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Manufacturers' survey: Participants' profile

By Steven Winter and Ron Cox, CIRAS, and Liesl Eathington, Department of Economics

Though long known for the contributions made by its agricultural sector, the manufacturing sector is a more vital component of Iowa's economy, making almost six times the economic impact of agriculture production. To help strengthen this critical component and to fulfill its mission, CIRAS must understand the challenges facing Iowa manufacturers and work with them to create viable solutions to the challenges of competing on a global scale.

To obtain a clearer view of the state of manufacturing in Iowa, CIRAS recently conducted a survey of manufacturing facilities to gauge their current and prospective health and use of new technologies and practices. The survey was also designed to learn how state assistance programs might be improved to better meet manufacturers' needs.

Survey distribution

Manufacturers from all subsectors and every location within the state were asked to participate. The level of support for the effort shown by manufacturers was significant, as evident by a response rate that greatly exceeded any similar activity undertaken by any other similar organization in the U.S. Over 25 percent of all Iowa manufacturers participated in this program, providing CIRAS and other state organizations with vital information, which is now being used to better align resources to meet the needs of Iowa manufacturers.

CIRAS is presenting the results of this survey in a series of articles, beginning with this one, which profiles the facilities that participated in the survey and summarizes the aggregate performance and needs identified by those participants. The second article to follow in our next newsletter will discuss the interrelated dependencies of the issues addressed in the survey, such as production and product

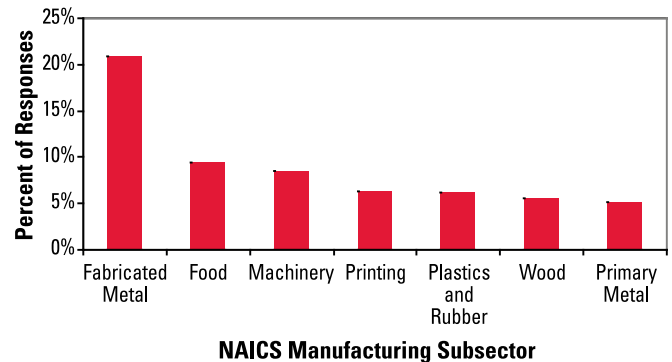


Figure 1. Top NAICS manufacturing subsectors.

innovation efforts, training needs, marketing strategies, and business practices. The third and final article will focus on how CIRAS is using this information to provide better services throughout the state now and in the future. After these articles have been published, an executive summary will be available on the CIRAS Web site for access by interested organizations.

Summary profile of participating facilities

Over 25 percent of all invited respondents, representing almost 1,000 Iowa manufacturing facilities, responded to the survey. Input was received from all manufacturing subsectors throughout the state, with the following characteristics defining the respondents:

- Combined employment of all facilities responding represented over 58,000 workers.
- Privately owned facilities outnumbered publicly traded facilities by a margin of 9 to 1.
- Eighty-five percent of facilities are headquartered in Iowa, 15 percent are located outside of Iowa, and less than 2 percent are located outside of the U.S.
- Fabricated metals, food products, and machinery were the manufactured goods most represented in the manufacturing subsectors. Figure 1 shows an expanded

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CIRAS Mission Statement

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The Center for Industrial Research and Service (CIRAS) provides education, research, and technical assistance to Iowa industry through partnerships with Iowa's universities and community colleges, government agencies, and professional associations. Assistance is supported in part by the DoC/NIST Manufacturing Extension Partnership, the DoD Procurement Technical Assistance Program, and the DoC/EDA University Center Program.

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Iowa is leader in research activities tax credit

By Jeff Rossate, Division Administrator for Business Development, Iowa Department of Economic Development

Whether the industry at hand is in biosciences, technology, or advanced manufacturing, businesses depend on their research and development efforts to achieve growth and viability. Planting a stake into new markets, expanding leadership positions, or making efforts to gain market share are largely dependent on a company's preceding efforts in research and development. And in today's highly competitive and global environment, those research and development endeavors may be the difference between whether the company survives or fails. This is one of the reasons that Iowa's research activities credit has remained a priority and comes to the forefront in today's conversations.

Iowa's research and development tax credit mirrors the federal credit for increasing research activities. Essentially, Iowa adopts the IRS Code when it comes to qualifying research expenditures. There are differences, however. The first difference is in the percentage used to calculate the credit. The federal credit equals up to 20 percent of qualified research expenditures, and Iowa's credit equals up to 6.5 percent of expenditures spent in Iowa. Iowa's research activities credit may be doubled to 13 percent of qualified expenditures when a business participates in the State's High Quality Job Creation Program or the Enterprise Zone Program. Iowa's credit has remained constant, while the federal credit has come and gone over the years.

The primary factor that sets Iowa apart in this area is that Iowa is one of only two states in the contiguous United States that offers a *refundable* research activities credit. This means that if the amount of the credit exceeds the taxpayer's Iowa tax liability, the taxpayer will receive a tax refund equal to the excess amount plus interest. This is a critical difference because every research and development decision depends on the delicate balance between the inherent financial risk and the potential profitability. In Iowa the weight of that risk is potentially mitigated with the refundable research activities credit.

Specifically, qualified research expenditures include

- wages paid to an employee engaged in qualified research at a facility in Iowa or an employee in Iowa who directly supervises or directly supports research activities
- supplies, including tangible property other than land, improvements to land, and depreciable property
- 65 percent of expenses related to research contracts, if the research is conducted in Iowa

Iowa is known nationally and globally for its history of providing the world with food, but an increasing percentage of Iowa's overall economic growth is from value-added agricultural and other products that improve our everyday lives. There is no better testament to that than to look at a list of Iowa-based companies—Pioneer, Roquette America, Kemin, Genencor, ADM, Lesaffre, Cargill, and aerospace technology and global security

Tax credits for companies

Tax credits available to Iowa manufacturers can be divided into two categories: (1) "automatic" credits, which require no pre-approval, and (2) "awarded" credits, which involve an application process. Examples of automatic and awarded credits follow. For more information, contact a tax professional. Information is also available online at www.state.ia.us/tax. Use the search mechanism at this site to find information on a specific credit, e.g., research activities credit.

Automatic Credits

- S corporation credit—Available to resident shareholders of manufacturers who are S corporations that conduct business within and without Iowa
- Research activities credit—Available to manufacturers who are eligible for the federal research activities credit
- Soy-based cutting tool oil tax credit—Available to manufacturers to transition to use soy-based cutting tool oil

Awarded Credits

- Iowa new jobs credit—Requires 260E agreement with a community college
- Investment tax credit—Requires approval from DED under either the High Quality Job Creation Program or the Enterprise Zone Program
- Wage-benefit tax credit—Must apply to Department of Revenue for credit for creating new high-paying jobs in Iowa

leader Rockwell Collins. In addition, an increasing number of technology transfer companies from Iowa's Regent universities, including BioForce Nanosciences, Inc., Integrated DNA, and VIDA Diagnostics, is creating new and innovative products.

New processes from new products

New products often require new processes. While these new products may be developed somewhere other than Iowa, if the new product is going to be produced at one of Iowa's manufacturing facilities, qualified research related to the process may occur here. This may also be the case when manufacturing facilities make improvements to their existing processes: engineers and maintenance technicians may spend a significant amount of time designing, setting up, and testing new processes, which could make these activities eligible for "qualified research" status.

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Galva Holstein gets help with capacity planning

By Bob Coacher and Tim Sullivan, CIRAS

Delayne Johnson, manager, Galva Holstein Ag (GHAg), L.L.C., of Holstein, Iowa, wanted to determine the feasibility of combining two grain mills into a single facility with increased capacity. He called CIRAS, which specializes in increasing system productivity by applying techniques from the theory of constraints and/or lean. Industrial Specialists Tim Sullivan and Jeff Mohr visited Holstein to analyze the production system and judge whether CIRAS could help. Although CIRAS usually works with manufacturers who produce discrete products, Sullivan and Mohr were confident that the same concepts could be applied to a grain mill facility.

GHAg has two grain mills—one in Galva and one in Holstein—with a combined capacity to grind approximately 400 tons of feed per day, though they were not loaded to full capacity. Johnson wondered whether the two operations could be merged in a single facility with an increased capacity of 600 tons per day. He was also interested in the feasibility and cost-effectiveness of expanding to 800 tons per day.

The project started with an analysis of the current state of the facilities, equipment, and order history as well as management's plans to combine facilities and increase capacity. The next step was to develop a proposed future state configuration for the single facility. It was absolutely critical to ensure that any recommendations would allow GHAg to maintain full customer service during the time period of the physical move and consolidation of the two facilities.

The following were identified as process variables to study prior to consolidation:

- Mixer capacity and process times
- Truck capacity and delivery cycle times
- Receiving/load-out bay capacity



Above: Delayne Johnson, manager, points to new automated ingredient wayout system being installed. Lower left: Truck capacity and delivery cycle times were two of the variables analyzed.

- Roller mill capacity
- Leg capacity
- Loading bin capacity

A flow map of the production system with detailed data for cycle times and volumes of each of the key process variables was created. Sullivan and Mohr also introduced the key concept of “takt time” or the pace of production needed to meet customer demand. According to Sullivan, “The concept of takt time was new and very useful for Delayne. Knowing how much the takt time decreased for each incremental increase in volume of feed, and comparing it to the current cycle times, made it easy to identify any current constraints and predict future constraints that would emerge at higher levels of output. This made it clear what process improvements and additional investments would likely be needed for the various parts of the production system as they progressed from current levels of output to a future target of up to 800 tons per day.”

A data table was developed to show how takt time would decrease for an additional output of 100 tons/day. The table included multiple productivity levels, showing not only their current level and the theoretical 100% level, but

also two reasonable targets for improvement between the two. This allowed GHAg to estimate the potential bottom-line impact of exploiting their current system through improved productivity before elevating their output by investing in more capacity.

The analysis identified the growth point at which a given resource would be a capacity constraint. For example, load/receive bay capacity would be a constraint at 400 tons/day. The 10-ton/hr roller mill then in use at Holstein, which provides 70% of the mix by weight, had enough capacity to produce 300 tons/day. However, if output grows, the roller mill would definitely be a constraint at 400 tons/day. If the company replaced that mill with a 24-ton/hr roller mill it already owned, output could be increased up to 800 tons/day.

This type of system analysis provided the information GHAg needed to determine where to make additional equipment and facility investments to meet their projected capacity growth.

Johnson used the information from the final CIRAS report to improve the productivity at the mill in Holstein and

then at Galva. Due to increased demand for their products, it did not make sense to combine the facilities, and both mills remain in operation today.

As a result of this project, for their last fiscal year GHAg reported that sales increased by \$1.71 million and milling services increased by \$219,000. Johnson states, "Most of the increase began after the first quarter was over, so a full year of increased productivity would have an even larger impact. We are also spending an additional \$200,000 in capital assets this year to move our capacity even higher.

"Working with Tim and Jeff provided a real educational experience, in that we learned how to analyze a system for capacity and process improvements that we can and have applied to make other production improvements," Johnson concluded.

For more information on how CIRAS can help your company with productivity improvement, contact Bob Coacher at 515-419-2162; coacher@iastate.edu, Jeff Mohr at 515-294-8534; jeffmohr@iastate.edu, or Tim Sullivan at 515-727-0656; sullytt@iastate.edu. ■

CIRAS, ISU Department of Economics receive national award

A national group recently honored CIRAS for its targeted industrial research work in southeastern Iowa. The University Economic Development Association (UEDA) presented CIRAS with its 2006 Award of Excellence in Economic Development at the group's annual meeting, held last fall in Atlanta. It was the second time in as many years that CIRAS received the award.

The project began in August 2004 to conduct research-based industrial assessments to assist Iowa's economically distressed regions. Southeast Iowa, including Louisa, Muscatine, Des Moines, Henry, and Lee counties, was the first region chosen. Between 1998 and 2002, the area lost 20 manufacturing firms and saw total employment decline by more than 4 percent.

Two members of the Department of Economics at Iowa State University—Liesl Eathington and David Swenson (left and right, respectively, in photo)—conducted the research study with funding from the Iowa Economic Development Administration University Center program at CIRAS. They developed a report in May 2005 that was distributed in the southeast Iowa region. Presentations were made in the spring and summer of 2005 to the region's economic development participants and elected representatives.

Southeast Iowa participants incorporated the research into their regional and local strategic planning processes, used the material to develop their marketing plans, and identified and prioritized their industrial targeting

activities. Iowa State staff have provided additional research and advised economic development planners on how to incorporate the research findings into their local and regional development plans.



This regional research process has been repeated for six central counties in southern Iowa, and work is being done for a region in the southwestern part of the state.

The UEDA serves the nation's institutions of higher education and their economic development affiliates. It provides advocacy, information, and a forum to enhance the performance of organizations providing business, economic development, and technical assistance to businesses and communities. The group annually recognizes projects in six areas: business development, workforce development, technology commercialization, community development, partnership development, and economic development research. The earlier Economic Development Research Award recognized CIRAS' work on the Biodiesel Feasibility Study for the MaxYield Cooperative.

For more information on UEDA's mission and scope, visit their Web site at www.universityeda.org.

Strong interest in bioeconomy leads to strong conference turnout

By Noel Holton, CIRAS

As awareness of the bioeconomy grows, so does attendance at Iowa State University's annual Biobased Industry Outlook Conference. Last year, over 600 people attended the conference. This year's event promises to draw an even larger crowd: scheduled for November 5 and 6, it coincides with a national debate for presidential candidates hosted by Iowa State.

The conference planning committee learned much from last year's event, which was entitled "Growing the Bioeconomy: Re-imagining Agriculture for National Energy Security." Farmers, venture capitalists, fuel producers, economic development professionals, bioprocessing engineers, and elected officials all convened at the Scheman Center in Ames, where they needed comfortable shoes and lots of energy to take advantage of the conference's numerous workshops, tours, and plenary sessions.

The conference got underway with a series of keynote speakers who focused on the exciting potential of biorenewable energy sources. Jason Grumet, executive director of the National Commission on Energy Policy, kicked off the conference. He spoke about the need to break U.S. dependency on foreign oil supplies. In his presentation, "Ending the Energy Stalemate: A Bipartisan Strategy to Meet America's Energy Challenges," he outlined important goals for the bioeconomy, which included diversifying energy supplies with the continued development of traditional ethanol and the accelerated investigation of cellulosic ethanol.

Following Grumet's address, Jim Breson spoke about BP's plans to invest in the renewable energy industry by partnering with a university to create an institute dedicated to research in the area of biorenewables. Breson, who is BP's general project manager, Energy Biosciences Institute, noted that BP understands how important it is for traditional oil companies to identify valuable and promising biobased technologies. BP is the world's second-largest oil company with 100,000 employees. *(Editor's note: BP has since awarded its grant to the University of California–Berkeley and the University of Illinois at Urbana-Champaign.)*

On the heels of Breson's address, Dartmouth chemistry professor Lee Lynd noted that major corporations, such as BP, and policymakers in Washington previously paid little attention to biobased energy sources. In his presentation, entitled "Biomass Energy Systems of the Future," Lynd noted that research into renewable energy has received more attention in the last 12 months than it has in all of the 24 years that he has been in the field. Lynd added that there previously was a "limited sense of urgency" where energy matters were concerned and that "few anticipated



Roger VanErsvelde, agricultural producer from Brooklyn, Iowa, and member of Creative Horizons of Iowa, describes commercial uses for kenaf fibers during a field tour at the 2006 "Growing the Bioeconomy" conference.

more than a modest biofuel contribution" to the energy sector. Now, however, concern about greenhouse gas emissions and dependence on oil is widespread and has led to an intense interest in biomass.

In addition to the presentations, participants were able to attend small breakout sessions on topics ranging from cutting-edge research in bioprocessing technologies to ways to get small biobased businesses off of the ground. They also had a chance to hear what former Iowa Governor Tom Vilsack, Iowa Congressman Leonard Boswell, Iowa State University President Gregory Geoffroy, and gubernatorial candidates Chet Culver and Jim Nussle had to say about the importance of the bioeconomy. *(Editor's note: Culver later won the Iowa governor's race.)* All spoke at a dinner event that featured the announcement of Iowa's commitment to the national, non-partisan 25 x 25 initiative that aims to produce 25 percent of the country's energy from renewable resources by the year 2025.

The dynamic pace of the conference, held last summer, continued on the second day with a tour of Iowa State University's agronomy farms and an "Ethanol and Co-Products" tour to the Lincolnway Ethanol Plant, the Iowa Energy Center/Biomass Energy Conversion (BECON) Facility, and the Bill Couser Family Farm. Alternatives to the tour were demonstration workshops, one of which featured the "recipe" for making biodiesel and another that featured a tutorial of the I-FARM computer-based farm modeling system that analyzes how harvesting energy crops and residues can impact soil fertility and conservation.

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Materials assistance for Iowa manufacturers

By Robert Mills, Communications Specialist, IPRT

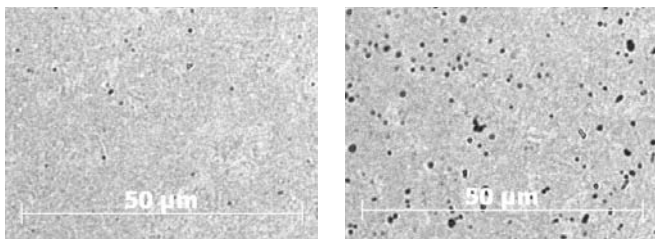
At its core, manufacturing is the manipulation of materials, so when materials problems arise, they can bring production to a screeching halt. Fortunately, experts from the Institute for Physical Research and Technology Company Assistance stand ready to help, using their knowledge and experience to solve materials problems and get manufacturing back up and running. As part of Iowa State University, IPRT works closely with CIRAS to address the needs of Iowa companies.

As good as sliced bread

IPRT materials experts are often called on by companies that have particularly thorny problems. Hansaloy Corporation, Davenport, Iowa, is one example. The company makes steel blades for the baking industry, where they are used to slice bread at 80 loaves per minute. Hansaloy, however, was experiencing problems with some of its blades breaking in the field. That was bad news for Hansaloy's customers, since production would stop and all of the pieces of metal would have to be found.

The company knew the broken blades were being made from the steel from one particular supplier, but could not determine what caused that material to break since it met required hardness specifications. So Steve Wright, Hansaloy president, contacted IPRT Company Assistance and sent three samples of stock steel from different suppliers to Paul Berge, an IPRT metallurgist. Berge first consulted with John Verhoeven, distinguished emeritus professor of materials science and engineering at Iowa State and an expert in steel. The two concluded that the problem probably involved the heat treating of the steel.

Even so, it can be difficult to determine if steel has been properly heat treated. Berge, however, applied a technique he learned during graduate school. Using a special etchant, Berge was able to make the cementite carbide particles of



IPRT Company Assistance helped Hansaloy Corporation of Davenport, Iowa, solve a problem with the steel it uses to make bread-cutting blades. These two micrographs show the heat-treated structures of good (left) and bad (right) blades after etching with a carbide (cementite)-staining etchant. The cementite particles appear black. The bad blade shows a larger population of coarser particles. This comparison indicated that the bad steel, although equal in hardness to the good steel, was inadequately heated, making it more brittle as an end result.

About IPRT Company Assistance

IPRT's materials experts are part of IPRT Company Assistance, which provides access to world-class expertise and equipment to help Iowa manufacturers and entrepreneurs address technical problems and R&D needs. IPRT is a network of scientific research centers at Iowa State University and has been assisting companies from all corners of Iowa since 1987. Each year IPRT helps about 200 companies—from one-person start-ups to Fortune 500 corporations—solve scientific and engineering problems.

Since 1993, metallurgists in IPRT's materials assistance group have worked to solve the materials problems of Iowa companies. With a staff dedicated to working with Iowa companies, the group completes over 50 projects each year, many in concert with CIRAS. IPRT's materials scientists provide short-term assistance—up to 40 hours—on nonroutine materials problems.

the steel jump out under the microscope. "The problematic steel had relatively coarse cementite particles all over," Berge says. These cementite particles were not getting dissolved into the steel during heat treatment, making it hard but too brittle. Berge also found a big difference between this steel and that of the other suppliers. "That told us there was a fundamental difference in how the material was being heat treated."

Hansaloy looked to its supplier for a resolution. To aid Hansaloy, Berge produced a written report discussing the microstructure of the problematic steel in comparison with the other suppliers' steels and the heat treatment process's potential effect on brittleness. The supplier reworked the steel, and samples were sent to IPRT to verify the reduction of both the number and size of the carbides.

Wright is appreciative of the assistance. "Paul understood exactly what we needed the first time we talked," he says. "The answer was not obvious, but he accomplished the work and gave us his report very quickly." He estimates that the problem cost his company \$250,000 in lost sales last year. "Had it gone on, the loss would have been much greater," Wright says. He adds that the effort will prevent future occurrences of this type of failure, resulting in great savings for Hansaloy and its customers in the future.

Understanding material specs

Standard Bearing, Inc., Des Moines, is a distributor of power transmission products and a solution provider to original equipment manufacturers throughout the U.S. and several foreign countries. Thanks in part to help from IPRT Company Assistance, the company has landed a good-sized order from a new account with more that may follow, according to John Munson, general manager at the company.

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distribution of the top contributing subsectors by NAICS grouping.

- Ninety-eight of Iowa's 99 counties were represented; more than half of the facilities are located outside of Iowa's metropolitan counties.
- Facilities employing fewer than 20 workers constituted a slight majority; one-third of respondents employ 20 to 99 employees.
- Various years of service were represented. Several reported being in operation 100 years or more, while others have operated for less than one year. Facilities launched since 1980 slightly outnumbered more established facilities.

General performance and operating characteristics

The following is a 24-month snapshot of the aggregate performance characteristics of the respondents' business activities. Some notable comparisons between facility classifications are also given.

- Annual gross total sales increased 25 percent. Facilities with more than 50 employees experienced an increase almost double that of facilities with fewer than 50 employees.
- Annual return on total sales increased 20 percent. Facilities with over 50 employees experienced an increase almost two to three times greater than facilities with less than 50 employees.
- Manufacturing facilities spent an average of 40 percent of total sales on the material inputs for the products they produced. Across all industries, the majority of facility responses ranged from a low of 35 percent to a high of 50 percent.
- Seventy percent of the full-time equivalent employees for an average facility are associated with product production.
- Manufacturers anticipated spending up to 10 percent of the current fiscal year's total sales on capital equipment investment. Across industries, this average ranged from a low of less than 5 percent to a high of almost 20 percent.
- More than half reported an increase in employment during the previous 24 months, with an average increase of 10 percent.
- Manufacturers offered each employee, on average, more than 35 hours of annual training.

Business strategies and process/product innovation efforts

The survey included questions regarding the innovation and business strategies undertaken by manufacturers. According to responses, the top three strategic initiatives pursued by manufacturers were: (1) changes to corporate strategies; (2) training of employees in innovation or new activities; and (3) management techniques. A summary of the total responses to the complete list is shown in Figure 2. Many facilities experienced multiple changes.

Manufacturers were asked to indicate the market strategies they used for the products they produced. The top three

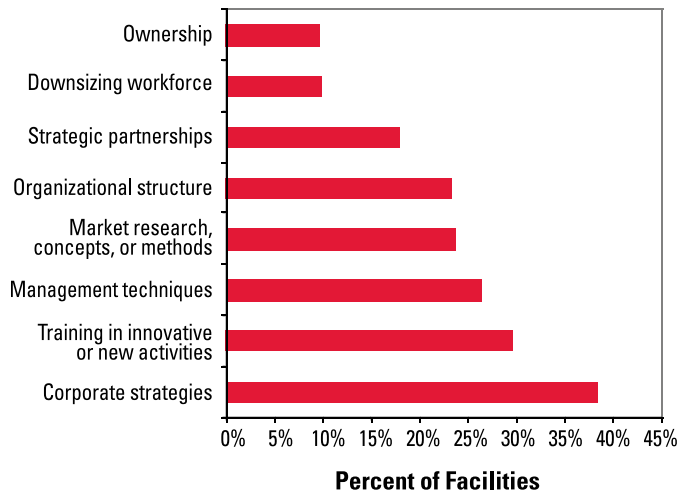


Figure 2. Major business change undertaken during the past 24 months.

strategies were: (1) high quality; (2) quick order delivery; and (3) added value through customer service. The complete list and weighting of responses is shown in Figure 3.

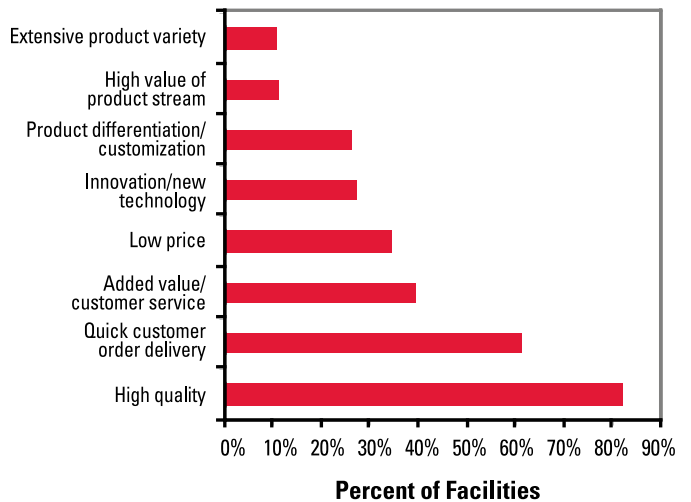


Figure 3. Top product market strategies.

Manufacturers were also asked about innovative efforts undertaken at their locations over the past 24 months. The top three areas in each category were given as:

- General facilities
 1. Improving the quality of products or services
 2. Increasing the capacity of production or service offerings
 3. Reducing the time to respond to customer needs
- Operation
 1. Production
 2. Customer relations
 3. Material and energy management

Eighty percent of facilities reported that they develop the products produced at their locations. According to these manufacturers, the following factors had the greatest

impact on inhibiting product development:

- Uncertain customer demand for innovative products or services
- Insufficient sales to support new product/process development
- Lack of financial capital

Near-term manufacturing sector needs

Manufacturers identified several initiatives that will be important to them over the next 24 months. These included their perceived value of actions being considered by the Iowa legislature that could benefit their operations. The highest responses were expressed for the following:

- Simplifying regulatory compliance procedures
- Increasing capacity for community college worker training programs
- Improving primary and secondary education

Other responses with significant interest are shown in Figure 4.

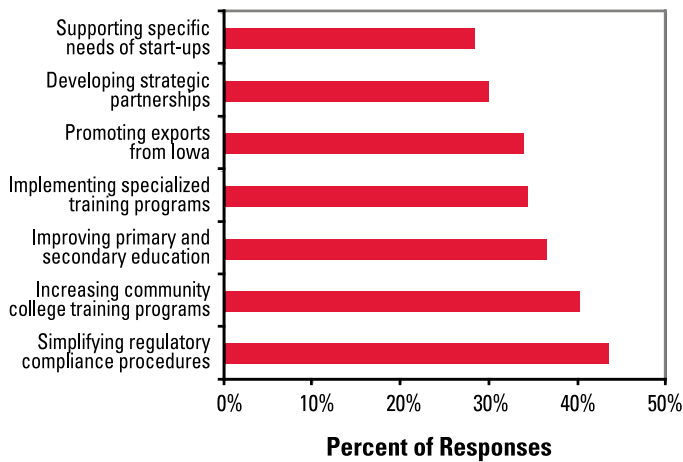


Figure 4. State initiatives with greatest interest.

When asked to indicate product and production-related initiatives and training needs that will be of the greatest importance to their operations, manufacturers noted the following:

- Management skills, team-based improvement, problem-solving
- Advanced employee technical skills (e.g., quality control, preventive maintenance)
- Safety, health, and ergonomics

Other responses with significant interest are shown in Figure 5.

The quality initiatives that will be the greatest concerns to manufacturers over the next 24 months are shown in Figure 6.

Additional survey analysis

The information presented in this article summarizes the results of a survey conducted by CIRAS in 2006 to

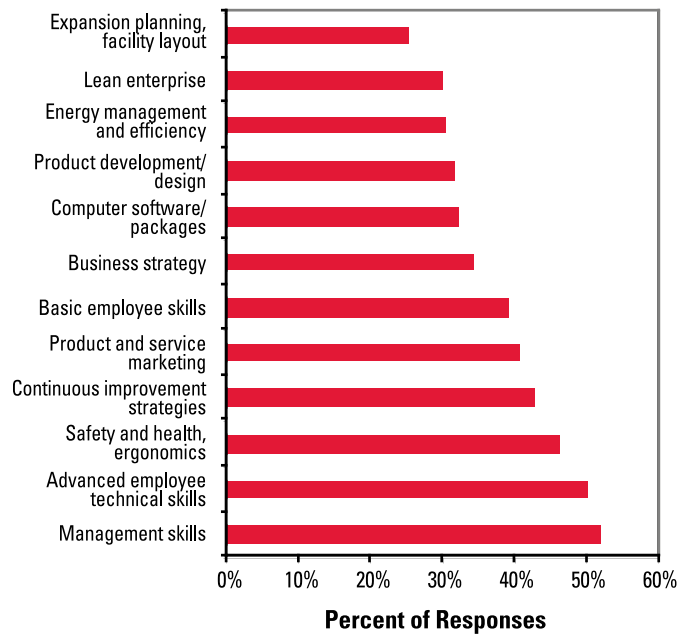


Figure 5. Top training needs.

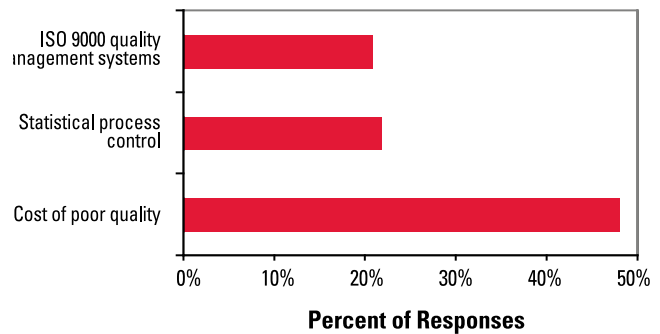


Figure 6. Top quality initiatives.

obtain a greater understanding of the state of business for Iowa manufacturers. The conclusions drawn from these results are providing CIRAS and other state organizations with essential insight into the needs and priorities of manufacturers as they compete in today's marketplace.

In the next two CIRAS newsletters, additional articles will provide a deeper analysis of the survey results. These articles will focus on identifying the trends and interactions of the activities and strategies of manufacturers while presenting the end effect on business performance.

On behalf of all organizations that are benefiting from the information gathered from this survey, CIRAS would like to thank all Iowa manufacturers for the tremendous response received for this work.

For more information on the manufacturers' survey, please contact Steven Winter at 641-613-3297; sjwinter@iastate.edu.

Iowa leads in tax credits

Continued from page 3

These research activities credits make a huge impact on the businesses themselves and the overall state economy.

An extra incentive for renewable energy

It's no secret that reducing dependency on crude oil is an important issue to all industrialized nations. As a result, we are seeing unprecedented growth in renewable fuel capacity in Iowa. Based on U.S. national figures, Iowa is ranked first in ethanol production capacity, first in biodiesel production, and third in wind power production. In Iowa, companies developing and deploying innovative renewable energy generation components that are manufactured or assembled in the state can also take advantage of the research activities credit.

To qualify for the 6.5 percent credit, a renewable energy company must be participating in the state's High Quality Job Creation Program or the Enterprise Zone Program. A renewable energy generation component is considered innovative as long as no more than 200 megawatts of installed effective nameplate capacity has been achieved.

For more information on Iowa's research activities credit or to determine if your company's activities and expenditures qualify, please contact your tax adviser. ■

"Growing the Bioeconomy" conference

Continued from page 6

The final keynote address focused on the significant potential of the biobased market. Vinod Khosla, co-founder of Sun Microsystems and a partner at Silicon Valley venture-capital firm Kleiner Perkins, famous for its early investments in AOL, Amazon, Compaq, and Google, told the crowd that biofuels can be produced inexpensively and without a lot of government intervention. He also believes they can be introduced without significant cost to automakers. In addition to seeing the financial incentives involved in advancing the bioeconomy, Khosla said that he is moved to invest in biofuels because of the benefits their use will have on rural development, not only in the United States, but also in rural areas all over the world, including his native country of India.

The conference then ended with a plenary session entitled "Capitalization Strategies for the Bioeconomy." Speakers Bob Egerton, the commercial agribusiness division manager at CoBank; Tom Dorr, the undersecretary for rural development; and Willis Hanson, with the Iowa Bankers Association, addressed important issues related to the anticipated economic changes in the agricultural sector. They each stressed the significant impact that investors can have on the development of biobased industry.

For more information about the 2006 Biobased Industry Outlook Conference and to view some of the presentations, please visit the conference Web site at www.bioeconomyconference.org. ■

Materials assistance

Continued from page 7

As do other suppliers, Standard Bearing purchases a portion of its materials from the international market to get the best prices, and that sometimes means buying from Chinese manufacturers. The problem is that materials standards in China are different from those in the U.S., according to IPRT's Berge. "Manufacturers want to know how to go from their material specifications to an equivalent Chinese grade," he says.

Berge uses a computer database of materials to gather information about various materials from around the world, but it's really his expertise in interpreting the information that helps Iowa companies like Standard Bearings. "It's not as simple as comparing specifications," Berge explains. He studies the various standards and makes recommendations on which materials would best suit the company's needs. Munson appreciates Berge's assistance. "I don't know what we would have done if not for Paul," he says.

Berge also connected Standard Bearing up with Shana Smith, a professor of agricultural and biosystems engineering at Iowa State University who speaks fluent Mandarin Chinese. Via conference calls with Standard Bearing's Chinese suppliers, Smith helped the company clear up some issues over drawing interpretation.

For more information on how IPRT can help solve materials problems, contact IPRT Company Assistance toll free at 877-251-6520 or iprtinfo@iastate.edu, or visit the Web at www.iprt.iastate.edu/assistance. ■

ANSI/ISO/ASQ 9001:2000 Internal Auditor Training

April 17-19, 2007 • 8 a.m.-5 p.m. each day
\$595.00 per person

*Class location: Comfort Suites at Living History Farms,
Urbandale, Iowa.*

Class Course content will focus on how to audit according to ANSI/ISO/ASQ QE19011S-2004, *Guidelines for Quality and/or Environmental Management Systems Auditing*. The course will cover conducting process audits, tools, techniques, and audit protocol to use for successful audits, as well as principles of ISO 9001:2000. The last day of class is an off-site audit to practice the skills learned during the class. Prior experience with a quality management system is not required for this class.

Who should attend? Anyone interested in learning how to be an ISO 9001:2000 internal auditor or anyone who is to implement an ISO 9001:2000 system should attend.

Interested in attending? Please contact registration coordinator Jenny Felt at 515-278-8002 or feltj@validussservices.com.

BioPreferred expanding federal markets

By Steven Devlin, CIRAS

2006 was a year of explosive growth for the bioeconomy. Throughout the state and across the country, interest in products, power, and fuels developed from renewable resources continued to receive widespread attention. The USDA BioPreferred™ project, one of several CIRAS efforts to provide education and support to the biobased industry, achieved numerous milestones in 2006, opening up new opportunities for business and industry.

In March, the USDA released a final rule designating the first six items to receive preferred procurement status under the BioPreferred™ program. Federal agencies have up to a year from the final release date to evaluate their purchases of penetrating oils, roof coatings, diesel fuel additives, mobile equipment hydraulic fluids, water tank coatings, and bedding, bed linens, and towels. Identified manufacturers and distributors of biobased products in these categories are now allowed to post their product and company information to the BioPreferred™ online catalog at <http://www.usda.gov/biobased>.

An interim final rule was released in August modifying the program guidelines. Changes included expanding the reach of the program to include the U.S. capital buildings and service contractors as required by the 2005 Energy Policy Act. In addition, the USDA and the U.S Trade Representative have agreed to revise the interpretation of “domestic content,” originally included in the program guidelines, to include countries that are signatories on free trade agreements with the United States. These improvements open up significant opportunities for biobased companies in the janitorial and building maintenance areas while increasing the pool of available biobased products for possible use by the federal government.

Three BioPreferred™ proposed rules to designate items for preferred procurement were posted to the *Federal Register* in August and October. Public comments were accepted

through the Federal eRulemaking Portal, <http://www.regulations.gov>, and both by e-mail (fb4p@oce.usda.gov) and traditional mail services. These rules identify 30 additional categories and increase the number of products qualifying for preferred status to over 2,000. The USDA is in the process of reviewing the comments and questions submitted and expects to release final rules for these items early in 2007.

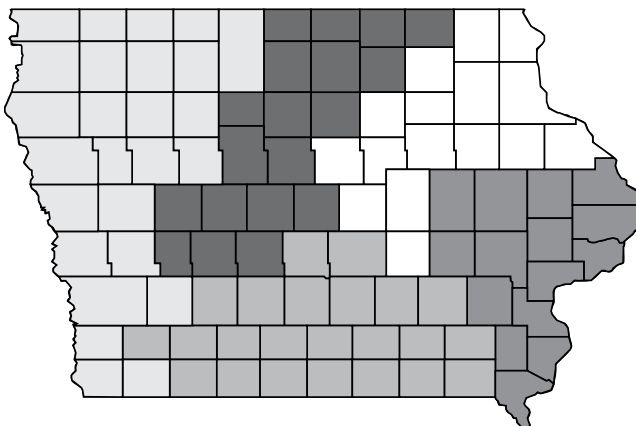
October brought significant changes to the overall look and feel of the BioPreferred™ program. At the renewable energy conference in St. Louis, USDA Chief Economist Dr. Keith Collins and USDA Assistant Secretary for Administration Boyd Rutherford discussed a new effort to increase program market penetration by replacing the Federal Biobased Products Preferred Procurement Program (FB4P) designation with the term BioPreferred™. USDA officials expect the name change to improve customer awareness both in the federal government and with the general public. Along with the name change, a new program Web site and electronic information system were released to provide improved user functionality and information security.




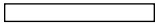

For the BioPreferred™ program, 2007 promises to be another exciting year. With two additional rules in the draft-clearance process and three more in development, the number of biobased products is rapidly growing. Plans for the USDA Certified Biobased Product labeling program are moving forward, and efforts to identify and document early adopter experiences are continuing. Now in the fifth year of a cooperative agreement with the USDA Office of Energy Policy and New Uses, CIRAS personnel continue to work with manufacturers, federal agencies, and industry groups to support the BioPreferred™ program.

For more information on BioPreferred and how your business can participate, contact Steven Devlin at 641-613-3297; sdevlin@iastate.edu, or Jessica Riedl at 515-294-5416; jesriedl@iastate.edu.

Account territories

Account managers provide initial manufacturing needs assessments and also explore and match resources to client needs. The state of Iowa has been divided into five account managers' territories. Their contact information follows.



- North Central** 
Derek Thompson, thompson@iastate.edu, 515-419-2163
- South Central** 
Joseph Papp, jpapp@iastate.edu, 515-231-1452
- Southeast** 
Paul Gormley, gormley@iastate.edu, 319-721-5357
- Northeast** 
Ruth Wilcox, rwilcox@iastate.edu, 515-290-1134
- Western** 
Bob Coacher, coacher@iastate.edu, 515-419-2162

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WebWatch: Engineering

There are several benefits to implementing engineering practices in your organization. For example, engineering principles can help improve product performance, quality, and reliability; reduce costs; shorten design cycles; and improve customer satisfaction.

The engineering team at CIRAS can help improve the manufacturing and product development efforts of Iowa companies by providing access to Iowa State's engineering knowledge. Specifically, CIRAS staff can provide assistance in these areas: cranes/monorails, finite element analysis, materials, noise control, nondestructive evaluation, product design, and product testing.

More information on each area is available online at www.ciras.iastate.edu. Click on the "engineering" link.

Focus: Engineering

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Contact us
515-294-3420
ciras.info@iastate.edu

Engineering is the application of scientific and mathematical principles to practical ends. It involves the design, manufacture, and operation of efficient and economical structures, machines, processes, and systems.

Implementing engineering practices in your organization can:

- improve product performance, quality, and reliability
- reduce costs
- shorten design cycles
- improve customer satisfaction

The mission of the CIRAS Engineering Team is to improve the manufacturing and product development efforts of Iowa companies by providing access to Iowa State's engineering knowledge.

CIRAS staff can provide assistance in the following areas:

- Cranes/Monorails
- Electronic Design
- Finite Element Analysis
- Industrial Ventilation
- Materials
- Noise Control
- Nondestructive Eval
- Plant Layout Simulation
- Product Design
- Product Testing

See in-depth information and related links.

The Center for Industrial Research and Service (CIRAS) provides education, research, and technical assistance to Iowa industry through partnerships with Iowa's universities and community colleges, government agencies, and professional associations. Assistance is supported in part by the DoC/IBET Manufacturing Extension Partnership, the DoD Procurement Technical Assistance Program, and the DoC/IDA University Center Program.

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CIRAS News is published quarterly by the Center for Industrial Research and Service and edited by the CIRAS publications team. Design and production is by Engineering Communications and Marketing, Iowa State University. Contact John Van Engelenhoven at 515-294-4475 or jve@iastate.edu with questions and comments regarding the newsletter.

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