serves as a distribution hub for UPS and is a regional distribution center for Federal Express and the U.S. Postal Service. Bradley's cargo security ranks in the top 5 nationally and serves as an active Foreign Trade Zone at all times.
4. **High quality of life**  
The Metro Hartford region has a highly desirable quality of life, and has been ranked in the 93rd percentile for quality of life compared to similar MSAs. The area has a great deal to offer in arts, culture, and recreational activities. There are several highly regarded theaters and museums, Bushnell Park, the Connecticut River, and many other venues that can attract companies and workers.
5. **Well-educated workforce**  
In general, educational attainment in Connecticut, and specifically Metro Hartford, exceeds the national average. Within the region, 37% of residents have a college degree (including associates' degrees) versus just 31% for the U.S.
6. **Abundance of nearby colleges and universities**  
Hartford is located within the "Knowledge Corridor", which stretches along I-91 to Springfield, MA. It is home to over 30 colleges and universities and 120,000 students, including the state universities of Connecticut and Massachusetts.
7. **Strong corporate presence**  
The Hartford region is home to major corporate employers, particularly in the financial service and manufacturing industries. The Hartford, AETNA, St. Paul Travelers, LEGO, and United Technologies Corporation (Pratt and Whitney, International Fuel Cells, Hamilton Sundstrand, Carrier, and Otis) all call Metro Hartford home.

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**While Metro Hartford has much on which to build its future, several weaknesses and limitations affect the selection of targets:**

- 1. High cost of doing business**

In Forbes' ranking of the cost to do business in the 150 largest metropolitan areas (1=best, 150=worst), the Hartford MSA was rated the 119<sup>th</sup> most expensive place to do business. This index is based on cost of labor, utilities, taxes, and office space. According to a survey of site selectors on "Business Perceptions of New England", only 18% of site selectors said New England was friendly to business, and 58% cited cost as the primary reason not to expand in New England.
- 2. Poor image of city of Hartford**

In a recent survey of Hartford business leaders, 68% of them felt that the three biggest obstacles to economic growth were 1) negative state and local public policy, 2) **negative perception of the regional core**, and 3) disengaged leaders. The city of Hartford struggles with high crime and poverty rates, along with lagging educational attainment and a declining population base. Perception of a region as a whole will reflect the perception of its major city.
- 3. Lack of coordinated support for entrepreneurial ventures**

Though there are several business incubators in the region, there are few other support mechanisms in place for entrepreneurs wanting to start new businesses or support mechanisms for small businesses in operation. In NSF's ranking of number of business incubators, Connecticut dropped from 18th in 2000 to 34th in 2002. In 2003, Connecticut ranked 47th in a ranking of new companies as a percentage of total employer firms. Only 8.9% of all firms were new companies, compared to the U.S. average of 10.1%.
- 4. Lack of state incentives**

In a recent survey of small businesses in Connecticut, business owners listed a lack of state incentives and support as a primary deterrent to remaining and expanding in Connecticut. The website for the state's Department of Economic and Community Development lists few business development programs and incentives. Programs listed include manufacturing loans and tax credits, women and minority business loans, CDBG funding, remedial action programs for brownfields and other industrial sites, and other general business assistance. Although the state has many technology incentive programs through Connecticut Innovations, CCAT, and other institutions, they are not easily identified in one central location.
- 5. Lack of young professional workforce**

The region has had difficulty retaining young professionals (those people between 25 and 44 with a bachelors' degree or higher) who have the skills to attract high tech businesses and fill the jobs those businesses offer. Between 1990 and 2004, Hartford MSA's population within the 25 to 44 age group declined by 14%, compared to 4% growth nationally. Surveys have shown that more than 70% of students at the 32 area colleges and universities in the region leave after graduation.
- 6. Inadequate rail access**

The Hartford region does not have direct rail access to either Boston or New York City. The majority of the rail lines in the Northeast follow the I-95 corridor. Studies and interviewees both pointed to the need for a north/south commuter rail to link Hartford with other major cities and light rail in and around the city of Hartford. Commercial rail service is also limited east of the Hudson River.

Based on these assets and limitations, we examine Metro Hartford's suitability for a typical business in each cluster. We rate the region's strength in four areas:

- Business Climate / Cost Structure
- Workforce
- Infrastructure
- Research & Development

If Metro Hartford meets the requirements of an industry, we place an "x". Those that meet the industry requirements and offer opportunities for growth (national growth or gaining cluster strength) were selected as targets. Several industries, including higher education and business services, meet all criteria, but are not generally grown through economic development strategies. Targets are highlighted in gray.

### TARGET INDUSTRY SELECTION CRITERIA

Industry	Location Quotient	Primary Industry?	Cost Structure	Labor Force	Infrastructure	R&D	Final Target?
Aerospace & Defense	3.493	Yes	X	X	X	X	Yes
Agriculture	0.550	Yes			X		
Apparel & Textiles	0.185	Yes					
Biotechnology	0.412	Yes	X			X	Yes
Business & Professional Services	0.961	Yes	X	X	X	X	
Chemicals & Plastics	0.600	Yes		X			
Civic Enterprises	0.791	No	X	X	X		
Communication Equipment	0.317	Yes			X		
Communication Services	0.343	Yes			X		
Computer Equipment	0.281	Yes			X		
Consumer Goods	0.856	Yes	X	X	X		
Eat/Drink	0.744	No	X	X	X		
Electronics	0.811	Yes			X		
Financial Services	3.556	Yes	X	X	X	X	Yes
Food Processing	0.353	Yes					
General Services	1.032	No		X	X		
Government	1.072	No	X	X	X		
Health Services	1.176	Yes	X		X	X	Yes
Higher Education & Research	0.905	Yes	X	X	X	X	
Hotels & Entertainment	0.565	Yes	X	X	X		
Housing & Construction	0.718	No	X	X	X		
Industrial Machinery	0.678	Yes		X	X		
Industrial Supplies	1.180	Yes		X	X		
Logistics & Distribution	0.505	Yes	X	X	X		Yes
Mass Media	0.882	Yes	X				
Material Supplies	0.610	Yes		X	X		
Natural Resources/Clean Energy	0.102	Yes			X	X	Yes
Retail	0.830	No	X	X	X		
Semiconductors	0.863	Yes					
Software & Computer-Related Services	1.128	Yes			X	X	
Transportation Equipment	0.466	Yes		X	X	X	
Transportation Services	1.362	No		X			
Utilities	1.005	No	X	X	X		
Wholesale	0.840	Yes	X	X	X		

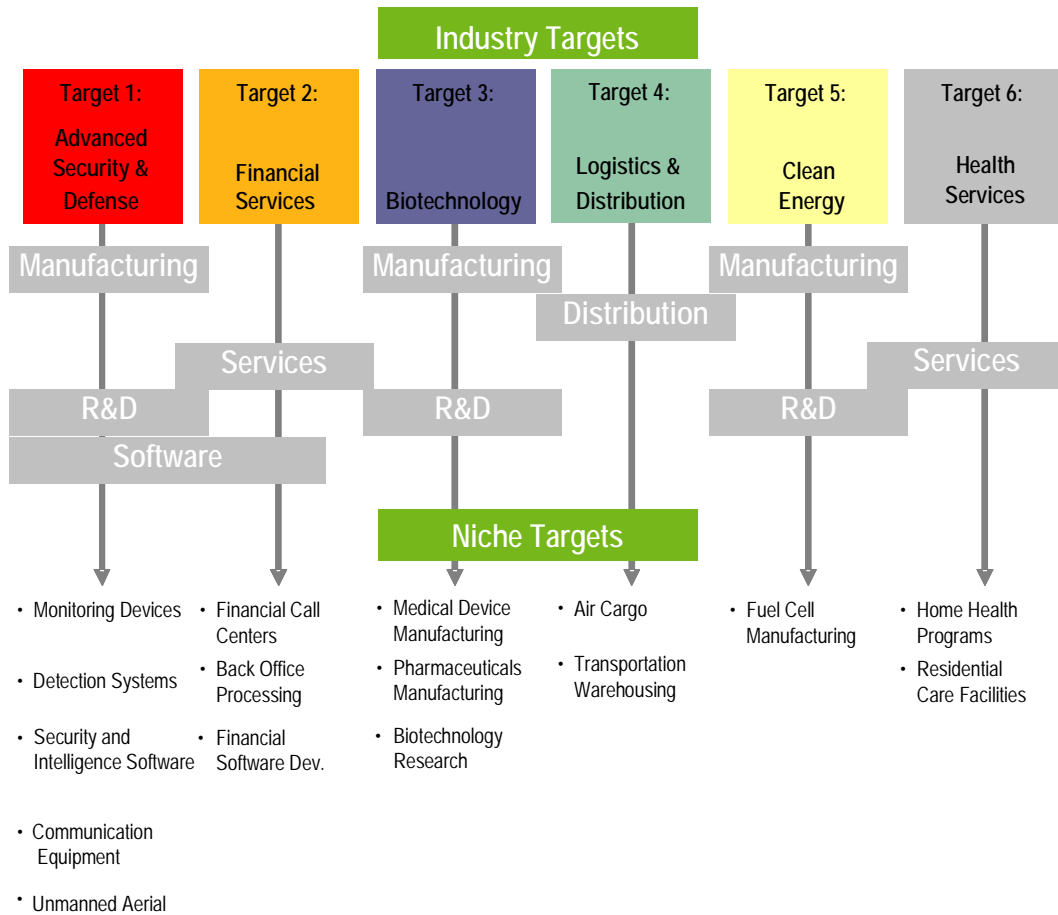


# TARGET INDUSTRY RECOMMENDATIONS

Based on the preceding analysis, AngelouEconomics recommends the following target industry list for Metro Hartford:

1. Advanced Security & Defense Manufacturing
2. Financial Services
3. Biotechnology
4. Logistics & Distribution
5. Clean Energy
6. Health Services

Targets were renamed based on the specific niche sectors within each cluster. In the case of the Aerospace & Defense cluster, a more appropriate target name is **Advanced Security & Defense Manufacturing**, which reflects the region's reliance on defense technologies rather than aerospace manufacturing.



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AngelouEconomics does not recommend that niche sectors be identified specifically as “targets.” Clearly, this would yield too many targets, and the synergies between them would be lost. Grouping niche sectors within main heading “targets” can yield many positive results overall. Fewer, broader target headings allow:

- The community to band together around groups that they understand intuitively (e.g. “defense” vs. “sensor technologies”)
- Local leaders to maintain a list that can be supported by all economic development organizations, while specific responsibilities will be spread out (i.e. universities focus on sensor technology development, while MHA promotes the defense industry)
- More visionary marketing campaigns to be created
- Leaders to prioritize the target list better
- Each main target to receive equal treatment, without being watered down by emerging, high risk targets

Each target is profiled in detail in the following pages.

We include the following information for each:

- A description of the industry sector
- An overview of industry trends
- A description of the location criteria for the industry for:
  - Market conditions
  - Structural Assets
  - Workforce
  - Cost of doing business
  - Research and development
- A review of Metro Hartford conditions to support the industry's growth
- Niche sectors that Metro Hartford has the greatest ability to support
- Specific locations within Metro Hartford that would be ideal for the target industry

## Target Profile 1: ADVANCED SECURITY & DEFENSE MANUFACTURING

### Industry Overview

The defense industry includes a wide-ranging group of individual industries targeting the same market, the Department of Defense (DoD) and its foreign equivalents. The DoD buys everything from desks to aircraft carriers, but due to its purchasing power also drive industrial development.

The U.S. security market is broad and includes market segments such as surveillance and monitoring, access control, biometrics, computer security, fire/burglar alarms, and home automation, just to name a few.

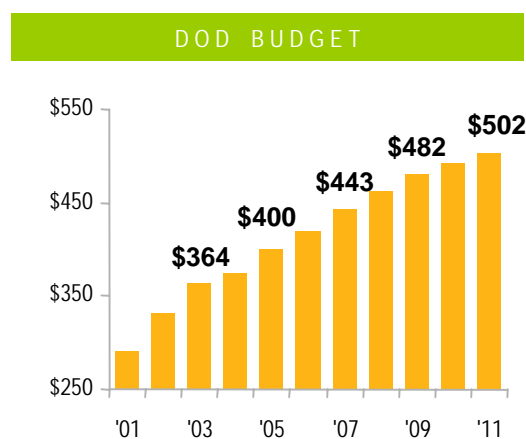
### Industry Trends

The events of September 11th continue to produce the most significant changes in military and foreign policies since the end of the Cold War. President Bush's new strategic doctrine for the U.S., first revealed in June 2002 and formalized in a National Security Strategy (NSS) document published three months later, signaled an end to the Cold War doctrine of deterrence because it failed to prevent terrorist attacks. Instead, the Administration outlined a doctrine based on pre-emptive action against rogue states believed to be harboring terrorists, most notably Al-Qaeda, or developing weapons of mass destruction (WMD). Eliminating the threat posed by WMD in the hands of regimes opposed to the U.S. is a clear priority for the Bush administration.

These changes place the U.S. on almost permanent war footing. The new realities of the "war on terrorism" mean that the post-Cold War military strategy, which demanded that the U.S. be able to fight two regional wars at the same time, has been jettisoned. Keeping wars quick and focused on well-defined goals is not possible when an organization such as Al-Qaeda is estimated to have cells in as many as 60 countries. Further revision of military doctrine is likely to be seen in the immediate aftermath of the Iraq campaign in which U.S. forces were successful beyond expectations. Force transformation will continue apace in order to develop increasingly flexible force structures designed to counter emerging threats such as terrorism and WMD.

U.S. defense spending continues to rise with continuing military action abroad and an acceleration of planned research and procurement. The White House budget request for 2006 includes \$419 billion for the Department of Defense (DoD), which does not include an additional \$100 billion to pay for the wars in Iraq and Afghanistan or approximately \$20 billion in nuclear weapons work performed by the Department of Energy.

The 2006 budget represents a staggering \$128 billion increase in funding from the 2001 budget, a 44% increase. Defense spending growth will continue through at least 2011 when the DoD budget is expected to reach \$502



Source: DOD; AngelouEconomics

billion. From 2001 to 2011 the 6% annual growth rate for DoD budgets represents nearly twice the growth rate of the overall economy.

The Administration's 2006 defense budget represents a continuation of the previously established priorities. Growth remains solid and, for the most part, changes to the prior budget plan are minimal. The budget does include \$30 billion in cuts to major programs, including, as expected, the F/A-22 Raptor stealth multi-role fighter aircraft, Virginia-class nuclear-powered attack submarine, and C-130J tactical transport aircraft. However, most of the funding cuts are in future years' budgets and could be changed or reversed.

The Defense Department spends over half its budget with outside private sector contractors, \$230 billion last year. The DoD contracts with outside vendors for a wide variety of goods and services, with weapons procurement only accounting for 40%. DoD is a heavy purchaser of manufactured goods, purchasing nearly \$100 billion worth in 2004. Spending in this industry is dominated by large-scale weapon platforms, but the DoD spent over \$100 million on 19 of the 20 manufacturing sub-sectors, including everything from textiles to furniture.

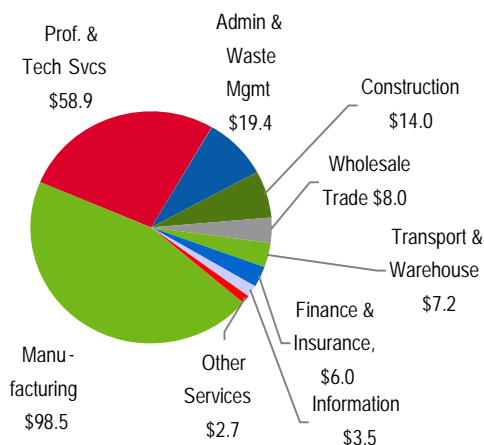
Professional, scientific, and technical services are the second largest recipients of DoD contracting, with \$59 billion spent in 2004. Research and development in engineering and life sciences account for 40% of total spending and engineering services account for another 40%.

### Advanced Security

The overall U.S. security market is a multi-billion-dollar industry with a double-digit growth rate. The industry is divided into three main end-use segments: **commercial**, **government**, and **residential**. The advanced security cluster is comprised of many technology-based occupations. Because national employment data is classified by functions such as software, IT, and engineering, it is difficult to determine the exact employment in the advanced security cluster. However, according to a Hallcrest report, it is estimated that there are 30,000 security companies worldwide. The chart on the next page approximates employment in the cluster using the NAICS codes most suitable for the cluster. Employment experienced a dip from 2000 – 2003. This decrease, however, is reflective of the general reduction in technology employment

## DEFENSE PROCUREMENT TODAY

DOD PROCUREMENT SPENDING BREAKDOWN, 2004



## ADVANCED SECURITY

### NAICS Definition

- 334119 Biometrics system input device
- 3355999 Electrical Equipment Manufacturing
- 541380 Testing Laboratories
- 5417 Scientific Research and Development
- 56162 Security Systems Services
- 561612 Security Patrol Services

### Industry Profile

- \$23.4 billion in revenues

### Wage Rates

- \$25/hr - U.S.

### Location Criteria

- Educated workforce
- Research institutions
- High tech cluster

after the dot-com bust and not necessarily a reduction in advanced security employment.

In fact, in 2003, the U.S. security market had record revenues of \$35 billion. Industry consultants at the Freedonia Group expect revenues to more than double to over \$48 billion by 2007. Revenue growth is predicted to be just as fast outside the United States. Western Europe and Japan are the largest markets outside the U.S., but East Asia, Latin America, and the Middle East have the strongest revenue growth. Estimates predict that the global security market will expand to over \$100 billion in revenues.

Despite some merger activities, the Advanced Security industry still remains a highly fragmented industry populated by many small companies dispersed across the U.S. and the world. This industry is expected to experience clustering effects as these smaller companies co-locate to share resources, technologies, and labor to increase their collective competitiveness.

#### Commercial Security Market

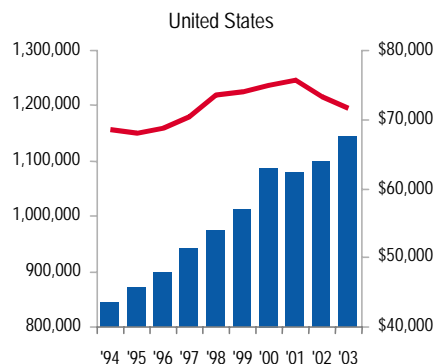
Commercial security purchases will grow considerably from \$14 billion in 2002 to \$29 billion in 2009. A combination of decreasing prices and increased demand from industrial and utility users is driving this growth. The fastest growing commercial markets are health care and financial services due to increased crime and corporate fraud.

Main technology applications in the commercial security market will be similar to those demanded by the government. Three major areas are:

- **Surveillance & Monitoring**, which includes *digital video surveillance, advanced sensors, and infrared systems*
- **Detection & Screening**, which includes *air, food, & water screening, bioterrorism, large baggage and container shipments*
- **Tracking & Identification**, which includes *biometrics (finger, eye, face detection), optics, tracking technology (Smart Cards)*

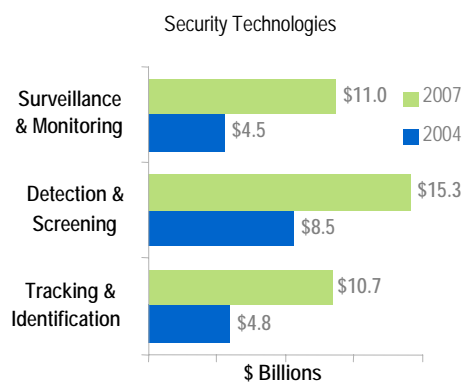
Another driver of the growth in the commercial security market is the need for increased computer and network security. Computer crime and security affects virtually every business and person in the modern world. March 2004 figures from mi2g, a technology security firm, show that the NetSky virus alone caused between \$35.8 billion and \$43.8 billion in damages worldwide. Such viruses not only wreck the computers they infect, but also clog email systems around the globe.

#### ADVANCED SECURITY, 1994-2003



Source: AngelouEconomics/BLS

#### ADVANCED SECURITY, 2004-2007



Source: Morgan Keegan & Co.

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### *Government Security Market*

Government spending on security increased dramatically in the aftermath of the 9/11 attacks. U.S. government administration and security spending is handled by the Department of Homeland Security (DHS). Terrorism fears are behind the increase in government spending as state and federal authorities attempt to secure the nation's vital facilities. While the government market is not the largest security market, it is the most advanced.

In 2003, DHS spent \$38 billion. Spending is expected to reach \$41.4 billion in 2004 and projected to grow to \$47.3 billion in 2005. Some of this spending will be earmarked to support ongoing operations at the department. However, it is expected that approximately 30% of these funds will flow to the private sector.

The main technology application sectors that are targeted by the Department of Homeland Security are:

1. Security and intelligence software
2. Explosives detection systems
3. Surveillance/border and perimeter security systems
4. Bio-terror: detection, diagnostics, treatment
5. Training and simulation systems
6. Access control / Biometrics
7. Data security

### *Residential Security Market*

The residential security market is the smallest of the three main segments with 2002 sales of \$1.7 billion. Growth is strong, though, and 2009 revenues are forecasted at \$3.2 billion. The residential market is focused on home security systems and other relatively low-tech aspects of the security market.

### **Defense Manufacturing**

Defense manufacturing includes all aspects of manufacturing, design, research and development, warehousing, and logistics related to federal defense projects. The Departments of Defense and Homeland Security are the industry's primary customers in addition to numerous export markets. Major industry sectors include vehicle manufacturing, arms manufacturing, and military logistics.

Defense Department spending reached \$450 billion in 2004 and the department is the largest organization on Earth in terms of revenue and employment. The 2004 procurement budget reached a record \$81 billion with large outlays for vehicle and aircraft manufacturing by both the Army and Air Force. Spending on research and development of new technologies and

<b>DEFENSE MANUFACTURING</b>	
<b>NAICS Definition</b>	
	336 Transportation Equipment Manufacturing
	33612 Heavy Duty Truck Manufacturing
	336992 Military Armored Vehicle and Tank Mftg
	332993 Ammunition Manufacturing
	332995 Ordnance and Accessories Manufacturing
<b>Industry Profile</b>	
	· \$160 billion in revenues
	· 350,000 employed - US
<b>Wage Rates</b>	
	· \$26/hr - U.S.
<b>Location Criteria</b>	
	· Transportation infrastructure
	· Existing military facilities/operations
	· Manufacturing workforce
	· Proximity to good technical training institutions

testing new equipment accounted for \$64 billion. Spending on research and development is expected to increase faster than the overall defense budget and the procurement budget in the immediate future.

The chart below shows typical occupations, growth rates, and wages in the advanced security and defense industry.

INDUSTRY OCCUPATIONS		
OCCUPATION	10 YR GROWTH FORECAST	MEDIAN WAGE
COMPUTER SOFTWARE ENGINEERS	45.5%	\$76,640
AEROSPACE ENGINEERS	-5.2%	\$85,300
MATERIALS SCIENTISTS	8.6%	\$63,510
MACHINISTS	8.2%	\$41,320
NETWORK ADMINISTRATORS	37.4%	\$61,690

Source: BLS

## Location Requirements

### Market

For defense and security firms whose customers are federal governments and large corporations, local economic conditions are not typically a concern. Firms do not serve local markets and are more concerned with quality of life than an expanding local economy.

### Structural Assets

Defense and security companies are the epitome of mission critical processes. Their mission is to secure the data and resources of business and government. Thus, they must be highly secure themselves. They need electricity that is beyond reliable. Sites must have a redundant power supply as well as an on-site generator. Travel times to the area should be reasonable with, at most, one-stop flight access to Washington D.C.

### Workforce

The defense and security industry needs a highly technical workforce. About one in four employees are in computer-related occupations, most notably software engineers, computer programmers, and computer systems analysts.

### Cost of Doing Business

The industry's operating costs, while important, are not typically a concern for the industry. Many of the industry's largest clusters are located in high cost areas such as Southern California. But excessive wages and high costs of living are now driving these companies to search for more affordable locations. Next to labor, electricity is one of the largest recurring costs.

### Research & Development

Research and development in government data security has increased dramatically since the increased terrorist concerns following the September 11<sup>th</sup> attacks. Major research projects are funded by virtually every government defense agency including the Departments of Defense and Homeland Security, the National

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Institutes of Health, and all branches of the US military. Because the nature of the industry involves staying one step ahead of the nation's enemies, research and development will always be an important part of this industry.

## Review of Metro Hartford Assets' and Constraints in Advanced Security & Defense Manufacturing

Approximately 8,000 persons are employed in the aerospace and defense industry in the Metro Hartford region. **Major employers** in the region include UTC subsidiaries Pratt & Whitney and Hamilton Sundstrand, Colt Manufacturing, Turbo Power Marine, and Kaman Aerospace Corporation.

### Assets

- Defense contracting firms prefer to concentrate near one another. The greatest asset Metro Hartford possesses is the existing concentration of defense manufacturing companies.
- The region possesses a highly educated, technical workforce and one that is particularly skilled in defense manufacturing. Many of those who have been employed in the metal manufacturing fields have transferable skills for this industry.
- Asnuntuck Community College has put tremendous resources into a Manufacturing Technology program designed to introduce high school graduates to careers in high-tech manufacturing, as well as train career employees in advanced methods of manufacturing.
- Metro Hartford's highly touted quality of life is more of a concern to defense contractors than the cost of living.

### Constraints

- Limited access to venture capital and other high-tech funding sources may hinder future growth.

### Niche Targets

#### 1. Monitoring Devices

The term "Biometrics" has been used to refer to the emerging field of technology devoted to identification of individuals using biological traits, such as those based on retinal or iris scanning, fingerprints, or face recognition. Optical monitoring devices are electrical devices that allow an area to be remotely and automatically monitored. Like optical monitoring, advanced sensors use cutting-edge technology to monitor and account for remote disturbances automatically.

#### 2. Security and Intelligence Software

This includes producers and designers of security and intelligence software. Many companies in this area are also service providers that provide outsourced technology services for large customers.



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### 3. **Biological/Chemical Detection Systems**

An attack using biological, chemical, or nuclear weapons is among the greatest fears of the intelligence community. DoD and DHS are spending enormous sums to develop advanced detection systems for population centers and incoming cargo containers.

### 4. **Communication Equipment**

The interlinking of communications, information technologies, and sensor systems can be used to significantly improve the speed of response, precision and effectiveness of a given level of military force has been confirmed. The DoD is moving forward with new communications platforms that begin at the war fighter level.

### 5. **Unmanned Aerial Vehicle Production**

The push toward network-centric warfare, a desire for real-time intelligence, and shifting threat paradigms have accelerated the push for increased use of unmanned autonomous and semi-autonomous platforms. Unlike aircraft production, there will be as many as 100 UAV lines in production over the next 15 years.

## Target Locations

- ✦ Although current security and defense firms are located throughout the region, close proximity to highways and airports make the I-91 corridor a likely location.

## Target Profile 2: FINANCIAL SERVICES

### Industry Overview

The Financial Services industry is comprised of commercial banks, savings institutions, financial leasing firms, and insurance companies. Financial service providers include equipment leasing companies, stockbrokers and investment banking firms, and back-office credit operations.

### Industry Trends

Twenty years ago, each sector of the financial services industry was separate and distinct - banks did banking, brokerage firms provided investment services, insurance companies insured, and real estate companies owned and managed real estate. As the government eased restrictions in the late 1970s and throughout the 1980s, companies crossed over into other financial service markets and state lines. These changes blurred lines of distinction between these groups. Merger and acquisition activity led by the idea of "convergence" and the 1999 repeal of the Glass-Steagall Act has allowed for the unification of banking, insurance, and securities services under one corporate roof. Globalization is also contributing to mergers and acquisition activity as U.S. companies have begun to compete with many foreign companies, which often operate under radically different rules.

The aging population has brought about increased demand for investment services. Today nearly 50% of all U.S. households hold stock, generating greater public interest than ever before in the financial services industry, which has a total U.S. output valued at \$1.5 trillion.

Today, the primary challenge for financial services companies is to contain cost and risk in the face of declining margins.

This fact rings true in Metro Hartford. Historically recognized as a national leader in the financial service industry, mergers, downsizing, and relocations have left Hartford with a declining national presence. The Hartford Financial Services Group Inc. and Phoenix Home Life Mutual Insurance Co. still have their central offices here, but Connecticut Mutual Life Insurance, St Paul Travelers, Cigna, and the Hartford Steam Boiler have all recently merged with or been sold to companies with headquarters elsewhere.

Through mergers, most financial services institutions are finding their corporate headquarters centered in and around the primary financial markets, specifically New York City and Boston. However, banks increasingly are utilizing call centers to replace information that used to be provided by tellers at a lower cost. Hartford is strategically located to capture a share of this market.

## FINANCIAL SERVICES

### NAICS Definition

- 52 Finance and Insurance
- 522320 Financial Transactions Processing
- 518210 Data Processing
- 522210 Credit Card Issuing
- 56142 Telephone Call Centers

### Industry Profile

- 8 million employed – U.S.

### Wage Rates

- \$18/hr – U.S.

### Location Criteria

- Educated workforce
- Quality office space
- Affordable utilities

Support staff for the Financial Services industry performs a variety of record keeping duties. They track revenues as well as provide customer support. They provide payroll, procurement, and auditing services for their clients. The growing financial services and health care industries will require increasing levels of back office support. Both industries will continue to move these support functions off site or even outsource the operations to third party vendors. However, productivity improvements from information technology will limit job growth for some financial professions.

Although the domestic call center industry has struggled over the past few years, financial services call centers have been a bright spot. Many call centers have closed as companies outsource or merge their call center services. Increasingly companies are outsourcing their call center services to offshore entities in countries with large English speaking populations. India is the most popular destination for call center outsourcing. Strong competition for call centers also comes from Canada, South Africa, Costa Rica, and the Philippines.

Financial service call centers have been less affected by these changes than the industry. They have a higher value-add and have moved operations overseas with much more caution.

The chart below shows some of the most common occupations, growth rates, and wages in the industry.

INDUSTRY OCCUPATIONS		
OCCUPATION	10 YR GROWTH FORECAST	MEDIAN WAGE
FINANCIAL ANALYSTS	18.7%	\$59,390
CUSTOMER SERVICE REPRESENTATIVES	24.3%	\$32,480
CREDIT ANALYSTS	18.7%	\$53,240
ACCOUNTANTS	19.5%	\$56,150
FINANCIAL MANAGERS	18.3%	\$94,870

*Source: BLS*

## Location Requirements

### Market

Back-office support organizations often look to non-metro and suburban communities when relocating. Industry firms desire locations where competition for labor is low and large campus tracts or office buildings are available. Stability is a key goal for many relocations.

### Structural Assets

Back office operations serve as hubs for many other vital functions. Therefore, it is essential that power, telecom, and other ISP services be reliable and affordable. These operations are light users of utilities, except for power.

### Workforce

Financial service support centers require workers with high school diplomas and employees with some specialized accounting knowledge. Many mutual funds and brokerage call centers require college degrees

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and specific industry certifications. Many companies seeking to lower their costs look to areas with high underemployment rates among younger demographics. Competitive wage rates are very important.

### **Cost of Doing Business**

Major expenses for the industry include employee training and establishing communications infrastructure. Turnover is common among the back office support staff. Because the cost of telecom is high, it is important that real estate cost is competitive.

### **Research & Development**

Universities serve the industry by providing a trained workforce. Some local software research can help firms stay competitive.

## **Review of Metro Hartford Assets and Constraints in Financial Services**

Hartford has historically been referred to as the “Insurance Capital of the U.S.” Within the 35-town study region, over 80,000 persons, or 16% of the workforce, are employed in the Financial Services cluster. This is the highest percentage of any metropolitan area with at least 1 million people.

**Major employers** within the Financial Service sector include The Hartford Financial Services Group, St. Paul Travelers, AETNA, ING, and CIGNA Corporation.

### **Assets**

- Metro Hartford has highly skilled workforce with a strong base of knowledge and experience in financial services. Over 80,000 people in the Metro Hartford region are employed in the financial service cluster.
- The region is a lower cost alternative to other major Northeast markets.
- Hartford’s strategic location offers ease of access to parent headquarters in New York City and Boston.
- An abundance of colleges and universities supply a trained workforce.

### **Constraints**

- The region faces a cost of doing business that is not competitive with competing cities in the South and Midwest.
- As mergers continue to re-shape the industry, many “image conscious” financial companies prefer to locate in the larger financial markets of New York City and Boston.

## **Niche Targets**

### **1. Financial Service Call Center**

Call centers are at the center of the future strategy for financial service companies. Call centers will not only provide valuable customer service functions, they will also determine the cost structure of a

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financial services company. Companies that operate innovative, cost-effective call centers will gain competitive advantage in the market.

**2. Back Office Processing**

Back office facilities handle a variety of corporate functions including finance and accounting, application processing, and technical support. With many financial corporations headquartered in nearby New York City and Boston, Hartford's proximity, workforce, and cost structure position the area to attract to the back offices of these headquarters.

**3. Financial Service Software Development**

Due to the widespread use of computers and networking technology, software development can occur nearly anywhere. Many software development firms have begun to open small-to mid-sized development offices throughout the U.S. in order to save money and find talent, which has is sometimes expensive and hard to find in larger metropolitan areas.

### Target Locations

- ✦ **The city of Hartford and the towns immediately surrounding it**
  - With extensive infrastructure already in place that is conducive to financial industry needs, the capital city of Hartford is the ideal location for these niche targets.
  - Vacant offices downtown could handle a variety of financial companies' back office operations.

## Target Profile 3: BIOTECHNOLOGY

### Industry Overview

Biotechnology, as its name implies, combines biology with technology. It applies knowledge of molecular, cellular, and genetic processes to real world products and services. It refers to scientific work related to genetic engineering for humans, animals and agriculture, environmental work, genetic data mining, and firms involved in the neurosciences and genome work. The area of biotechnology that is more closely linked with direct applications in health services is known as biomedical. Biomedical includes pharmaceutical manufacturing, medical equipment manufacturing, medical and dental laboratory services, and hospital applications. There are approximately 1,300 biomedical companies in the U.S.

### Industry Trends

While the health service industry in the U.S. has outpaced population growth by 2-3 times, biotechnology has grown at an even faster rate. Global sales of prescription drugs currently top \$300 billion with the U.S., Japan, and Europe accounting for 80% of all sales. According to the Bureau of Labor Statistics, the number of wage and salary jobs in pharmaceutical and medicine manufacturing is expected to increase by about 23% over the 2002-12 period, compared with 16% for all industries combined. All told, biotechnology should add nearly 400,000 jobs throughout the current decade across the United States.

### BIOTECHNOLOGY

**NAICS Definition**

- 325411 Medicinals/Botanicals
- 325412 Pharmaceutical PreparationMfg
- 325413 In Vitro Diagnostic Substances
- 345414 Biological Products
- 54171 Life Sciences R&D

**Industry Employment**

- 200,000 employed – U.S.
- 1.2 Million employed (when including Pharma and Medical Devices)

**Wage Rates**

- \$33/hr – U.S.

**Location Criteria**

- Educated workforce
- Access to capital
- Affordable lab space
- Major research presence

The chart below shows some of the most common occupations, growth rates, and wages in the industry.

INDUSTRY OCCUPATIONS		
OCCUPATION	10 YR GROWTH FORECAST	MEDIAN WAGE
BIOMEDICAL ENGINEERS	26.1%	\$70,550
MEDICAL SCIENTISTS	26.9%	\$61,780
BIOLOGICAL TECHNICIANS	19.4%	\$35,420
COMPUTER SOFTWARE ENGINEERS	45.5%	\$76,640
CHEMISTS	12.7%	\$54,990

Source: BLS

The U.S. government too, will demand biomedical products to support efforts to detect and protect against chemical and biological agents. Competition for biotech firms will be fierce, as almost every major metro

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includes it as a target industry. The Brookings Institute reports that out of 77 local and 36 state economic development agencies surveyed, 83% list biotechnology as one of their top two target industries. Biotech and health services, however, will likely experience growth in all markets, creating opportunities for those communities that have prepared themselves. Successful communities will be those that excel in research and are able to turn that research into marketable products. Currently, most biotechnology clusters are located in the Northeast (New Jersey and Boston), the Research Triangle, and California. New contenders in recent years include Central Texas and Salt Lake City. According to Ernst & Young, Connecticut is one of the fastest growing regions in the country for Biosciences.

## Location Requirements

### Market

Biotechnology firms seek locations in highly vibrant and well-educated communities. Firms also desire a growing population that is large enough to support workforce needs in a growing industry. Biotech companies also desire an amount of diversity in the community as many of the industry's employees are from minority groups.

### Structural Assets

Biotech firms have specific but feasible infrastructure needs, namely available "wet lab" space and reliable utilities. The typical biotech firm is relatively small and the majority of any capital investment will be utilized for equipment.

More important are the financial needs of the industry. Biotechnology is an industry in its infancy, still relatively small even after a decade of substantial growth. Today, less than 50 industry companies have over 1,000 employees and none rank among the top 25 employers in the largest biotech metros. Biotech firms need an established venture capital base that is familiar with the industry. Less than 1 out of every 1,000 biotech related patents produces a successful commercial innovation and even when they do it can take more than a decade to come to market. Therefore biotech firms need financial backers that understand the industry and have long-term funds available for investment. Many of the industry's largest firms, including industry leader Amgen, were initially funded with venture capital.

### Workforce

Attracting and retaining a quality workforce is more important in high-tech fields such as biotech. Workers tend to be highly mobile, meaning that they are willing to venture into a community, but they are also easily swayed away. In an industry with high turnover, people tend to seek communities with numerous employment options. The typical biotech firm has less than 50 employees and most are very well educated. Biotech firms employ many life science PhDs, and will require an area research university with graduate life-sciences programs.

### Cost of Doing Business

Firms usually have long and expensive research and development cycles that may prolong revenues for years. Due to large barriers to entry, a firm's success is highly dependent on entrepreneurial networks and long-term venture capital. Biotech firms and especially emerging ones face more competition for capital than in recent years. Time to market is critical. Marketable results generally take between 5 and 12 years. Many companies face enormous risks as they often are highly dependant upon a single drug or product that could fail or be tied up in a lengthy regulatory approval process by the F.D.A.

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## Research & Development

The large biotech firm is a rarity. Even in established markets, biotech firms are not considered large employers. Firms that specialize in research are generally no more than a small lab. These firms sell or license their marketable products to large vertically integrated powerhouses such as Merck and Pfizer. Thus it is important to have large research organizations in the area. Small biotech firms benefit greatly from a research hospital or other large research institutions. They are able to use lab space and instruments they might not otherwise be able to afford, license technology, and gain invaluable intelligence from industry peers. All of the largest biotech metros in the U.S. have both a large research university and research hospital.

## Review of Metro Hartford Assets and Constraints in Biotechnology

Almost 2,500 persons are employed in biotechnology in the Metro Hartford region.

**Major employers** include Hamilton Sundstrand, United Technologies Research Center, Ethicon, and Henkel Loctite.

### Assets

- The Metro Hartford region is home to the University of Connecticut, whose research and development programs are concentrated in the biosciences. Yale University and the University of Hartford also have research programs concentrated in biotechnology. Almost \$430 million at these 3 universities was dedicated to biosciences research and development.
  - At the University of Connecticut, the biotechnology research focus is on neuro-engineering, biomedical imaging, and biomaterials. Approximately \$107 million in research and development funding was awarded in biological and medical sciences in 2002.
  - At Yale University, the biotechnology program is anchored in the areas of medical imaging, biochemical engineering and biomechanics. Faculty research activity includes efforts on developing micro-arrays for DNA analysis and the integration of functional and anatomical imaging information to help plan and guide intricate neurosurgical procedures.
  - At the University of Hartford, the research focus is in biomechanics emphasizing bio-implants, sensing, and human factors in the work environment.
- The region has a highly educated workforce. Connecticut is seventh among the 50 states in number of Ph.D. scientists and engineers per 1,000 persons.
- Excellent transportation infrastructure is attractive to a biotech firm. Two major interstates link the region with the other major cities of the Northeast. Bradley International Airport is located just 15 minutes north of downtown.
- Four international pharmaceutical companies (Bayer Corporation, Boehringer Ingelheim Pharmaceuticals, Bristol-Myers Squibb, and Pfizer) have major research and development operations in Connecticut. This includes Pfizer's global research and development headquarters.



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- Numerous private bio-park developers, including the Acorn Group, LLC, Lyme Properties, LLC, Spaulding & Slye Colliers International, and Winstanley Enterprises, LLC, are also working to develop additional wet lab research space for biotech companies.

### Constraints

- The lack of an entrepreneurial climate hinders the growth of biotech firms. Companies in the region have trouble attracting venture capital.
- Biotech firms prefer to locate in a rapidly growing area. Metro Hartford is experiencing a declining population within the city of Hartford and a flat population growth rate within the region.

### Niche Targets

#### 1. Medical Device Manufacturing

Medical devices are generally defined as instruments, appliances, and systems used to diagnose diseases and treat patients. These devices range from catheters and surgical swabs to x-ray machines and cardiac pacemakers. The industry is different than, but often inspired by, advances in biotechnology, which involves biological processes, drugs and genetic engineering. A recent study by the national Biotechnology Industry Organization, State Bioscience Initiatives 2004, found that Connecticut is one of only 14 states having a significantly high concentration of medical device industry employment in the state.

#### 2. Pharmaceutical Manufacturing

Pharmaceuticals are at the heart of biotechnology as more drugs are being developed with the aid of advanced computing and data techniques. According to the Biotechnology Industry Organization, an estimated 325 million worldwide have been treated with over 130 FDA-approved drugs and vaccines. Most of these drugs are new, with 70% of the biotech drugs on the market being approved within the last six years.

#### 3. Biotechnology Research

Bioscience research within the state of Connecticut totals almost \$4 billion. Eighty percent of all funding for research and development at area universities, or \$430 million, is targeted at the biosciences. This academic base offers a superb base on which to build biotech research facilities and companies.

### Target Locations



#### I-91 Corridor

- Over 100 medical device manufacturers are located on the I-91 corridor.
- This corridor also forms the primary backbone of the “Knowledge Corridor”, home to more than 30 colleges and universities.

## Target Profile 4: LOGISTICS & DISTRIBUTION

### Industry Overview

Logistics is the process of planning, implementing, and controlling the efficient flow of goods and services through the supply chain from producer to consumer. Distribution includes all freight carriers (air, water, trucking, and intermodal) and warehousing. Until recently, most manufacturing firms took responsibility for the warehousing and coordination of their flow materials. More often these services are outsourced to develop an advanced just-in-time delivery system.

Virtually every product sold moves through the distribution industry, meaning that this industry touches roughly a third of the nation's GDP. The movement of these goods, a \$264 billion industry, is increasingly coordinated by high-tech means such as global positioning satellites, real-time Internet tracking, and just-in-time inventory systems.

And so, the industry has two distinct sides. The distribution of goods will continue to be serviced by "low-tech" suppliers – trucks, airplanes, and ships. **The logistical coordination, on the other hand, is a high value-added service that will differentiate companies and drive industry growth in coming years.** Technical workers dominate employment in this field. It is composed of advanced just-in-time coordination and the electronic devices involved, often called "track and trace." Federal Express clearly pioneered the service side of distribution, and more established companies have been racing to catch up, including the United States Postal Service.

### Industry Trends

Logistics and distribution (L&D) has suffered in recent years, due to both cyclical and structural changes in the United States economy, although globally, the industry is growing.

L&D serves other industries, with manufacturing being the largest consumer of transportation and warehousing services. The fall in manufacturing output during the latest recession has led to a similar decline in the demand for L&D services. Those areas that managed to expand their economies while the nation in general struggled, however, saw tremendous growth in logistics and distribution. Large distribution centers continue to rank among the largest new economic development projects in the U.S.

### LOGISTICS & DISTRIBUTION

#### NAICS Definition

- 484 Truck Transportation
- 482 Rail Transportation
- 4885 Freight Transportation Arrangement
- 4884 Support Activities for Road Transportation
- 4882 Support Activities for Rail Transportation
- 493 Warehousing & Storage

#### Industry Profile

- \$95 billion in revenues
- 640k employed – U.S.

#### Wage Rates

- \$11/hr – U.S.

#### Location Criteria

- Good access to major highway
- Affordable land
- Large nearby market for goods
- No inventory tax

The industry is also affected by the structural changes in the U.S. economy. *The large traditional users of logistics and distribution services are becoming an increasingly smaller part of the U.S. economy.* Manufacturing, which uses almost a quarter of all transportation services, increased output by a mere 2% between 1993 and 2003. The two fastest growing sectors of the economy, computer services and health care, use relatively little transportation services. These structural changes are expected to continue as the U.S. economy becomes more service-oriented.

The chart below shows some of the most common occupations, growth rates, and wages in the industry.

INDUSTRY OCCUPATIONS		
OCCUPATION	10 YR GROWTH FORECAST	MEDIAN WAGE
FREIGHT LABORERS	6.6%	\$20,410
INDUSTRIAL TRUCK OPERATORS	11.1%	\$20,450
STOCK CLERKS	-4.2%	\$28,680
SHIPPING & RECEIVING CLERKS	3.0%	\$27,450
TRUCK DRIVERS	19.0%	\$37,120

Source: BLS

## Location Requirements

### Market

Logistics and distribution companies seek excellent highway access, affordable land on which to build their warehouses, a large market nearby, and no inventory tax. Economic growth is important as well. Distributors' revenue comes largely from area firms and regional consumer needs. In either case distributors desire a growing regional economy that expands their potential client base. Large distribution firms locate near mid-size to large metros with a hub airport.

### Structural Assets

Logistics and distribution firms require large tracts of unencumbered land, and an excellent transportation infrastructure. Affordable utilities are desired.

### Workforce

Occupations in logistics and distribution use varied skill sets. Entry-level positions are available as laborers and materials handlers. Truck drivers are also vital to the industry. A limited number of IT professionals are needed to support supply chain companies as well. The industry has high turnover so areas need to have a sizable available workforce. Many distribution facilities employ college students part-time, making a young population a key concern.

### Cost of Doing Business

Logistics and distribution companies invest primarily in warehouses, trucks, equipment, and IT infrastructure. Inventory taxes are avoided at all costs and many distributors look for special incentives such as reduced taxes on fuels. Those large operations require massive land tracts at low prices, and generally make minimal building improvements. Recent expansions have received tax abatements, tax credits, infrastructure improvements, and industrial revenue bonds.

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## Research & Development

Many universities and companies such as Wal-Mart and FedEx conduct supply chain research. Mathematicians, computer scientists, and operations experts conduct this research. Research and development is less important than in most industries.

## Review of Metro Hartford's Assets and Constraints in Logistics & Distribution

Over 6,000 persons are employed for logistics-related companies in the Metro Hartford region.

**Major employers** in the region include Federal Express Ground, Ahlstrom Paper Group, C&S Wholesale Grocers, and the United Parcel Service (UPS).

### Assets

- Metro Hartford's strategic location between two major markets makes it a prime target for regional distribution and warehousing companies.
- Lower operational costs, relative to the Northeast, also make Metro Hartford attractive for regional distribution centers.
- Bradley International Airport is one of the fastest growing in the country, and serves as a distribution hub for major cargo companies, including FedEx, UPS, and the U.S. Postal Service.
- The region is home to a wide variety of just-in-time manufacturing companies serving the aerospace, medical, and pharmaceutical industries. Easy access to major highways and airports makes Hartford an attractive distribution hub for these industries.

### Constraints

- High property tax rates hurt Connecticut's competitiveness for large users of land, including distribution centers.
- Lack of international flights at Bradley International Airport limit the extent of international distribution.

## Niche Targets

### 1. Air Cargo

Air cargo companies arrange for and track incoming and outgoing cargo and freight shipments in airline terminals. They expedite the movement of shipments by determining the route that shipments are to take and by preparing all necessary shipping documents. The agents take orders from customers and arrange for the pickup of freight or cargo for delivery to loading platforms. Cargo and freight agents may keep records of the properties of the cargo, such as its amount, type, weight, and dimensions. They keep a tally of missing items, record the conditions of damaged items, and document any excess supplies.

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## 2. Transportation Warehousing & Logistics

According to the BLS, deregulation of interstate trucking in 1980 encouraged many firms to add a wide range of customer-oriented services to complement trucking and warehousing services and led to innovations in the distribution process. Today, trucking and warehousing firms provide businesses full-service logistical services encompassing the entire transportation process, including inventory management, materials handling, and warehousing. Firms that offer these services are often referred to as third-party logistics providers. Logistical services manage all aspects of the movement of goods between producers and consumers, such as sorting bulk goods into customized lots, packaging and repackaging goods, inventory control and management, order entry and fulfillment, labeling, light assembly, and price marking.

### Target Locations



#### Cities immediately surrounding Bradley International Airport

- Hartford's Bradley International Airport is one of the fastest growing in the nation.
- Bradley also serves as the distribution hub for UPS and is a regional distribution center for Federal Express and the U.S. Postal Service. Bradley's cargo security ranks in the top 5 nationally and serves as an active Foreign Trade Zone.

## Target Profile 5: CLEAN ENERGY

### Industry Overview

For the purposes of this report, clean energy is defined as technologies that reduce the environmental impact of energy generation. AngelouEconomics considers solar, geothermal, wind, clean coal, biomass, and fuel cells all to be clean energy technologies.

### Industry Trends

The energy industry is undergoing rapid change and has become truly multifaceted. Traditional fossil fuel extraction and production is as important as ever, and new technologies are changing the way natural resources are utilized. At the same time dwindling domestic resources, rising consumption, uncertain international energy supplies, and environmental concerns have forced the United States and others to develop sources of renewable energy production. The entire U.S. economy depends on having reliable, affordable energy. Clean energy generation can help meet domestic needs in a responsible manner.

Total energy industry revenues (traditional and clean) were \$148 billion in 2003, and clean energy accounted for 9% of total energy revenues. Clean energy is the fastest growing segment of the energy industry, with revenues in its three main segments (solar, wind, fuel cells) expected to increase from \$13 billion to \$92 billion over the next decade.

Energy is a long-term growth industry. As the American economy continues to grow, energy consumption will rise. The U.S. population expansion is contributing to increased energy use as well; energy consumption per capita is expected to rise 17% through 2025. Unfortunately, the United States lacks the domestic resources to meet projected demand. Therefore, the country's energy needs are increasingly met by imports. As

## CLEAN ENERGY

### NAICS Definition

22111	Electric Power Generation
2211199	Electric Power Generation - Solar, Wind
334413	Semiconductor related Manufacturing
3355999	Electrical Equipment Manufacturing
541380	Testing Laboratories
5417	Scientific Research and Development

### Energy Industry Profile

- \$148 billion in revenues
- 575,000 employed

### Clean Energy Industry Profile

- \$13 billion in revenues
- 32,000 employed

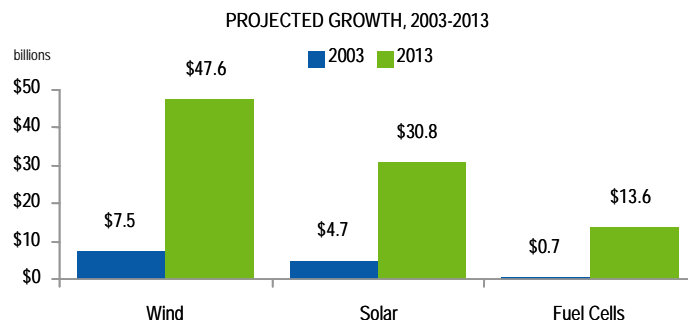
### Wage Rates

- \$24/hr – U.S .

### Location Criteria

- Educated workforce
- Access to capital
- Research institutions
- High tech cluster
- Temperate weather for testing

## CLEAN ENERGY GROWTH

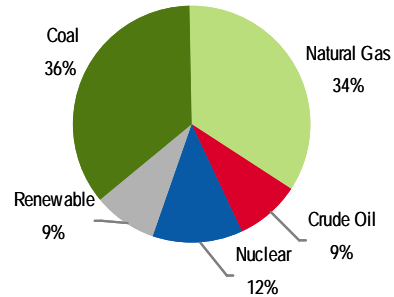


Source: Clean Edge

demand outgrows supply, prices will rise for both oil and natural gas, in turn leading to increases in energy prices.

Fossil fuels currently account for 81% of domestic production and all of the country's imports. Nuclear generation accounts for 11% and renewable/clean sources of energy account for 8% of U.S. production. Hydroelectric power accounts for the bulk of this U.S. clean energy production. Fractional amounts come from solar, wind, and geothermal generation.

### ENERGY PRODUCTION, 2002



Source: Dept of Energy

Renewable or clean energy has risen as a solution to many of our energy supply problems. Clean energy is widely available domestically, and falling costs have made many technologies feasible today. True to its name, clean energy has a negligible environmental impact when compared to coal and other fossil fuels.

The chart below shows some of the most common occupations, growth rates, and wages in the industry.

### INDUSTRY OCCUPATIONS

OCCUPATION	10 YR GROWTH FORECAST	MEDIAN WAGE
NUCLEAR TECHNICIANS	1.5%	\$54,140
POWER PLANT OPERATORS	0.3%	\$54,510
CHEMICAL ENGINEERS	0.4%	\$70,400
ELECTRICIANS	23.4%	\$48,820
INDUSTRIAL MACHINERY MECHANICS	5.5%	\$38,630

Source: BLS

### Fuel Cells

Fuel Cell technology began with its use in the Apollo Space Program. Fuel Cells are electrochemical devices that combine hydrogen and oxygen to generate electricity, heat, and water without combustion or harmful emissions.

The current U.S. market for fuel cells is estimated to be over a \$700 million and is expected to grow to nearly \$14 billion by the next decade. The advantages of fuel cells are: near zero emissions, few moving parts, and ability to generate electricity at remote locations without transmission lines.

Applications for fuels cells are classified in three categories: Stationary power, transportation, and portable applications. Stationary power applications include power for residential and commercial buildings. Fuel cells can provide power on site without the need for transmission lines, which is important for remote sites.

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Transportation applications vary from wheel chairs, golf carts, cars, vans, and buses. Fuel cell technology is being tested by every major automaker worldwide. The technology will first be introduced by large fleet vehicles such as busses and will spread to smaller vehicles as the fueling infrastructure develops. Portable applications include: electronic devices such as laptop computers, cell phones, cameras, and generators.

The outlook for fuel cells is bright. Presently, the barrier to commercialization is the manufacturing costs. It is estimated that some 4,000 companies worldwide are developing fuel cell applications. Automakers, governments, and other industries have invested at least \$7 billion over the last decade in fuel cell applications. The U.S. Department of Energy estimates that fuel cell development could add up to 750,000 jobs to the U.S. economy by 2030.

## Location Requirements

### Market

Research and production firms locate near metropolitan area with large high tech clusters and a growing economy, and often use the local market to test their new products. They often locate near a university or research institution to access a talent pool of engineers and scientists. Start-up firms in this industry tend to locate in progressive communities that support their endeavors.

### Structural Assets

Many of these companies are little more than small labs that typically require flex industrial space with an office component. Access to area research facilities can be important to firms within the clean energy industry.

### Workforce

The industry requires highly paid scientists, technicians and professionals with a range of skills from chemistry, biology, physics, engineering, management, and other technical and scientific backgrounds. Due to the nature of the industry, an entrepreneurial spirit is necessary as many employees may be transferred from high tech companies who are familiar with a start-up environment.

### Cost of Doing Business

Companies will look for areas with a low overall recurring cost base. Due to the high salaries of scientists and technical workers and extensive research and testing, general operating costs must be low. Clean energy firms will closely analyze state and local energy policies. Large-scale generators will look to states with renewable energy portfolio standards and other renewable incentives. More generally, companies will prefer states that have an active retail market for electricity, giving consumers the choice to use renewable sources of energy.

### Research & Development

Outside the largest industry firms such as GE Wind Power and Vestas, industry firms are typically very small, averaging between 10-20 employees, and have limited resources. Companies face significant hurdles to design, test and deploy products that meet a variety of governmental standards. Because of these demanding research needs and lack of funds, having available lab space within an area university or incubator is increasingly important. Firms will also want to be near areas that work as testing ranges, e.g. a solar firm wants to be located in an area with abundant sunlight.



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Much of the industry's research is extremely high-risk and could take decades to reach commercialization. The majority of this research takes place in federal labs tasked with clean energy research. These labs are located in a handful of states, including California, Colorado, and New Mexico. Industry firms in need of outside expertise, access to research facilities, and a potential workforce will cluster around these labs.

## Review of Metro Hartford Assets and Constraints in Clean Energy

Energy-related companies employ almost 300 persons in the Metro Hartford region. Although this number is not large, it is a growing industry that deserves the region's attention due to its emerging assets and resources.

The **major clean energy employer** in the region is the United Technologies Corporation (UTC) subsidiary, UTC Fuel Cells.

### Assets

- The region has an existing base of clean energy programs to build upon:
  - UTC Fuel Cells produces and develops fuel cells for commercial, transportation, residential and space applications. With more than 40 years of experience in the fuel cell business, UTC is one of the largest companies in the world solely devoted to fuel cell technology. Since 1966, all of the U.S. manned space flights have operated with UTC Fuel Cells. UTC is also the only company in the world producing commercial stationary fuel cell systems. UTC Fuel Cells has delivered more than 245 PC25 systems and has installed units in 19 countries on five continents.
  - UTC has also developed a research center in East Hartford, near Rentschler Field, that employs more than 450 persons. Among other programs, the fuel cell program provides research support to UTC Fuel Cells. In November 2004, the Connecticut Center for Advanced Technology received a \$21 million grant from the Air Force for the establishment of the National Center for Aerospace Leadership, a research program that will explore a number of technologies, including manufacturing methods in the areas of nanotechnology, lasers and fuel cell technology.
- Area colleges and universities have existing research bases in clean energy, specifically fuel cells:
  - The University of Connecticut (UConn) established the Connecticut Global Fuel Cell Center (CGFCC) in 2001 as a partnership between the UConn School of Engineering, Connecticut Innovations, Inc., and the Connecticut energy industry. With a brand new state-of-the-art 16,000 sq. ft. facility, the center is quickly becoming a leader in research, development, and commercial deployment of fuel cell engineering and technology. CGFCC is engaged in the research and development of fuel cells and related technologies concerned with renewable energy and a sustainable environment. The CGFCC is currently involved in researching and investigating five main fields of fuel cell technology. These research fields include advanced studies of catalysis, ionomers for Proton Exchange Membranes (PEM), PEM fuel cell research, portable direct methanol fuel cell systems, and

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solid oxide fuel cell research. Additionally, CGFCC is also involved in studies with over 80 different grants from various government and private sector institutions.

- In 2003, Yale University began operating the State of Connecticut's first high-efficiency fuel cell power plant at the Environmental Science Center on the Yale University campus.
- Metro Hartford has a highly educated labor pool, with almost 7,000 employed engineers and scientists.

#### Constraints

- The lack of an entrepreneurial climate hinders the growth of clean energy companies who rely on capital investment.
- The region has a high cost to do business when compared to Southern and Western states where clean energy efforts are currently concentrated, including New Mexico, Nevada, and Colorado.

#### Niche Targets

##### 1. Fuel Cell Manufacturing

As the home to one of nation's leading fuel cell companies, the Metro Hartford region is a natural target location for fuel cell companies.

#### Target Locations



##### I-84 Corridor east of Hartford

- The I-84 corridor east of Hartford currently provides access to UTC Fuel Cells, the UTC Research Center, and the University of Connecticut.

## Target Profile 6: HEALTH SERVICES

### Industry Overview

Health Services includes the traditional industry segments involving healthcare: doctor and dentist offices, assisted living, hospital, as well as specialty cosmetic enhancements and spa related services.

### Industry Trends

Health Services has been one of the fastest growing industries in the United States for many years. The U.S. healthcare market is estimated to be worth \$1.3 trillion annually and employs 12.5 million. The industry's employment is expected to grow by over 28% between 2002 and 2012, to 16 million. Specific sectors will see even higher growth; the home-based health care sub-market is forecasted to grow by more than 55% by 2012.

More health care is needed for the country's large aging population, and rising standards of living will boost demand by the general population even further. Due to the nature of its business, the health services industry is relatively immune to market fluctuations. The elderly population, a group with greater than average healthcare needs, will grow faster than the total population through 2008, increasing demand, especially for home health care, private practice, and personal care.

The chart below shows typical occupations, growth rates, and wages in the industry.

## HEALTH SERVICES

### NAICS Definition

- 62 Health Care and Social Assistance
- 6211 Office of Physicians
- 6213 Office of Other Health Practitioners
- 6214 Outpatient Care Centers
- 6216 Home Health Care Services
- 623 Nursing and Residential Facilities

### Industry Profile

- \$1.3 trillion in revenues
- 10.8 million employed – U.S.

### Wage Rates

- \$16/hr – U.S.

### Location Criteria

- Skilled workforce
- High income community
- Quality office space

## INDUSTRY OCCUPATIONS

OCCUPATION	10 YR GROWTH FORECAST	MEDIAN WAGE
HEALTHCARE PRACTITIONERS	26.0%	\$44,360
REGISTERED NURSES	27.3%	\$52,460
OFFICE SUPPORT	6.8%	\$32,440
HEALTHCARE SUPPORT	34.5%	\$25,390
NURSING AIDES	24.9%	\$27,490

Source: BLS

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The health services industry consists of the following nine segments:

- Hospitals
- Nursing and residential care facilities
- Offices of physicians
- Offices of dentists
- Home healthcare services
- Offices of other health practitioners
- Outpatient care centers
- Other ambulatory healthcare service, including blood and organ banks and ambulance services
- Medical and diagnostic laboratories

## Location Requirements

### Market

Health service companies are necessary in most communities. However, markets with a rapidly aging population or other special needs are most attractive for recruiting specialized health care services. It is also necessary for hospitals, hospices, and home care programs to locate in markets that have ready access to capital funds from a variety of sources, including governments, capital markets, and private equity investments.

### Structural Assets

Adequate infrastructure is one of the most critical requirements for health service firms. Traffic congestion should not impede emergency service personnel, a major airport should be nearby for reduced transport time, and telecommunications and energy infrastructure must be adequate.

### Workforce

Health services companies rely on a variety of trained employees. Medical schools supply doctors, therapists, and pharmacists. Local workforce training programs through community colleges can train skilled nurses and technicians. However, the industry also provides many job opportunities for people without specialized training. In fact, according to the BLS, more than half of workers in nursing and residential care facilities have a high school diploma or less.

### Cost of Doing Business

Although health care services must locate in every major market, affordable office space and utilities are desired.

### Research & Development

High levels of research and development activity and well-funded local research institutions support healthcare companies.

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## Review of Metro Hartford Assets and Constraints in Health Services

The Health Services cluster is the 4th largest cluster in the Metro Hartford region, employing more than 56,000 persons. 24% of the region's population is over the age of 55, compared to 22% nationally.

The major health service providers in the Metro Hartford region include Hartford Hospital, University of Connecticut Health Center, Hartford Health Care Corporation, and St. Francis Hospital.

### Assets

- The region has excellent hospitals, medical facilities, and university medical schools.
- There is an availability of office space for health care practitioners.
- The region has a highly trained labor pool and room to grow technical programs at community colleges.
- The region's high median income serves the industry well, as it relies heavily on fundraising and other capital sources.
- The region's aging population will serve as the primary customer for future growth of the industry.

### Constraints

- The poor perception of community colleges within the region may hinder the growth of health care technical programs necessary to fully meet the labor needs of the industry.

## Niche Targets

### 1. Home health care programs

The BLS estimates that home health care employment will jump by 55% between 2002 and 2012. Home health programs help elderly, convalescent, or disabled persons live in their own homes instead of in a health facility. Under the direction of nursing or medical staff, home health aides provide health-related services, such as administering oral medications. They may check patients' pulse rates, temperatures, and respiration rates; help with simple prescribed exercises; keep patients' rooms neat; and help patients move from bed, bathe, dress, and groom. Experienced aides also may assist with medical equipment such as ventilators, which help patients breathe.

### 2. Nursing and residential care facilities

The BLS estimates that residential care employment will jump by 25% between 2002 and 2012. Nursing care facilities provide inpatient nursing, rehabilitation, and health-related personal care to those who need continuous nursing care, but do not require hospital services. Nursing aides provide the vast majority of direct care. Other facilities, such as convalescent homes, help patients who need less assistance. Residential care facilities provide around-the-clock social and personal care to children, the elderly, and others who have limited ability to care for themselves. Workers care for residents of assisted-living facilities, alcohol and drug rehabilitation centers, group homes, and halfway houses.

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## Target Locations

- ✦ **All cities within the region.**
  - Health centers are needed across the region to serve the population well. Those in need of health care service are not concentrated in one particular town or location.
  - Major hospitals in the region, however, are currently located in and around the city of Hartford. These include Hartford Hospital, University of Connecticut Health Center, Hartford Health Care Corporation, and St. Francis Hospital.

**This Target Industry Report is only the second step in the process of developing the Comprehensive Economic Development Strategy for Metro Hartford.**

Along with the issues identified in the regional assessment, the targeted industries identified in this report will be addressed in the Comprehensive Economic Development Strategy with strategies for promoting the growth of each target industry within the Metro Hartford region. Those strategies will include specific action steps, organizations or individuals who should be responsible for implementing each strategy, a timeline for implementation, and performance measurements so that leaders in the region will be able to judge whether they are making progress in putting the strategies into action.

Like most regions across the country, the Metro Hartford region faces challenges that it must overcome if its leaders want to restore the region's economic vitality. However, it is important to note that the region also has a wealth of talent and resources that can be brought to bear in restoring the region, and the State of Connecticut, to its former level of economic productivity. If those resources, and the initiatives that have been put into motion by many leaders in the past few years, are all aligned so that they are all pointed toward the same overall goal, this Comprehensive Economic Development Strategy will succeed. The community leadership in the Metro Hartford region is committed to making that success a reality.

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