



This article examines (a) current/emerging status of manufacturing in the U.S.; (b) predominant locational influences for siting new production facilities; and, (c) synopsis of the location selection process. The article's primary intent is to better prepare manufacturers to select optimal sites for new production capacity. Additionally, insights put forward below should help communities to both better prepare for new industry and more effectively discharge industry retention responsibilities.

Manufacturing Status

Manufacturing is alive and well in the United States. This economic sector is expanding and should display impressive growth as long as the economy remains healthy. The much publicized "offshoring" of industrial jobs is greatly overstated in the American media. Contrary to popular impressions, off-

shoring reflects not the decline but rather the dynamism of U.S. manufacturing.

On balance, the U.S. manufacturing sector is healthy. While growth is uneven depending on the industry, the trend is upward. By 2006, nearly all manufacturing segments should be vibrant. A synopsis of growth trends follows.

1. Factory orders:

- Rose 2.9 percent in May according to the U.S. Department of Commerce;
- Three straight months of growth;
- Growth varied with the most robust sectors, including:
 - Aircraft;
 - Non-defense capital goods (e.g., robotics); and
 - Health care products.

Manufacturing Location Trends

By DENNIS J. DONOVAN

- Declining sectors included:
 - Computers; and
 - Machinery.
- The Manufacturing Alliance predicts fairly strong growth across most sectors over the forthcoming 12 months.

2. Manufacturing Activity Index:

- Reported by the Institute for Supply Management;
- Index of 53.8 in June, up from 51.4 in May; and

- An index above 50 portends manufacturing expansion.

3. Capacity Utilization:

- Reported by the U.S. Department of Commerce;
- In May, 78.2 percent;
- Up from 76.7 percent a year earlier; and
- Once the rate approaches 80 percent, new capacity likely.

4. Nonresidential construction:

- Increased 4.6 percent over the 12 month period extending from May '04 to May '05;
- Annual growth in 2005 forecast at 6 percent; and
- The 2006 projections call for an 8 percent increase.

5. Exports:

- Have risen about 2.5 percent since the beginning of this year;
- Growth in the 3 percent to 5 percent range a year forecasted for both 2006 and 2007; and

- Export growth reflects American product quality, technological competitiveness, and favorable exchange rates.

6. Manufacturing Employment:

- Has been stagnant so far this decade;
- Current employment is down about 0.5 percent from a year earlier; and
- Employment should start inching up as some 68 percent of industrial firms surveyed by Industry Week plan to increase employment during 2005.

7. National Association of Manufacturers Survey:

- 63 percent of U.S. producers plan to add new capacity over the next three years; and
- 70 percent of this investment will occur in the U.S.:
 - Among larger firms about half domestic and half overseas; and
 - Among small to mid-size companies roughly 80 percent domestic.

Despite dire predictions in some quarters, offshoring will not have a major impact on U.S. industrial employment over the foreseeable future. First, the majority of offshore investment by American corporations is in response to market opportunities, especially in large/developing countries. Concerning jobs lost because of U.S. manufacturers relocating operations to low wage countries, the most aggressive estimate is 200,000 per annum between 2005 and 2010. But that number will be partially offset by roughly 75,000 new manufacturing jobs spawned by foreign companies investing in the U.S. (inward investment). All told, during that period, the cumulative net number of jobs lost to offshoring would represent less than 5 percent of the U.S. manufacturing employment base for the year 2010. And by that time, the U.S. Bureau of Labor Statistics forecasts a labor shortage in America across all skillsets. Hardest hit will be the skilled trades such as numerical machine setup, technicians (e.g., electronic), and machinists.

It is true that companies making products characterized by the following will be more prone to move operation offshore:

- Low value;
- Low skilled;

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- Mass production;
- Minimal technology associated with production; and
- Long lead times.

By contrast, the offshoring threat will motivate the U.S. manufacturing sector to do what it does best – that is re-invent itself. The following will characterize goods produced in the U.S.:

- Superior quality;
- Embedded technology;
- Speedy delivery;
- Customization;
- Innovative after service;
- Products wherein labor represent less than 25 percent of the cost-of-goods sold; and
- Bulky and/or perishable items.

Seven companies represent the type of manufacturing that will flourish in the United States.

1. Siemens:

- Medical instruments;
- High value; and
- Requires extensive coordination between hospitals, doctors, and producers.

2. Hutchinson:

- Disk drive production in Eau Claire, WI;
- Instituted lean manufacturing techniques that significantly reduced labor content; and
- Can beat foreign competitors on shipping times and quality.



3. Allen-Edmunds Shoes:

- Based in Milwaukee;
- Concentrates on high-end shoes, priced between \$200-\$300 a pair;
- Produces a wide array of sizes and widths; and
- Guarantees 24 hour delivery.

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Depending on the character of the company's industry and operating requirements, the following criteria are likely to assume primary and secondary importance.

Type of Business	Primary Locational Criteria	Secondary Locational Criteria
Demand-Time Sensitive	Delivery time from customers and/or suppliers (usually less than overnight shipping by truck), limited access four-lane highways, motor carrier service (TL and/or LTL) & cost, sometimes air cargo, rail, or small package service, available building, nonunion, high quality labor force.	Labor costs, utility infrastructure, energy costs, natural disaster risk, taxation, environmental, sometimes distance from a seaport.
Labor Intensive	Availability of qualified workers (entry level and skilled), absence of significant labor market competition, affordable labor costs (near term and longer range), nonunion, post secondary vo-tech training, labor quality (e.g., basis skills) and stability (e.g., low turnover), available building, low occupancy costs, reasonable access to a four-lane highway.	Utility infrastructure, energy cost, transportation services/costs, taxation, environmental.
Energy Intensive	Electric power supply (generation and transmission), reliability, cost (near-term and longer range), dual electric power feed, natural gas availability/cost, water availability/quality/cost, environmental (air/water quality, regulation, permits, uncontaminated site), energy sales taxes, natural disaster risk, alternative energy (e.g., co-generation), nonunion, available site with utilities and roads in place, compatibility of nearby land-use.	Labor costs, occupancy costs, taxation, motor carrier and sometimes small package service, rail service, four-lane highway access.
Technology Oriented	Availability of skilled workers (e.g., industrial trades, technician, engineer), proximity to technical colleges/universities, attractive quality of life for national recruiting, presence of similar companies, available building, moderate labor cost, ability to be considered an "employer of choice," nonunion, reasonably good air service, broadband telecommunication, electric power reliability, redundant power & telecom	Labor costs, occupancy costs, taxation, motor carrier and sometimes small package service, four-lane highway access progressive community leadership, university/business collaboration, energy cost, natural disaster risk.
Capital Intensive	Tax practices/rates on real & personal property, supply of skilled & technical labor, availability of ready to go sites, fast track construction, often an available building, four-lane highway access, electric power reliability/cost, nonunion.	Telecom infrastructure, motor carrier service, sometimes air cargo service, energy costs, labor cost, occupancy costs, post secondary vo-tech education, quality of life, natural disaster risk.

In addition to the above criteria, another discernable trend is for companies to opt for small town (population under 50,000) locations. Occasionally, this will include communities that have good two-lane highway linkage to four-lane roads (often less than 25 miles).

4. Rowe Furniture:

- Makes upholstered furniture, mostly in VA;
- Reducing cycle time to 10 days;
- Customizes orders; and
- Has greatly increased automation.

5. Timken:

- Bearings manufacturer; and
- While global still needs plants in the U.S. to serve customers making products such as cars, trucks, helicopters, and x-ray machines.

6. American Racing Wheel:

- Has adopted the Triad manufacturing approach;
- Low value wheels made in China;
- Medium value wheels produced in Mexico; and
- Highest value wheels manufactured in the U.S.

7. EADS:

- Will produce air refueling tankers in Mobile, AL; and
- A U.S. site chosen mainly to be labeled “made in America.”

Even old line U.S. manufacturing companies, while expanding globally, are now adding jobs in the U.S. Such companies include GE’s aircraft division, Cummins, Caterpillar, and Deere & Co.

Having established that manufacturing in the U.S. is far from moribund, let’s now look at the primary criteria utilized to select sites for new production capacity.

Primary Locational Criteria

The weight placed on various locational criteria will differ according to the specific needs of individual companies. But, based on experience, we can provide some general yet meaningful observations on the paramount locational influences by industry grouping.

Characteristics of a manufacturing business will dictate the relative importance of various criteria. For location planning purposes, a useful way to classify manufacturing is by the overarching business driver. The five categories below are therefore instructive for discussing relative locational criteria:

1. Demand time sensitive (i.e., must be proximate to major customers);
2. Labor sensitive (e.g., payroll represents over 20 percent of cost of goods sold);
3. Energy intensive (e.g., large consumer of electric power, natural gas, or water);
4. Technology oriented (e.g., high engineering content in the product); and
5. Capital intensive (e.g., substantial investment in machinery & equipment).

The motivating force behind small town locational (Continued on page 36)

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preference involves both labor availability and business operating cost (labor, occupancy, taxes and incentives). This “small town” trend is likely to accelerate as the U.S. enters a period of protracted labor shortage (spanning all skillsets including qualified entry level). By 2010, the U.S. Department of Labor projects a national deficiency of workers equal to about 5 percent of the labor force. This shortage could comprise up to 15 percent of the workforce by 2030.

Consequently, many companies will gravitate toward locations wherein the subject operation would be viewed as a desirable place to work. Achieving this preferred employer status must be attainable at affordable cost, mainly labor. Moreover, favorable labor costs must be sustainable (i.e., future competitive environment will not result in either labor cost escalation or high turnover) well into the future.

Exemplifying (Continued on page 38)



West Tennessee Industrial Association

The West Tennessee Industrial Association (WTIA) is an economic development association of the West Tennessee electric power distributors. The core mission of WTIA is to assist in the attraction of new investment and the development in the region.

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this trend is Quebecor. The firm is one of the worlds' largest commercial printers. Many products are shipped via small package. The company's locational strategy is to locate plants that are within reasonable proximity to a small package hub. These locations are usually smaller communities such as Corinth, MS—about 90 miles from the FedEx processing hub in Memphis.

Also, note that incentives were not included among the predominant locational criteria for companies characterized by the type of business enumerated above. This is because incentives should come into play after a finite number of locations (e.g., 3-5) have been identified that satisfy critical operating requirements (e.g., labor, energy costs, available buildings). Incentives cannot turn an inferior location into an attractive one. Rather incentives can help to differentiate shortlisted locations that are viable on major operational considerations.

In evaluating incentives, manufactur-

ers should consider the following. Can the company fully utilize the incentives package (e.g., tax credits)? Will the company be eligible for all incentives given restrictions/eligibility criteria?

How do incentives change the long-term economic equation among finalist locations (e.g., 10 year comparative cost)? To capitalize on incentives, what are the tradeoffs on other operational factors

(e.g., labor supply/quality/stability)?

Do the incentives require a clawback provision that could cause difficulty and embarrassment if the company fails to meet stated objectives (e.g., employment or capital investment)?

Conclusions

Manufacturing is on the rebound and will continue to play an integral role in the U.S. economy. Despite globalization, the U.S. will continue (Continued on page 40)

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The Location Decision-Making Process

To ensure that a company arrives at a locational decision that maximizes success potential of the new operation, a structured analytical process should be followed. The process typically involves four phases. Basic elements of each phase are enumerated in the chart below.

Phase	Description	Objective	Major Input	End Result	Typical Timeframe (Weeks)
One	Planning	Study Building Blocks	Questionnaire, Internal Data Gathering, Competitive Intelligence, Team Dialogue	Operating Requirements, Weighted Criteria, Pivotal Assumptions, Base Case, Geo. Search Region, Timeline	2-3
Two	Screening	Shortlist	Data Search/ Gathering, Elimination Process	Longlist (Often 10 Areas) Comparison/ Ranking, Shortlist Generated (often 3 areas)	4-6
Three	Location Selection	Best Local Area (short range and long term)	Field Evaluation, Matching Co. Requirements vs. Area Resources	Optimal Location And Best Alternative	5-7
Four	Site Selection	Best Property	Site/Building RFPs & Review, RE/Incentives Negotiations, Due Diligence on Finalist Properties	Optimal Site/Bldg., Best Financial Arrangement	4-8

to witness increased investment and growth in the industrial sector. The most successful companies will be distinguished by offering quality, value, customization, and speedy delivery for customers.

Locational criteria vary by character of the proposed operation. But on balance the following considerations will typically assume primacy: labor market, business costs, energy infrastructure/costs, transportation services/costs, highway linkage, and available/modern buildings (reflecting the imperative of getting new capacity online quickly), and low disaster risk.

A four phase, systematic process should be followed to reach an optimal locational decision. Keys are agreeing on business drivers, properly weighting locational criteria, and deliberately following a process to ultimately choose the best location. And remember that incentives should be viewed in the proper context, i.e., "icing on the cake." **T&ID**

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