

The 2008 Georgia Manufacturing Survey



Georgia Tech is conducting this survey to develop benchmark information to help Georgia manufacturers be more competitive and improve state business and technology services to industry. Prior Georgia Manufacturing Surveys were completed in 1994, 1996, 1999, 2002 and 2005. We appreciate your cooperation in making the 2008 survey a success.

- In return for completing your survey, we will send a summary and customized report comparing your data with industry statistics.
- **All company information will be kept confidential.** All individual firm and facility information will be kept in a secured, limited access location. Results will only be presented in an aggregated form. Your firm or facility's identity will not be revealed in any publication or presentation of the results of this survey.
- We understand you do not always keep exact records of all activities – estimates and rounding are fine.
- This is the only copy sent to this facility. If there is another person at your location who can complete the survey, please forward this mailing to them.
- Survey questions refer to this facility or plant.
- Web-based survey is available at www.cherry.gatech.edu/survey

Please return this survey in the enclosed postage-paid envelope within 10 days to:

Jan Youtie
GMS 2008 – EII Project Number [ID]
Enterprise Innovation Institute
Georgia Institute of Technology
Atlanta, Georgia 30332-0640

Questions about the survey?

Telephone: (404) 894-6111 Fax: (404) 894-1447
e-mail: gms2008@innovate.gatech.edu www.cherry.gatech.edu/survey

Please confirm your name and address and make any changes if necessary.

[Contact Name]
[Company Name]
[Address]
[City], [State] [Zip]
[Phone]

THANK YOU FOR YOUR HELP

1. FACILITY - INDUSTRY AND NEEDS

1.1. Is this facility a single-establishment enterprise, not affiliated with any other enterprises?

- Yes** (skip to Question 1.2)
- No** – this facility is part of a company or group with two or more separate facilities.
 - ↳ If part of a multi-facility company or group, is the **head office** located in Georgia?
 - Yes**
 - No**, head office is located in _____(US state) or _____ (country outside of the U.S.)

1.2. At what year did you begin manufacturing at this facility?

1.3. Your facility's **main product** or manufacturing activity is: (Please check one)

- | | |
|--|--|
| <input type="checkbox"/> Food, beverages, feed | <input type="checkbox"/> Stone, clay, glass, or concrete products |
| <input type="checkbox"/> Textiles | <input type="checkbox"/> Primary metals (iron, steel, nonferrous) |
| <input type="checkbox"/> Apparel, leather | <input type="checkbox"/> Fabricated metal products |
| <input type="checkbox"/> Lumber and wood products, except furniture | <input type="checkbox"/> Machinery (industrial, nonindustrial) |
| <input type="checkbox"/> Furniture (wood or metal) | <input type="checkbox"/> Computer and electronic products, instruments |
| <input type="checkbox"/> Pulp, paper, or paper products | <input type="checkbox"/> Electrical equipment, appliances, or components |
| <input type="checkbox"/> Printing, publishing | <input type="checkbox"/> Transportation equipment |
| <input type="checkbox"/> Chemical, petroleum, coal & allied products | <input type="checkbox"/> Medical or laboratory supplies |
| <input type="checkbox"/> Plastics or rubber | <input type="checkbox"/> Other (please describe) |
- _____

1.4. For the plant's main product(s), please **RANK** the order of importance of the following factors according to how your facility competes in the market place for sales. 1=most important, 6=least important.

Please do not give the same ranking to more than one factor.

- | | |
|----------------------|---|
| <input type="text"/> | Low price |
| <input type="text"/> | High quality |
| <input type="text"/> | Innovation/new technology |
| <input type="text"/> | Quick delivery |
| <input type="text"/> | Adapting product to customer needs |
| <input type="text"/> | Customer service that adds value to products/processes (i.e., training, consulting) |

1.5. In which of the following areas does your facility have the most significant problems or needs?

(Check all boxes that apply.)

- Expansion planning, facility layout
 - Lean manufacturing and workflow improvement
 - Quality assurance (e.g., ISO 9000, QS-9000, Six Sigma)
 - Product development/design
 - Marketing and sales
 - Information systems and hardware
 - Business strategy, financial analysis, competitiveness planning
 - Basic workforce skills (e.g., reading, writing, math, keyboard skills)
 - Technical skills (e.g., machining, electrical work)
 - Management and leadership
 - Energy cost management
 - Water resource management
 - Environmental compliance and improvement
 - Safety compliance, health, workplace environment
 - Other (please describe)
- _____

2. PRODUCT, PROCESS AND ORGANIZATIONAL INNOVATION

2.1. A **product innovation** is the introduction of a **new or significantly improved** good or service. *The innovation must be new to your facility, but does not need to be new to your sector or market.*

During the period 2005-2007, did your facility introduce: *(please check if yes)*

- New or significantly improved goods (exclude resale of goods purchased elsewhere or changes to color or look)
- New or significantly improved services

If ANY of the boxes above (from 2.1.) are checked, please continue, otherwise skip to Question 2.4.

2.2. Were any of your goods and service innovations during 2005-2007 *(check all that apply)*

- New to your market?** (introduced before your competitors)
- New only to your facility?** (already available from your competitors)

2.3 Using the definitions above, please give the percentage of your total sales from goods and services introduced during the period 2005 to 2007.

Sales from good and services that were new to your market	%
Sales from good and services that were new to your firm , but NOT to your market	%
Sales from existing products	%
	100 %

2.4. A **process innovation** is the implementation of a new or significantly improved production process or method of providing services. *The innovation must be new to your facility, but it does not need to be new to your sector or market.*

During the period 2005-2007, did your facility introduce: *(please check if yes)*

- Any new or significantly improved process or manufacturing technology
- Any new or significantly improved logistics, delivery, or distribution method
- Other processes not covered above, such as new or significantly improved purchasing, accounting, or maintenance processes

2.5. An **organizational innovation** involves new or significant changes in firm structure, management methods, or information exchange systems.

During the period 2005-2007, did your facility engage in any of the following organizational innovation activities?

- Implement new or significantly improved management systems to better use or exchange information, knowledge and skills
- Make a major change to the organization of work, such as changes in management or departmental structure
- New or significant changes in your relations with other firms, such as alliances, partnerships, outsourcing, or subcontracting

2.6. A **marketing innovation** covers new or significant changes in your marketing methods to increase the appeal of your goods or services or enter new markets.

During the period 2005-2007, did your facility engage in any of the following activities? *(please check if yes)*

- Make significant changes to the design or packaging of a good or service (exclude routine or seasonal changes)
- New or significant changes to sales methods or distribution channels, such as Internet sales, franchising, direct sales or distribution licenses

2.7. During the period 2005-2007, did your facility engage in any of the following innovation-related activities?

(check all boxes that apply)

- In-house R&D (to increase knowledge or devise innovations, including software research)
- Purchase R&D from research organizations or other branches of your company
- Purchase machinery, equipment, computers or software to implement innovations
- Planning, engineering, design, or other development work to implement an innovation
- Purchase or license patents, inventions, know-how, or other types of knowledge to implement an innovation
- Training staff to develop or introduce innovations
- Market research, advertising, and other marketing activities linked to implementing an innovation

2.8. Please estimate your expenditures for the following innovation activities over the last 12 months. (Include personnel and related costs). *Insert zero if your facility had no expenditures in the last 12 months in these categories.*

In-house R&D (including personnel costs & capital expenditures on buildings & equipment)	\$
Acquisition of external R&D	\$
Acquisition of machinery, equipment and software (excluding R&D-related expenditures)	\$
Other development work for innovation and all other innovation-related expenditures	\$
<i>Total (sum of above 4 categories)</i>	\$

2.9. During the period 2005-2007, check if your facility

- Ever worked with customers to create or design a product, process or other innovation
- Ever worked with suppliers to create or design a product, process or other innovation
- Applied for a patent or registered an industrial design
- Registered a trademark or assumed a copyright
- Signed a confidentiality agreement
- Staff published one or more papers or technical articles (in journals or conference proceedings)

2.10. During the period 2005-2007, did your facility receive any public or private financial support for innovation activities?

- Public support (tax credits, loans, grants from the national, state, or local government)
- Private support (venture capital, angel funding, bank loans)

2.11. If you undertook any innovations in the period 2005-2007, what was the degree of impact of the innovations in each of the following areas?	Degree of Impact from Innovation			
	High	Medium	Low	Not Relevant
Increased variety of goods or services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increased market share or entered new markets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improved quality of goods or services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reduced time to respond to customer needs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improved flexibility of production or service provision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increased capacity of production or service provision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reduced labor costs per unit output	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reduced materials and energy required per unit output	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reduced environmental impacts/improved health & safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Met regulatory requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improved employee satisfaction/reduced worker turnover	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PLEASE ANSWER Q. 2.12., WHETHER YOU DID OR DID NOT UNDERTAKE INNOVATIVE ACTIVITIES

2.12. During 2005-2007, how important were the following factors in limiting your ability to innovate?

	Degree of Impact on Innovation			
	High	Medium	Low	Not experienced
Lack of qualified personnel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of information on technology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of information on markets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Difficulty finding partners	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Market dominated by established companies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Uncertain demand for innovative goods or services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
No need due to prior innovations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of funds, costs too high	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. SUSTAINABLE MANUFACTURING

Sustainable manufacturing involves minimizing use of natural resources, toxic materials, waste emissions and production materials over the life cycle of the product or part to achieve social, environmental and cost-savings benefits.

3.1. Please can you indicate whether you use or plan to use technologies or techniques to improve the sustainability of the manufacturing processes at this facility in the following areas. (Check one option for each item.)

	Use Now	Plan to use in next 2 years	No plan to use	Not applicable
Supplier selection (good sustainability performance, practice)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Selection of raw materials (lead-free, lower toxicity materials)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extraction and processing of raw materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Product design (design to reduce resource use)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Design of manufacturing processes (waste reduction)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Facility design/planning (e.g., for energy efficiency)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Packaging (reduction, reusability)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Marketing (green branding, eco labeling)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Employee training in sustainability practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Logistics, transportation services (for emission reduction)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use, reuse and maintenance of product	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
End of life (take back, recycling, disposal)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3.2. Do you use any alternative energy sources at this facility?

- No (skip to Question 3.3)
- Yes → Which of the following alternative fuels are used at your facility? (Please check all that apply)

<input type="checkbox"/> Biofuels (e.g. ethanol, biodiesel, etc)
<input type="checkbox"/> Biomass (e.g. wood or agricultural waste, byproducts)
<input type="checkbox"/> Solar power
<input type="checkbox"/> Wind power
<input type="checkbox"/> Landfill gas
<input type="checkbox"/> Other (please describe) _____

3.3. Has this facility set targets to reduce the amount of energy used by this facility?

- No (skip to Question 3.4)
- Yes → If this facility has energy use reduction targets. Please indicate targeted percentage of reduction for the following time-frames (Please estimate if necessary):

Targeted reduction for 2008	Targeted reduction for Next 2 years	Targeted reduction for Next 5 years	Targeted reduction for Next 10 years
%	%	%	%

3.4. Which of the following sustainability management activities are currently used at your facility? If not currently used, please indicate whether there are any plans for use. Check one option for each item.

	Use Now	Plan to use in next 2 years	No plan to use	Not applicable
High efficiency lighting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water recycling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Energy audits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Recycling of production materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ISO 14000 practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Life cycle costing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
US EPA or other federal program (e.g. Energy Star)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sustainability program for environmental stewardship	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3.5. Have you used any of the following sources of information and knowledge in the last two years to develop your sustainability management practices? (Check all that apply)

<input type="checkbox"/>	Internal energy or environmental manager at this facility
<input type="checkbox"/>	Other existing staff at this facility
<input type="checkbox"/>	Other units in the enterprise group – subsidiaries, branches, affiliates
<input type="checkbox"/>	Suppliers (e.g. materials, components, equipment, software)
<input type="checkbox"/>	Customers, clients or users
<input type="checkbox"/>	Competitors
<input type="checkbox"/>	External consultants
<input type="checkbox"/>	R&D labs, universities, government research organizations, public business assistance, technical or training centers
<input type="checkbox"/>	Trade associations, other business organizations
<input type="checkbox"/>	Conferences, seminars or technical meetings
<input type="checkbox"/>	Printed journals, technical papers
<input type="checkbox"/>	Online information sources

4. MANUFACTURING PRODUCTION AND PERFORMANCE

4.1. For the following questions, use approximate numbers or give an estimate. Answers can be rounded.

All estimates should be for this facility.

	2007	2005
What were your total annual sales or gross value of shipments at this plant in fiscal year 2007? In 2005?	\$	\$
Approximately how much did you spend at this location on purchased materials, parts, and services (i.e. cost of goods) in fiscal year 2007? In 2005?	\$	\$
What were your energy expenditures (e.g. heat, electricity) in fiscal year 2007? In 2005?		
Approximately how much new capital investment was made at this location, including facility, equipment, machinery, and information systems in fiscal year 2007? In 2005?	\$	\$
	2007	2005
What was the approximate percentage of your facility's sales exported outside of the United States (by value)	%	%
What was the approximate percentage of your facility's purchases of materials, parts, and services imported or acquired from sources outside of the United States (by value)	%	%

4.2. What was the approximate average annual return on sales (pre-tax) for this facility over the last 3 years? [(Gross Sales-Cost of Goods)/Gross Sales] (Circle the number closest to your facility's return on sales.)

← Negative return			Positive return →								
-25%	-15%	-9%	-6%	-3%	0%	+3%	+6%	+9%	+15%	+25%	
or more									or more		

4.3. Has any work that was formerly performed at this facility been **moved outside of Georgia** within the last 2 years? Yes No

If YES, this work was moved from Georgia to: Elsewhere in USA Mexico, other Central or South America Asia (including China, India) Europe Elsewhere in world

4.4. Has any work been **transferred back to this facility in Georgia** from outside the state within the last 2 years? Yes No

If YES, this work was transferred back to Georgia from: Elsewhere in USA Mexico, other Central or South America Asia (including China, India) Europe Elsewhere in world

4.4. Does this facility have a continuous improvement program?

- No (skip to Question 5.1)
- Yes → If you have a continuous improvement program, do you use any of the following? (check all that apply)
 - Lean manufacturing
 - Quality systems, techniques (e.g., Six Sigma)
 - Quality management (e.g., ISO 9000)

5. WORKFORCE AND TRAINING

5.1. Now, we would like to ask a few questions about your work force. If you don't know exact numbers, just give an estimate.

	2007	2005
On average, how many employees worked at this location? (Include temporary workers and convert part-time and contract labor to full-time equivalents.)	Full-Time Equivalent Employees	Full-Time Equivalent Employees
What was your total payroll at this location in fiscal year 2007? In 2005? (Please include direct payroll plus indirect fringe benefit payroll expenses. Include payments to agencies for temporary workers.)	Payroll \$	Payroll \$

5.2. On average in 2007, what percentage of your workers used

- a. A computer or programmable controller at least once a week as part of their job? %
- b. Internet at least once a week as part of their job? %

5.3. In 2007, what percentage of employees at this facility had at least the following training or educational qualification:

- a. High school graduate or GED?
 - b. Two or more years of industrial-related training, through technical college, vocational school, or apprenticeship?
 - c. Four-year college degrees (e.g. B.A., B.S.) or higher graduate degrees?
- ↳ Of these, how many majored in science, engineering or information technology?

5.4. In total, approximately how much did your company spend on all training activities in fiscal year 2007?

\$	
Of this, approximately what percentage was related to new activities and tasks (i.e. not routine training)?	%

5.5. What percentage of employees in production work are in teams (i.e. quality team, work cell)? (if none, enter zero)

%

6. BUSINESS ASSISTANCE RESOURCES

6.1. In the past 2 years, has your facility **received business assistance** from: *(Check all that apply.)*

- Georgia Tech (main campus or regional office)
- Other university (not Georgia Tech)
- Small Business Development Centers
- Technical college (Georgia Department of Technical and Adult Education, Quick Start)
- Georgia Department of Labor's recruitment, labor market information, or welfare-to-work services
- Federal laboratory, NASA, or other federal technology program
- Other public or non-profit business assistant source
- A private-sector business assistance source, such as a private consultant, vendor
- Another source not included in the above
- Facility has not received outside business assistance**

6.2. Would you or your managers be interested in receiving training or technical assistance in any of the following areas? *(Check all that apply.)*

- Product design and development
- Technology assistance
- Marketing and sales growth
- Lean manufacturing and process improvement
- Supply chain improvement
- ISO 9000, TS 16949 quality certification
- Six Sigma
- ISO 14000 environmental management certification
- Human resources, leadership development
- Safety & health, ergonomics
- Energy efficiency and management
- Materials and waste minimization
- Other topics *(please describe)*

6.3. What new training programs would you like to have available to non-managerial employees at this facility? *(Check box if your company would benefit from more training of employees in that category, but it is not currently available or provided.)*

- | | |
|---|--|
| <input type="checkbox"/> English speaking skills | <input type="checkbox"/> Quality, lean manufacturing |
| <input type="checkbox"/> Reading, writing skills | <input type="checkbox"/> Basic computer skills (e.g., keyboarding, word processing, email) |
| <input type="checkbox"/> Basic math skills | <input type="checkbox"/> Advanced computer skills (e.g., database, ERP, Web design) |
| <input type="checkbox"/> Technical skills (e.g., machinist) | <input type="checkbox"/> Other topics <i>(please describe)</i> _____ |
| <input type="checkbox"/> Product design and development | |
| <input type="checkbox"/> Marketing skills | |
| <input type="checkbox"/> Team and problem solving skills | |
-
- Check here if facility does not need/would not use

Please check this box to receive information about Georgia Tech's industrial services, seminars, and workshops.