

**MINNESOTA STATE COLLEGES AND UNIVERSITIES
BOARD OF TRUSTEES**

Agenda Item Summary Sheet

Committee: Academic and Student Affairs

Date of Meeting: March 18, 2009

Agenda Item: Workforce of the Future: Leadership Reaches Out to Business

Proposed
Policy Change

Approvals
Required by
Policy

Other
Approvals

Monitoring

Information

Cite policy requirement, or explain why item is on the Board agenda:

This report of the system's leadership business visits will provide background information for the Board of Trustees as they consider the FY10 Action Plan and future strategic plans.

Scheduled Presenter(s):

Linda L. Baer, Senior Vice Chancellor for Academic and Student Affairs

Outline of Key Points/Policy Issues:

Based on visits to over 350 Minnesota business leaders by the system's 32 presidents, chancellor, senior vice chancellor and three vice chancellors, this report provides an overview of what companies report as their competitive advantage and the system's role in enhancing the prosperity of the state's economy through education and training.

**BOARD OF TRUSTEES
MINNESOTA STATE COLLEGES AND UNIVERSITIES**

INFORMATION ITEM

WORKFORCE OF THE FUTURE: LEADERSHIP REACHES OUT TO BUSINESS

BACKGROUND

Leadership Reaches Out to Business is one of four initiatives of *Workforce of the Future*, a part of the FY09 Action Plan for the system. A report of the leadership business visits is attached. A brief update on the four initiatives of *Workforce of the Future* in FY09 is provided below:

1. Leadership Reaches Out to Business

From July 2008 to January 2009, Minnesota State college and university presidents and other system leaders each conducted high-level visits on behalf of the system to ten or more private sector companies in Minnesota to learn about their competitive advantage and the system's role in enhancing the prosperity of the state's citizens through education and training. A report of these visits is attached.

2. Business Response System

A 1-800 telephone number for business inquiries and requests for training was implemented as part of the Online Support Center in Perham, Minnesota. Supported by a new Web presence, operators in the call center provide both telephone and on-line support, a frequently-asked-question site, access to 32 college and university business and industry outreach offices and promotion of the system's programs and centers of excellence.

3. Connecting with Business – Public Relations

The new business publication "Open for Business: Your Guide to Training, Education and Business Services" was published in November, 2008. Distribution included "bundling" the brochure with two magazines *Minnesota Business* and *Twin Cities Business Monthly*; mailings to members of the State Chamber of Commerce and state human resource directors; and ads in *Enterprise Minnesota* and other magazines.

4. Leveraging Partnerships and Promoting Innovation

Funded by the McKnight Foundation, this project is a partnership with the Greater Metropolitan Workforce Council, the Metro Alliance for Customized and Continuing Education (MACCE) and the Office of the Chancellor to deepen manufacturing industry employers' understanding of the programs, coursework, certifications and services available to them and their employees.



Workforce of the Future: Leadership Reaches Out to Business



Minnesota
STATE COLLEGES
& UNIVERSITIES

Office of the Chancellor

Draft March 4, 2009

"There are four levels of an excellent employee - becoming 'product knowledge giant' to becoming a 'doctor of human relations' to a 'master innovator' to a 'minute miser'.

Employees learn early on to ask and answer, 'What does good look like?' Employee satisfaction comes from understanding their impact on the company and the ownership in their jobs."

Manufacturing business leader

Leadership Reaches Out to Business

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Leadership Reaches Out to Business

From July 2008 to January 2009, Minnesota State College and Universities System presidents and other system leaders each conducted high-level visits to ten or more private sector companies in Minnesota to learn about their competitive advantage and the system's role in enhancing the prosperity of the state's citizens through education and training.

The purpose of these visits to business was to consider the following:

- Extend the outreach of the system's institutions to understand both economic and workforce needs of the state's employers;
- Provide responsive education programs, services, applied research and customized training solutions statewide to meet these needs;
- Create a synergy between college or university leaders and business leaders in the region and state; and
- Standardize a methodology to transcribe and interpret input from business leaders for future systemwide planning and initiatives.

What did we hope to learn by reaching out to businesses? Why does higher education need to understand the competitive advantage of Minnesota businesses? Simply put, competitive advantage is how a firm generates greater sales or profit margins or retains more customers than its competition. There can be many types of competitive advantage, including a firm's cost structure, product offerings, distribution network and customer support. In Minnesota, education and training have been identified as one of the *key drivers* of competitive advantage. With industries changing so quickly, higher education's partnership with Minnesota businesses requires constant attention and coordinated action.

Leadership Reaches Out to Business is one of four initiatives that comprise "Workforce of the Future," an initiative of the system's 2009 Action Plan. This report provides information on the major themes, secondary themes and recommendations which emerged from interviews with 352 Minnesota business leaders in fall 2008. Employers were asked to address the following questions during each visit:

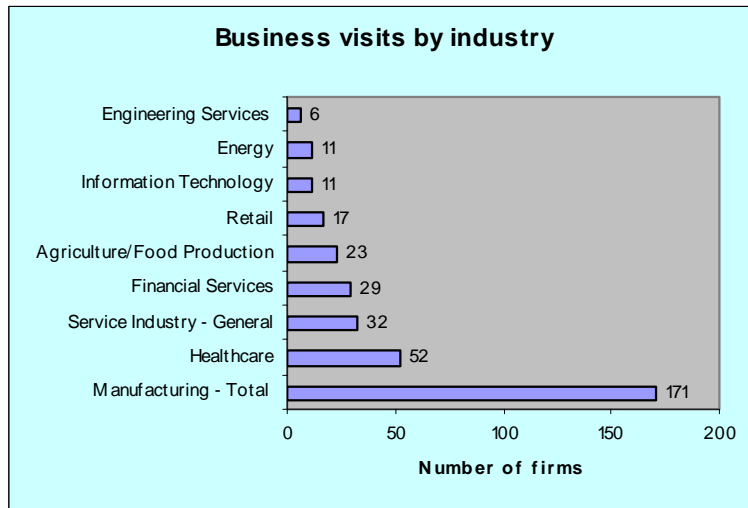
1. *What niche of the industry is your company in? What do you think contributes to your company's success or strengths? What competitive advantage do you have over other firms in this industry?*
2. *Why is your firm located in Minnesota or this region in particular? Are there ways we can help you grow in this area or do you see barriers to growth?*
3. *What skills are you seeking in the people you hire? Are there skills current employees need to develop?*
4. *What will your business look like in 2020? Can you anticipate what skills employees will need in the future? What can the Minnesota State Colleges and Universities system do to support you?*

Research Findings

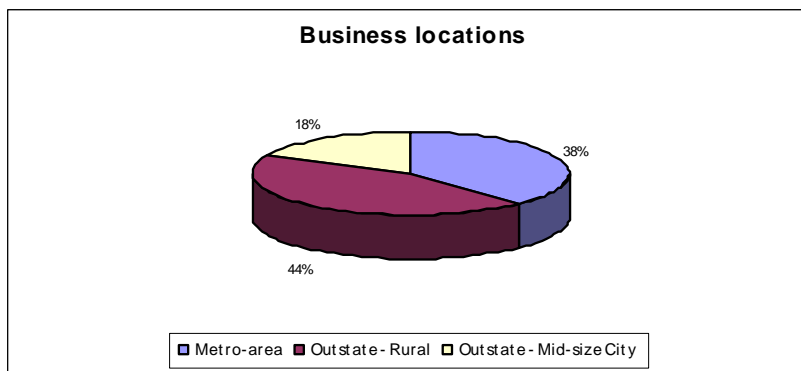
A qualitative analysis of interview data was conducted whereby researchers synthesized business leader responses to questions about company strengths and competitive advantage, the value of a Minnesota location, barriers to growth, and skills and competencies of the current and future workforce.

Quantitative data reflect the number of times a theme was noted in the 352 interviews as reported by system office or institutional leaders. Information in quotation marks reflects statements from business leaders as reported by college and university administrators who participated in the visits and are not direct quotes from individual interviewees.

352 business leader interviews representing a cross-section of Minnesota industries are identified below. The views of a select number of organized labor and government leaders are reflected in this report.



Most of the visits (62 percent) were conducted in businesses located in outstate Minnesota, either in rural locations or mid-sized cities. The remaining visits were in the Twin Cities metro-area. These locations reflect the geographic distribution of the colleges and universities in the state.



Section 1 - Company Strengths and Competitive Advantages

Business leaders were asked to identify what contributes to their companies' strengths as well as what they view their competitive advantage to be over other firms in the industry.

Three main themes emerged:

- Business-specific indicators;
- Intellectual capital of the workforce; and
- Customer-focused products and services.

Business-specific indicators included comments from leaders that were specific to their companies. Examples of company strengths included quality-certified products or services, company location, financial security, company investment in technology, research and development, the operational efficiency of the company, and the length of time in business.

Business leaders frequently talked about the **intellectual capital of the workforce** as a key to their competitive advantage. Innovation, entrepreneurial spirit, creativity and flexible thinking were cited as strengths in their workforce. Company leaders also talked about their focus on "talent development" and the competitive advantage created by having a technologically competent workforce.

"Our success lies with the great skills of our people. The values and attitudes are so important that in the future we will hire for attitude and train for skills." (energy company)

Customer-focused products and services included comments about service-orientation for the customer and the customization of products. When describing competitive advantage, relationship-building and long-term relationships with customers were common themes shared by the business leaders. "We have built our business on a culture of 'customer intimacy' and team-oriented entrepreneurship." (manufacturing company)



"Innovation is an on-going effort of the company and the capacity to solve customer problems is a key aspect of the company's **competitive advantage.**" (international manufacturing company)

Section 2 – Value of Minnesota Location

When business leaders were asked why their business was located in Minnesota, the following three main themes emerged from the data:

- Connections to the region or state;
- Availability of an educated and skilled workforce; and
- Quality of life.



“We consider the community to be an excellent place to raise a family.”

When sharing information on why their company is located in Minnesota, the most common responses were the company selected their current location based on the knowledge of the employees who live in the region; the company’s founder is originally from the area; and the company ownership liked the locale. Leaders often spoke of valuing work-ethic and appreciating access to higher education.

“Why Minnesota? People have a good work ethic, strong educational background and support, and are hard-working.” (manufacturing company)

Section 3 – Barriers to Growth

Business leaders overwhelmingly identified the **lack of availability of an educated and skilled workforce** as the primary barrier to growth. Manufacturing companies specifically noted the shortage of qualified employees with skills in blueprint reading, computerized numerical control manufacturing, welding and basic math. Healthcare companies shared concerns about shortages of employees in critical fields such as primary care physicians, nurses and technicians.

Common themes that emerged as barriers to growth included difficulty in attracting qualified engineers (both mechanical and electrical); the need for stronger business analyst skills in information technology employees; and the need to hire people with quality management knowledge and experience.

A concern was expressed with the need to educate current and future employees for a future we are unable to determine. This concern challenges higher education to become more nimble and responsive to the future needs of business and industry.

“It is difficult to find a qualified, technological workforce, especially engineers.”
(manufacturing company)

Section 4 – Skills and Competencies for the Future

When asked about the skills employers seek in new employees, three themes emerged. Business leaders spoke overwhelmingly of the need for:

- technology skills;
- business-critical “soft” skills; and
- skills that reflect changes resulting from emerging business practices, such as using “green” products and responding to global competition.

Most employers were not able to distinguish between a need for these skills *now* compared with the *future* (2020) other than to indicate that these skills are important to their company’s future success and that over time such skills will become increasingly valuable in spite of the recent downturn in the economy.

Theme 1: Advances in technology

While business leaders occasionally mentioned computer literacy, they more frequently emphasized that personal computing is only the beginning of a life-long continuum of technology learning for students and workers. Business leaders reported that work environments increasingly will rely on technology for manufacturing processes using robotics and automation, medical record keeping, managing financial systems, customer marketing and sales through e-commerce, agricultural production and new construction methods using “green” materials. Individuals with the skills to manage IT infrastructure in a business environment are and will continue to be in particular demand.

Focus on manufacturing:

With one-half of the visits conducted with manufacturing and engineering firms, many business leaders described their employment needs in terms of specific occupations – welders, fluid power mechanics, electronic technicians, computer numerical controlled (CNC) machinists, designers, fabricators, maintenance – in addition to specific technical skills, such as drafting, blue print reading, computer-aided design, test measurement, manufacturing costing, statistical process control and other manufacturing skills.

The clear message from nearly every manufacturer was the need for a more highly skilled technical workforce. Employers did not report a need for “general laborers.” Instead, they consistently reported a need for “a broad level of technical understanding,” “technical literacy to perform quality,” “a qualified, technological workforce,” “comprehensive technical skills,” and “employees [who] will be able to leverage technology.” More than 50 manufacturing employers specifically mentioned the need for employees trained in automated systems and robotic controls.

In addition to identifying the need for engineers in specialized fields such as metallurgy, industrial design, civil or field, software, chemical, electronic systems and mechanical, business leaders also described skills that are particularly useful in today’s environment.

Among the skills mentioned were project management, quality control, testing, systems knowledge, design and innovation.

In the fields of engineering and design, the following quotes reflect the views of many business leaders who must compete in today's manufacturing market:

"We hire about 30 college graduates a year, mostly engineers. About half of our managers are civil engineers. But our business is based more on the relationships we build than on the specialized engineering knowledge of our engineers. We are more interested in soft skills or people skills. Our engineers do not do specialized engineering work. We outsource that. We want engineers who are extroverted and can engage people - fundamentally, people who are energized by talking with others, not people who are drained by it."

"We need people with intellectual curiosity who can think out-of-the box. The engineers we hire have to be able to innovate because each new product application brings new challenges that have to be overcome. We don't produce thousands of a standard product rather each one is uniquely different and serves a unique application so our engineering staff really has to have the desire to push the envelope of technology. There is no status quo here at our company."

Theme 2: Business critical "soft" skills

Business leaders are redefining "soft skills." Employers describe the importance of high-level skills involving customer relations, innovation, flexibility, adaptability and teamwork as vital to the future of their businesses.

Customer relations: Employers described numerous skills needed to work effectively with customers: responsiveness; willingness and ability to solve problems (customer empathy); ability to build relationships; communication skills; sales experience (knowledge of the company's products); integrity, honesty and trust; conflict resolution skills; and creativity in working with customers and their needs.

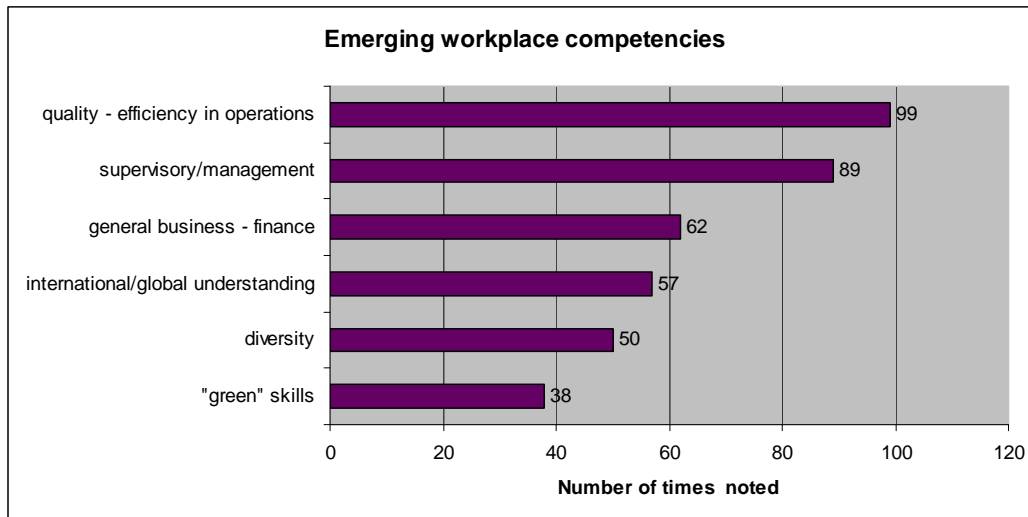
Innovation and creativity: Employers speak about innovation and creativity in terms of: product development; continuous improvement of processes; new models of [health] care; integration of [information] technology; understanding areas outside of one's professional discipline; and research and development as critical to their business.

Flexibility and adaptability: Closely related to innovation, employers underscored the importance of "learning agility" – the willingness to learn and keep up with change; being "energized by change and transformation"; and the flexibility to adapt and maintain an "entrepreneurial edge."

Teamwork: This skill was described by employers in three ways: leadership in building "team-orientation" for company success; project management skills; and interpersonal skills to be effective in a collaborative work environment.

Theme 3: Emerging workplace competencies

Today's workplace involves new areas of knowledge for many employees. Business leaders cite a need for employees who have management and leadership skills, understand fundamental business principles in finance and accounting, can implement "lean" or quality improvement processes and understand the importance of the global market. The following chart illustrates the number of times these skills were mentioned during visits with business leaders:



Nearly one-third of business leaders mentioned skills related to **quality and efficiency in operations** (e.g., "lean" practices). While the number of comments reflects the large number of manufacturing firms in the sample, healthcare providers and financial services companies were just as likely to mention the need to provide quality products or services that are delivered efficiently. Business leaders described these skills with an equal emphasis on knowledge of lean principles, attentiveness to efficiency in operations and knowledge of product quality and improvement.

When business leaders discussed **management, supervision or leadership**, they expected employees to have the following skills: conflict management, employee development (working with apprentices, mentoring and coaching), performance reviews, communication skills and the ability to deal with change. Some employers described these skills with personal attributes, such as ethics, integrity, "well-centered," grounded or having an action-orientation or decision-making ability.

Other business leaders discussed skills that were essential for **managing teams or leading projects** such as timeliness, organization, strategic planning, cost control and contingency planning. Typical quotes are, "We need our supervisors to build teamwork," or we look for "the ability to listen to the ideas of employees and to follow-through with them to implementation."

A few employers mentioned specific management or leadership programs such as Stephen Covey's *Seven Habits of Highly Effective People*, Quint Studor's *Hardwiring Excellence*, Training Within Industry or TWI (a learn-by-doing approach that teaches skills for supervisors and team leaders), "management accountability programs" and "credentialing" of management skills.

When referring to **general business skills**, more than half of the business leaders specifically mentioned **finance and accounting** skills. Other employers mentioned marketing, sales or other general business principles, particularly in the areas of **e-commerce**, internet sales, customer service and using technology for "personalized" marketing.

When describing **global understanding or international experience**, business leaders mentioned the following skills: global awareness or perspective; language skills; managing remote teams; understanding different learning styles; customer service in a global marketplace; experience living or studying in a foreign country; and international business skills. Quite a number of business leaders expressed an interest in partnering with educational institutions to learn where students are studying abroad because they see global markets as a growth area in the future.

Diversity skills often were described in the same way as global understanding. Employers are looking for employees who reflect customer diversity; employees who understand and work well with other cultures or different generations; opportunities to recruit a diverse workforce; and people who speak languages other than English.

"Green" skills were most often mentioned by energy firms where education and training for sustainable energy production is gaining momentum. Other companies mentioned the need for employees with knowledge of renewable products or alternative energy sources and how recycling practices and "green" products cut costs and are energy efficient.

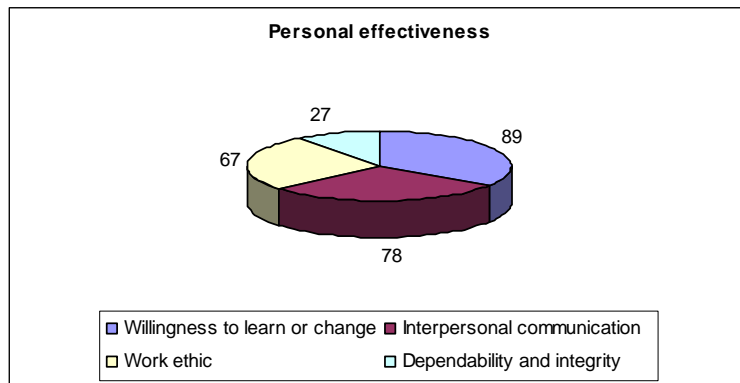
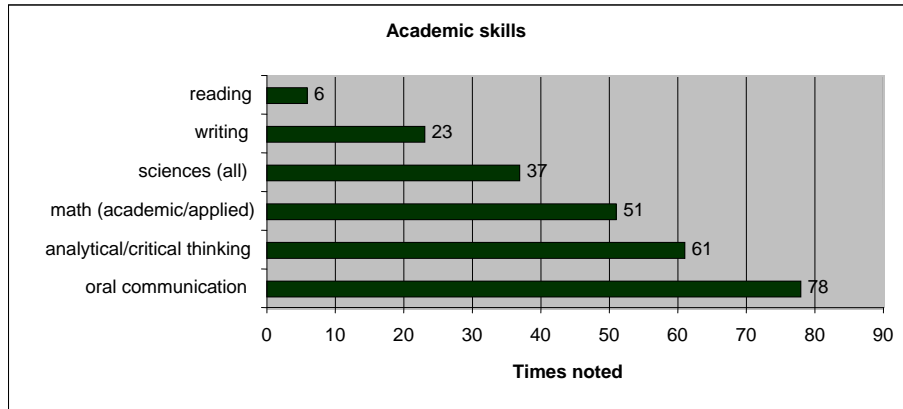
"Minnesota needs 3,500 towers in the next 16 years, so we need to accelerate the training in your wind energy programs. We need one maintenance worker for every four towers, not including related workers for supply. Hearty attitudes and physical abilities, and a willingness to work in inclement conditions at any time of the day or night. The energy field is evolving, so we need people who are trainable for change." (energy company)

Secondary Themes:

The following two charts reflect secondary themes on academic skills and personal effectiveness mentioned by business leaders. It is clear that a close intersection exists between **verbal communication, interpersonal skills** and the value employers place on **customer relations**.

Business leaders also value employees who are **willing to learn or change**. Notably, only 13 employers identified the importance of prior experience, but 128 mentioned the role that **on-the-job training, internships or apprenticeships** play in assuring a skilled workforce for

the future. Given the rapid pace in technology advances noted by many business leaders, it is evident they place a premium on employees who are engaged participants in formal company training and are willing to adapt to changing business needs.



Select quotes:

“We need people who have an intellectual curiosity to **develop innovative new ways** to apply our proven technology for new applications. They need to have excellent **problem solving** skills and a desire to **reduce costs** through innovation.” (precision manufacturer)

“Like the others, he said **adaptability** is critical to the industry and framed it like this: ‘I may know what I want, but I’m not sure how to get it’.” (energy company)

“[Our employees in] the company are allowed to ‘play without penalty’. They have the freedom to try new things without fear of failure. They are able to budget for **innovation...**” (agricultural - food production company)

“On the product development side, we are looking for project engineers who have a high level of technical skill, but who can also **manage projects** and increase sales by adding value. Technical skills are the fundamentals for designing for value. We also want engineers who **add value to our customers’ products**. That is, we want employees who have the ability to think and understand the business of our customers so that they can make improved products to better meet their needs.” (engineering services company)

Section 5 – Preparing the 2020 Workforce

When asked about the future of their business in 2020, many business leaders indicated they do not plan that far in advance (a one to two-year business planning cycle often was mentioned). Many leaders reiterated that they expect the skills identified in current hiring practices and skills they develop internally as the skills that will be needed predominately in the future.

Employers who ventured into 2020 mentioned they see the success of their business as tied to growth in international markets and value employees with global awareness. Yet, many companies expressed concern over financial pressures that may limit growth. It is reasonable to assume that employers will seek employees skilled in financial analysis or accounting and who can implement business practices that promote efficiency and quality in operations and product development.

“Workers in the future will need even more **interpersonal skills** and a **deeper understanding of budget, finance and technology**--and MnSCU should focus on producing graduates with this type of broader span of knowledge. Campuses should also do a better job of providing information to business about their offerings and **build strong connections to their local business community.**” (retail company)

Section 6 – Recommendations

The following four recommendations are a beginning point for a broader conversation among constituents of the Minnesota State Colleges and Universities system – institution leadership and faculty, the Board of Trustees, Office of the Chancellor staff, and business, labor and government partners – in response to the needs of Minnesota businesses.

Recommendation 1: College and university follow-up from visits.

Approximately half of the business leaders indicated they are interested in continuing or renewing relationships with their local college or university. College and university presidents should strongly consider continuing to visit local businesses to follow trends in employment and the need for skills identified in this report. Among the many opportunities business leaders recommended were:

- offers for college or university leaders to participate in business-led councils;
- suggestions for assisting partnerships between secondary and post-secondary education on career information and technical education;
- mentoring or coaching students;
- access to business-owned equipment or facilities;
- customized training opportunities;
- interest in research partnerships;

- offers to participate on college or university advisory councils or centers of excellence; and
- opportunities to promote education and training to company employees, among many others.

“[The company] offered to speak to anyone about industry and curriculum requirements. Their district manager is very involved and committed to staff development and recruitment.”
(construction company)

Recommendation 2: Focus on internships, apprenticeships, and on-the-job training.

As noted earlier, over one-third of business leaders mentioned a strong commitment to internal employee development through either on-the-job training, apprenticeships or internships. Business leaders see talent development as a competitive advantage and a critical factor in the future success of their company. Colleges and universities should see local business and industry as partners in educational delivery and explore opportunities to assist students in understanding that businesses deeply value the personal attribute of “willingness to learn and change.”

“[The university] has had a number of professors and students from engineering and college of business visit the company. They want to continue to work with the university and would like to bring in interns from the marketing area. Career services will follow up with expanding their internship program.” (stone manufacturing company)

Recommendation 3: Education program delivery: experiential learning and on-line.

Closely aligned with the recommendation above, business leaders stressed the importance of flexible delivery. The following statement is representative of business leaders’ perspective on educational program delivery which has particular implications for customized training and continuing education:

“MnSCU schools can help us now and in the future with adaptability, flexibility of programs, certifications, online learning certifications and providing the student with enough education (however many credits that takes) to meet the industry standards for employment.”
(telecommunications company)

While some might assert that difficult financial circumstances preclude employers from exploring training opportunities, one employer indicated he may move employees to less than full-time status so they may pursue retraining opportunities at the local college.

Recommendation 4: Skills for the future.

As described in the report, three themes emerged for future skill development: technology skills; business-critical “soft” skills; and skills that reflect changes resulting from emerging business practices, such as using “green” products and responding to global competition. It

is recommended that faculty look carefully at curricular areas that could be strengthened to reflect these emerging skill needs of employers. In addition, these skill areas may have implications for several areas across the system, such as the following:

- the Minnesota Transfer Curriculum;
- liberal arts requirements for associate's and bachelor's degrees;
- new certificates at both the undergraduate and graduate levels;
- study abroad programs;
- technical education financing and support;
- specific curriculum areas in business and information technology;
- programs of study as required by the Carl D. Perkins Vocational and Technical Education Act of 2006; and
- faculty professional development.

Section 7 – Conclusion

While business leaders provided specific advice for the Minnesota State Colleges and Universities system, many expressed gratitude and satisfaction with their relationship(s) with local colleges and universities. These quotes reflect comments made by business leaders:

“Our relationship with the college over the past decade has been improving. The college is responsive, particularly the nursing department. One of the defining elements of the current college administration is that leadership is more customer-focused and demonstrating greater public involvement.” (healthcare provider)

“Our relationship with the college is very important. We have grown from 35 people to approximately 80 people in the last four years. About 30 percent of our employees are the college's graduates.” (robotics manufacturer)

“We have been very happy with the college's greater efforts to reach out to the business community. We use the college for our safety training and have been very satisfied with the ease of scheduling and responsiveness. It feels like the technical college of old. We feel like we are part of a college system.” (packaging manufacturer)

Presidents and administrative leaders involved in the visits also reported they appreciated the opportunity connect with employers and expressed an interest in continuing to reach out to business.

This report will be shared broadly with chief academic officers, business and industry outreach administrators, advancement staff and business and industry partners of the Minnesota State Colleges and Universities system. We welcome feedback and suggestions.

Finally, we would like to thank all of the participants in the visits, including business leaders and their associates, college and university presidents, business and industry outreach staff, system leadership, and any others who participated. A special thank you to those who took the time to enter data for analysis.

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