CRITICAL SKILLS SHORTAGE INITIATIVE REPORT #2:

Results of Employer Focus Groups, Interviews, and Surveys in the Manufacturing Industry

This project was commissioned by:

The Workforce Boards
OF METROPOLITAN CHICAGO

Prepared by

CSW
corporation for a skilled workforce

900 Victors Way, Suite 350
Ann Arbor, MI 48108
(734) 769-2900 (voice)
(734) 769-2950 (fax)
lagood@skilledwork.org

Background

This report is a product of the Critical Skills Shortage Initiative (CSSI), a project undertaken by the Workforce Boards of Metropolitan Chicago, in partnership with the State of Illinois, designed to assess the occupation and skill needs of firms in industries critical to the economic health of the Chicago metropolitan region.

The Workforce Boards of Metropolitan Chicago is a collaboration of nine Workforce Boards providing policy expertise and investing in services in 11 northern Illinois counties—Cook, DeKalb, DuPage, Grundy, Kane, Kankakee, Kendall, Livingston, Lake, McHenry, and Will. The Boards identified three priority industries around which to focus their CSSI work in early 2004—Healthcare, Manufacturing, and the umbrella industry comprising Transportation, Warehousing and Logistics (TWL).

Corporation for a Skilled Workforce (CSW) was commissioned to gather qualitative intelligence from firms and employees in the latter two industries—manufacturing and transportation, warehousing, and logistics. Between April 2004 and June 2004, CSW, in partnership with the Workforce Boards, convened focus groups and conducted interviews and surveys with firms and workers in these industries.

The results and findings from this intelligence gathering effort are described in a collection of four reports: two summarizing findings from employers in each of the two industries; and two summarizing findings from employees in each of the two industries.

This is the second of the four reports. It summarizes the results of interviews, focus groups, and surveys with employers affiliated with the manufacturing industry in greater metropolitan Chicago.

The report provides:

- Descriptive information about participating firms (sub-sector, size, etc.)
- Information about the context in which these firms are making decisions about recruiting and retaining talent; and
- Information about specific practices and needs as identified by industry representatives who participated in the project.

This report is not intended as a summary of employer perceptions of the entire manufacturing industry, nor does it definitively identify needs and challenges that should necessarily be addressed by the Workforce Boards. Rather, it reviews one aspect of a more comprehensive data collection effort.

Importantly, during our discussions and through surveys, respondents provided thoughtful, honest, and insightful observations on behalf of their firms and industries—many also provided access to their employees, tours of their facilities, hosted focus groups, and/or provided coffee and refreshments. We thank them for their hospitality, insight, and for the work they do everyday.

The information included in this report will undoubtedly prove valuable to the Workforce Boards of Metro Chicago as they develop strategies to engage and support manufacturing firms in the region.

Summary Highlights

Key findings are as follows:

- The manufacturing industry in metropolitan Chicago is large and diverse. Respondents expressed divergent views about the health of the industry and the direction of federal and state policy relative to it. There was more agreement on the key challenges the industry faces than on potential solutions to those challenges.
- The majority of respondent firms (56%) in our sample reported planning to employ more workers in 2005 than they do today, suggesting more are optimistic about their future growth prospects than are pessimistic.
- Key changes about which industry respondents expressed concern included:
  - "Outsourcing" or "off-shoring"
  - The manufacturing industry's "image problem"
  - Changing demographics (age, diversity)
  - Technology
  - Distribution channels and practices
- The most frequently cited shortage occupations across the industry included:
  - Operators
  - Tool makers
  - Mechanics/maintenance mechanics
  - Engineers
  - Sales, business development, and customer service professionals
  - Machine set-up technicians
  - Quality specialists
  - Machinists
  - Technicians
  - Programmers and CAD Designers
  - Welders
- Primary recruiting methods reported by firms (in order of importance) included: referral, newspapers, the Illinois Department of Employment Security (IDES), temporary or staffing firms, colleges, high schools, or trades schools, the Internet, and community organizations.

- The most effective sourcing methods cited were employee referral, newspaper advertisements, and staffing firms.
- Skills rated most important by manufacturing industry respondents included reading, math, and communication skills. Those rated least important included management skills, computer skills, and team skills.
- Important skills cited as lacking among applicants and new hires included: higher-order reasoning and logic, workplace basics, communication skills, English, and mechanical or technical skills or aptitude.
- Respondents identified the following as areas that merit specific attention in their firms, sectors, and industry generally:
  - Specific improvement in schools (K-12), including increased emphasis on workplace basics, modern vocational education, career preparation, and habits of lifelong learning.
  - The "image problem"—there is a need to tell more diverse (and more accurate) stories about modern manufacturing firms and sectors.
  - "Out sourcing or off-shoring"—strategies to retain (or grow!) jobs at home are needed.
  - Reducing the non-wage cost of employment.
  - Improving credentialing systems—to better enable workers and firms to translate job requirements, skills needs and experience across firms or industries.

Process, Results and Findings

While the overall numbers were small relative to the number of firms that comprise the metropolitan Chicago economy, the CSSI project engaged a diverse group of firms representing all the parts of the manufacturing industry that the Workforce Boards sought to reach. Individuals in these firms allowed researchers brief entrée into their workplaces, sharing insights into their work and the context in which it takes place, and the identifying priorities and challenges faced by their firms and industries. The information they provided was rich, insightful, and in some cases, suggested potential policy and program responses for Workforce Boards, schools, industry groups, and professional associations, as well as for their peers in the industry.

Who participated in focus groups, interviews, and completed surveys?

One hundred and four individuals representing 85 manufacturing firms in the Chicago metropolitan area participated in structured interviews, mini-focus groups, and/or completed surveys during the six-week data collection effort associated with the project. Forty-six of these individuals participated in focus groups or interviews; 39 completed an on-line survey; and 19 participated in oral conversations, but did not complete individual data cards that enabled comparison between their organizations and other firms.[1]

We had planned to convene ten focus groups among key sectors in manufacturing industry. However, for many professionals in firms we contacted, schedules were so full or their business environments so volatile,[2] that they were reticent to commit to attending an event away from the workplace, even through they were interested in the project and subject matter. To accommodate such firms, we revised the planned data collection method to include: 1) focus groups; 2) structured interviews at the workplace; 3) attendance at meetings or pre-scheduled events in which relevant subject matter was the focus of the agenda; 4) telephone interviews; and 5) electronic and paper surveys.

[1] In some cases, this was because multiple people from the same firm attended a focus group or participated in an interview, but only one completed a survey or data card on behalf of the firm. In other cases, individuals representing organizations that were *not* private-sector manufacturing firms attended focus groups and were counted among participants, but were not able to complete the surveys or data cards—in most cases, these individuals represented colleges, employment and training programs, or the one-stops or workforce boards. In one case, we convened a focus group comprising primarily economic development professionals, who, like their workforce counterparts, provided valuable information orally, but were unable to complete data cards that would enable meaningful statistical comparison with private firms.

[2] For example, a senior executive on a metro-area workforce board offered to host a focus group at his workplace. On a Friday, we confirmed the location and logistics, and by Monday morning, this individual was no longer working for his organization, which had initiated a round of lay-offs the previous Friday afternoon. While this caused some confusion, it was a telling and illustrative example of the kind of volatility many firms, and employees, are facing.

We are confident that our use of diverse methods yielded better information than would any single method.

Most of the 85 manufacturing firms participating in the project were affiliated with one of the sub-sectors the Workforce Boards sought to reach.[3] These firms self-identified as follows:

- Durable goods (primarily electric and non-electric machinery and equipment, and automotive parts) (34%)
- Non-durable goods (primarily medical supplies and chemical products) (11%)
- Metals, steel (14%)
- Food (7%)
- Electronics, engineering (5%)
- Plastics (5%)
- Printing and publishing (5%)

The remaining 20% included: apparel, plumbing materials, wood products, tools, and "other."

Collectively, these firms employed over 32,075[4] in the Chicago area. They ranged in size from 1 employee to over 13,000—firms in all size categories were represented.

- 4% employed over 1,000
- 8% employed 500-999
- 19% employed 250-499
- 17% employed 101-249
- 23% employed 50-100
- 36% employed fewer than 50

Most of the individuals who participated in the project on behalf of their firms were Human Resource Directors, though a few were Chief Operations Officers, Chief Financial Officers, or Chief Executive Officers. Participating firms reported the location of their primary[5] regional facilities as follows:

- Cook County (41%)
- DuPage County (22%)

[3] These included: metals (primary and fabricated), machinery (electrical and non-electrical), professional and scientific instruments, food and kindred products, printing and publishing, chemical products, petroleum refining and products, and rubber and plastic products.

[4] This is probably a low estimate as we asked for employment numbers in the Chicago area, but some firms had multiple locations and knew only their own location's numbers and the national numbers, but not the regional ones. Others answered with national numbers rather than regional—they were not counted in the total. Finally, several did not answer the questions.

[5] Many firms maintained more than one facility in the region, state, or nationally.

- McHenry County (19%)
- Lake County (7%)
- Kane (5%) County
- Will County (3%)

Fifteen percent of participating firms employ members of labor unions. Specific unions cited include:

- Boilermakers
- International Brotherhood of Electrical Workers (IBEW)
- Bakers, Confectioners, Tobacconists, and Grain Millers (BCTGM)
- Paper, Allied-Industrial, Chemical and Energy (PACE) Workers
- Teamsters
- United Food and Commercial Workers (UFCW)
- Chemical and Allied Products Workers
- International Association of Machinists (IAM)

Firms were asked about the extent to which they use alternative or contingent labor—temporary staff, leased staff, contract workers, etc. They responded as follows:

- "We use some alternative labor." (46%)
- "We do not use alternative labor." (28%)
- "We rely heavily on alternative labor." (20%)
- "We use alternative labor seasonally." (6%)

Individuals who participated in focus groups were not offered other incentives, though most were hosted for breakfast or coffee and used the opportunity for networking. On two occasions, the host firms offered focus group participants tours of their facilities. Individuals who participated in on-site interviews, and those who participated in telephone interviews and offered to distribute surveys to employees, received a $3 or $5 Starbuck's gift card, depending upon the length of the interview.

How did they participate?

The project engaged representatives of participating firms in one or more of four different types of activities: focus groups; in-person, on-site interviews; telephone interviews; and electronic or paper surveys.

Focus Groups

With the assistance of the Workforce Boards of Metropolitan Chicago and numerous professional and industry associations, we convened six focus groups

in April and May 2004. Two were organized around sectors—food products, and tools/machining—and four were organized by region—McHenry County, Northern Cook County, Grundy, Livingston, Kankakee, and Will Counties, and DuPage and Lake Counties.

In the focus groups, employers were asked to complete a data card asking for information about their firm's size, sector, and basic hiring and recruiting practices. Participants were then engaged in a collective discussion focused on four sets of questions:

1. "What major changes/shifts have occurred within your firms/industries during the past three to five years? What strategic challenges do these changes pose?"
2. "What occupational or skill shortages (if any) exist in your firms/sectors? Does the answer change if you look five years into the future? How?"
3. "Why do you think you are having difficulty hiring for the occupations you have identified, and what strategies are your firms/sectors using to overcome hiring challenges?"
4. "What could be done to help your firms/industries better attract the talent they need today and into the future?"

On-Site and Telephone Interviews

We engaged over 20 firms in telephone or on-site interviews, using the same four sets of questions we used in the focus groups. Participants were either asked to complete a paper or on-line survey, or talked through a questionnaire orally.

Events

We also used pre-scheduled events to both recruit employers for follow-up surveys, interviews, or focus groups, and to gather intelligence during the events. There were three such events held in April and May 2004: 1) a summit intended to facilitate communication between high school and college vocational education instructors and manufacturing firms in McHenry County (April 2004); 2) a meeting/focus group with economic development professionals convened at Moraine Valley Community College (April 2004); and 3) a meeting of human resource directors of the firms located in the new auto-manufacturers campus in South Chicago (May 2004). Finally, we contacted over 30 professional and trade associations in an effort to identify respondents and disseminate the electronic surveys.

Employers who participated in any of these activities were asked to distribute electronic or paper surveys (5-10 surveys) to high-performing employees in the hard-to-fill occupations they had identified during the interviews and/or focus groups.

What did they say?

Respondents discussed the recent hiring and growth trends, current challenges in their firms or sectors that impacted their human resource strategies and current and projected occupational and skill needs. Most respondents also offered suggestions for improving their industry's ability to attract and retain talent.

Employment Growth

Firms were asked whether they currently employ more or fewer people than one year ago, and whether they planned to employ more or fewer in 2005. They responded as follows:

- "We employ more people today than we did one year ago." (35%)
- "We employ about the same number as we did one year ago." (34%)
- "We employ fewer today than we did one year ago." (32%)
- "We expect to employ more people in 2005 one year from now than we do today." (56%)
- "We expect to employ about the same number in 2005 as we do today." (31%)
- "We expect to employ fewer people in 2005 than we do today." (11%)

Importantly, the primary conclusion to draw from this set of figures is that the participating firms seemed to be fairly optimistic about their future growth prospects—56% expect to employ more people next year than today. What the figures do not reveal is whether these firms (or the manufacturing industry as a whole) will see an increase in hiring activity. For example, many firms reported employing large numbers of older workers who are retiring in fairly large numbers. As a result, these firms are experiencing high levels of hiring activity, even though they may ultimately employ fewer workers.

While not true in all cases, firms with fewer than 250 employees were more likely to expect employment growth, whereas firms employing over 250 were less likely to foresee employment growth.

Key Changes in the Industry

"Outsourcing" and "Off-shoring"

These two words generated much discussion (and considerable angst) in both focus groups and interviews.[6] While the extent to which outsourcing is a primary cause of the industry's volatility is debatable, it was a key concern of many of our respondents.[7] A minority of respondents were more measured in their comments on the subject, and more nuanced in their perspectives. They articulated both the opportunities and the challenges outsourcing posed for their firms, their sectors, and for the manufacturing industry as a whole. They argued that asking whether "to outsource or not" was the wrong question—"what we should be doing is working to make every part of our enterprise as efficient as possible while adhering to the highest possible quality standards. If outsourcing helps achieve that, it matters. If not, it doesn't."

A few respondents were very positive about the subject—they had identified ways to make outsourcing (or off-shoring) work for them and felt that contracting out the manufacturing of select products helped their firms focus on their core business—developing and designing new and better products, "Our partners in China help us do a better job here."

Other industry-wide issues that firms repeatedly cited included: the "image problem"; changing demographics; new technologies; and new distribution challenges.

The "Image Problem"

Respondents raised many different aspects of the manufacturing "image problem" or the way manufacturing is currently positioned in the media, and its negative effect on peoples' confidence in the industry. Some respondents lamented the politics surrounding the current debate, expressing frustration that the "real discussion we ought to be having (about trade, tariffs, subsidies, tax policy, etc.) is avoided by the barrage of simple sound bites about the collapse of American manufacturing." Others felt "gypped"—their firms were doing well, but since the manufacturing "story" is about decline, they are not part of it. "It's like being the only successful e-business right after the bubble burst…no one wants to hear about it." Others simply wanted to "get on with it already." They reported struggling with a number of challenges, but were not necessarily seeking help—"it's just business…sometimes, it's hard." Still others were

[6] Respondents had direct experience with the consequences in two primary ways: 1) many had been forced to lay off employees; and 2) most faced sustained and severe pressure to reduce costs—they felt vulnerable as employees, and they expressed concern over whether their firms or sectors would "make it" in the long term.

[7] Oddly, these were senior executives. Presumably, they are decision-makers, and yet, on this issue, they clearly felt that decisions about outsourcing were out of their control.

enjoying being "the story of the hour" and looking to take advantage of potential benefits.

The one aspect of the "image problem", on which there was nearly universal agreement, was its negative impact on the industry's ability to recruit new talent—"who wants a career in an industry everyone says is dying?" While most participants agreed that this is not a new problem, they claimed it has been exacerbated in recent years by three factors: 1) negative press about the industry; 2) the industry's shrinking share of the GDP and of the nation's employment; and 3) increasing pressure on schools (and parents) to push students toward colleges and universities rather than into jobs and careers.

A few respondents took some responsibility for further undermining the industry's image through cost-reduction strategies that eliminated community relations positions or philanthropic initiatives, "Having people in the schools used to be the way we countered the image problem—what did we expect?" One respondent reported that her firm eliminated the community and government relations positions, but that the firm's CEO now does some of that community work: "But here's the problem: the community relationship work was about both good corporate citizenship and actually recruiting people to work here. Now, it's more about firm visibility, but it doesn't really help us attract young people to work here."[8]

Changing Demographics

Demography explains much about why manufacturing firms are so interested in young people, and what they think about the industry. Almost universally, the manufacturing workforce is older than average,[9] and young workers tend to be less likely to stay with firms or industries than older workers. As a result, many firms struggle to both recruit young workers, and then to retain them. As firms disinvest in fewer school and community partnerships, and schools disinvest in vocational and career programs, recruiting young people into the field becomes more difficult.

Another important aspect of the aging workforce is linked to technology—older workers tend to be more reticent to adopt new processes, protocols, and technologies than younger workers. They also tend to be more resistant to

[8] This was an interesting anecdote that may hold lessons for the Workforce Boards. This respondent indicated that her job had been made much harder by the shift in roles she described. Her boss was now helping schools and youth programs, but from his perspective, it was about strategic philanthropy—doing good work so people (customers and employees) would feel good about the firm. He had no intent of hiring or otherwise partnering with these organizations. Yes, she, the Human Resource Director, was constantly getting calls from program representatives who were under the impression that the firm would hire young people who completed programs sanctioned by her boss.

[9] Many studies have documented this. A recent *Conference Board* Survey found that nearly 70% of surveyed firms have a workforce in which at least 20% is 50 or older.

changes in their job descriptions, making labor force flexibility more difficult to realize.

Demographics are not just about age. The American workforce is more diverse than ever, and women comprise half of it. An obvious challenge raised by employers with increasingly diverse employees was the language barrier—respondents expressed great concern about the ability of workers to communicate effectively and efficiently with one another. A smaller number of respondents expressed significant interest in (and some experience with) broader strategies for recruiting and maintaining a diverse workforce—adopting ways of doing business that affirm and support different cultural, religious, and gender background, for example, or by recruiting interns and employees through programs that serve minorities and women. In general, however, male and female respondents alike pointed to gender and race inequities that persisted in their firms, and in their industry.

New Technologies

Most firms in most sectors had implemented a wave of new technologies during the past several years. They pointed to two significant lessons resulting from their experiences. First, the introduction of new technologies is unlikely to stop—their firms' technology initiatives were not about a one-time effort to "get on-line," but about building a flexible and innovative work culture expected to adapt to change more quickly than in years past. Second, "it isn't just about technology in the firm, but about the application of new technologies across the whole supply chain." For example, several manufacturers reported that their customers are quickly integrating Radio Frequency Identification (RFID) technologies—and these are inserted during the manufacturing process. These technologies, together with Global Information Systems (GIS), enterprise resource planning (ERP) and other large-scale technology innovations are impacting even the smallest firms, creating new demands on their time, their infrastructures, and their employees.

Distribution Challenges

While most respondents talked less about changes in distribution processes, a few were quite vocal—the price of gas has increased their costs; new technologies have created "bidding wars" for space (intermodal); and the increasing "connectedness" of supply chains has raised new liability challenges and made more sophisticated the management of these supply chains through contracts. "It's no longer about just making something and delivering it—it's all a lot more complex." Some respondents were enthusiastic about these changes, and others were intimidated by them.

Occupational and Skill Shortage in the Manufacturing Industry

Employers were asked to identify "the job or occupation [they had] the most trouble filling or keeping filled, or where [they had] the most severe labor shortages." Respondents identified forty-five occupations[10] ranging from technicians to engineers to truck drivers[11] to researchers to salespeople and business development professionals. The most frequently cited occupational categories included:

- Operators (machine operators, process operators, extrusion operators, mill operators) (14)
- Toolmakers—all classes[12] (9)
- Mechanics (and maintenance mechanics) (8)
- Engineers (7)
- Sales, customer service, business development (6)
- Machine set-up (6)
- Quality control specialists (5)
- Machinists (4)
- Technicians (4)
- Programmers and CAD designers (4)
- Welders (3)

Other occupations cited more than once included: assemblers, packers, pressmen, programmers, production specialists, and research and development staff (scientists).

Seven individuals who responded to the question indicated that they had no shortages, one noted in his written survey, "I could hire 1,000 people for every position I have today." Eighty-seven percent of respondents indicated that all of the positions they had identified as shortage occupations include full benefits. Ninety percent indicated that these jobs are also full-time jobs.

Sixty-nine percent of participants provided wage information about their shortage occupations. While there was not a one-to-one correlation—some respondents identified multiple occupations but only one wage, for example—

[10] Although respondents were asked to identify the one job or occupation they had the most trouble filling, about half identified more than one.

[11] Since many firms manage some part of their own supply chains, there is considerable overlap between manufacturing and transportation/warehousing/logistics firms.

[12] This particular occupational shortage area may be inflated as we worked with an industry association to organize a focus group that included exclusively tool and die makers. In addition, some of the same participants also attended other focus groups—their input and comments from all sessions are included.

we were able to group shortage occupations into categories of positions that offer a range of different wages.

- Assembly, Machine set-up, Packer, Jogger (press room, entry-level), Mixer, Machine Operator (entry-level), Production (entry-level), Warehousing (entry-level, Shop Assistant, and Mechanic (entry-level) positions all offer between $6.00 and $9.50 per hour. These positions are less likely to provide full benefits than other categories of shortage occupations (though most do), and are more likely to offer part-time or seasonal work, rather than just full-time. Chicago-based firms tended to offer wages that were slightly lower than their suburban counterparts. Most employers indicated that these entry-level positions are where they have the most turnover, though less so in a slow economy, when there are fewer positions available elsewhere. Firms reported struggling to distinguish between employees who may have a future in manufacturing and those who will leave at their first opportunity. While what matters most is "doing the job," most employers indicated that they would be more proactive about offering training, mentoring, internal promotion, and professional development opportunities if they knew which employees were most likely to make a career with the firm or in the industry—but they can't afford to train everyone.
- Machine Operator (less experienced), Mechanic (less experienced), Injection Molding, Extrusion, Machine Technician, Production (less experienced), Chemical Ops, Processors, Maintenance, and Customer Service positions typically offer wages of $10-$14 per hour. Most of these positions are full-time and include benefits.
- Production Specialist, Mechanic (experienced), Tool Makers (entry-level), Welders, Cabinet Makers, Carpenters, Computer Numerical Control (CNC) Set-Up, Tool and Die Specialist, CNC Programmers (less experienced), Press Operator, Jogger (experienced), Distribution, Lab Technician, Maintenance (experienced), Machinist (experienced), Mill Operator, and Quality Control (entry-level) positions typically offer wages of $15-$20 per hour. Most positions are full-time and include benefits.
- Production Technicians, Quality Assurance or Quality Control (experienced), Engineers (less experienced), Electrical or Mechanical Tool Repair, Tool and Die (experienced), Machine Operators (experienced), Punch Press, Tool Maker, and Electrician positions typically offer wages of $20-$25 per hour. Most positions are full-time and include benefits. Many are also salaried rather than hourly.[13] Most of the occupational shortages identified by firms participating in the CSSI project fell into this category.

[13] In order to make comparison possible, all salaries have been converted to wages using 2,080 hours in a year of full-time work.

- Operator Technician, Tool Maker (experienced), Engineer, Computer Assisted Design (CAD) Architect, Designer or Programmer, Sales, Information Technology (IT), and Precisions Machinist positions typically offer wages of $26-$38 per hour. Most of these positions are salaried—all are full-time and include benefits. The highest paying positions identified from participating respondents included Engineers, Designers, and Precisions Machinists.

Respondents were also asked about the nature of their occupational and/or skill shortages. They reported:

- **"I can't find the people I need, so I hire whoever I can get even if they don't have the skills I need" (30%).** This response was most common among employers describing shortage occupations that were just above entry-level positions—those that paid between $10-$15 per hour.
- **"I hire for attitude and train for skills, but I'm having trouble finding either" (25%).** This response was most common among employers whose most significant shortage areas were in entry-level occupations.
- **"I hire credential people who should have the skills I need but they don't" (19%).** This response was most common among employers with shortages in occupations that required a 4-year degree or advanced certification.
- **"I don't have any shortages" (11%) or "I'm hiring, but it takes forever to find the people I need" (7%).** These responses were written-in by employers rather than selected from among a list. Employers who responded with either of these statements tended to be smaller firms in self-described niche markets.

Recruiting and Tenure

Respondents were asked about their recruiting methods. They indicated that the following methods were their primary ones in recruiting for hard-to-fill occupations:

- **Referral (25%)**. While there were exceptions, larger firms tended toward formal employee referral programs, while smaller ones had less formal referral processes, firms of all sizes and sectors reported relying heavily on existing employees to share information about openings with friends, neighbors, and family members.
- **Newspaper (24%)**. While few firms could address its effectiveness, most routinely placed job advertisements in newspapers (local and large metro). Several firms—fewer than ten, but from all sizes and sectors—reported specifically avoiding newspapers because they resulted in large numbers of applications from few qualified people, and the sorting process was too labor intensive.

- **Illinois Department of Employment Security (IDES) (14%).** Larger firms and those with multiple sourcing methods were most likely to report using IDES for assistance in hiring.[14]
- **Temp or Staffing firms (12%).** While nearly ¾ of participating firms reported using temporary firms (or other forms of contingent labor), only 12% reported using these firms to find employees, indicating few "temp to perm" positions among respondent firms.
- **Colleges, trade schools, apprenticeship programs, high schools (10%).** While few firms claimed strong relationships with specific learning institutions, most reported using them to source new talent.[15]
- **Internet (internal or trade association web-site or job board/bank) (9%).** While most firms reported posting open positions on either job banks (e.g. Monster.com) or their own web-sites, few reported actively recruiting over the internet—through resume banks, list management services, or announcement of open positions. No difference between small or large firms was apparent on this issue.
- **Community organizations (4%).[16]**
- **Other (e.g. recruiting from within, internship programs, etc.) (4%)**

Employee referral (48%), newspapers advertisements (15%), and the use of staffing firms (14%) were cited as the most effective recruiting methods for hard-to-fill jobs. Respondents also indicated that paying higher wages, networking, search firms, the internet, and IDES were also effective for some positions.

Firms reported that tenure in all of their shortage jobs was long—once individuals retain employment for six months. "If people make it six months, they'll stay around for a few years," reported a small manufacturer in the plastics industry. Sixty-eight percent of respondents indicated that the average tenure of their shortage occupations was over 18 months. Twelve percent reported both tenures averaging 6-12 and 12-18 months; 11% indicated average tenures of less than six months, and 2 firms indicated that their average tenure was "years."

Respondents indicated that most jobs in shortage occupations require either a high school diploma (23%) or a high school diploma and experience (23%), though, two and four-year degrees are becoming increasingly common (14%

[14] Although respondents were asked about One-Stop Centers specifically, few knew the centers by that name or by the name "Illinois Employment and Training Center" (ITEC), and most respondents who did not refer to publicly-funded centers as "IDES office" associated them with the category "community organizations."

[15] The exception was firms with open engineering positions—they reported relationships with college and universities, the Milwaukee School of Engineering and the University of Illinois featured prominently. Other schools cited included: West Side Tech (Chicago), the College of DuPage, Mundelein High School, College of Lake County, McHenry County College, and Joliet Junior College. The Tooling and Manufacturers Association (TMA) and Burhke Industries were also cited. Burhke is a firm in Arlington Heights that allows one of their warehouses to hold donated industry equipment and serve as a TMA industry training center for employees of member firms.

[16] Specific community organizations cited included: Will County Job Source, Instituto Progresso Latino, World Relief, Chicago Women in Trades, and the Spanish Center.

each), as employers increasingly use academic credentials as proxies for work readiness. Sixteen percent of cited occupations require less than a high school diploma, and another 11% require a certification (license or equivalent).

Respondents who completed the full survey were asked about specific skills sets and their importance relative to hard-to-fill positions. The skills most frequently rated of great importance were reading skills, math skills, communication skills, and problem solving skills. The skills rated least important were management skills, computer skills, and team skills.

Respondents also identified the following skills as those most likely to be missing among new recruits in hard-to-fill positions:

- Higher-order reasoning, logic, problem solving—as one employer noted: "most of my people know what to do, but I need the ones who know why they do what they do."
- Workplace basics[17] —arriving at work on time, in uniform or appropriate dress and well-rested or appropriately prepared, and behaving in appropriate ways for the job.
- Communication skills—the ability to communicate with peers, supervisors, and customers in a clear and appropriate manner.[18]
- English – the ability to communicate clearly in English.[19]
- Mechanical or technical skills or aptitude. While some employers expressed a preference for specific technical skills, the primary concern of most was employees' aptitude. Respondents reported seeking candidates capable of learning on the job. And most reported that employees with both attitude and aptitude could command salaries of "whatever they ask for."

What would help?

Respondents were asked (both orally and in the surveys) to identify one thing that would dramatically improve their ability to hire and attract talent to shortage occupations. Fewer than half of respondents answered this question on the survey, though most focus group participants and interviewees provided thoughtful responses. Their suggestions fell into five categories: 1) change learning options in schools (K-12); 2) re-brand American manufacturing; 3) "stop

[17] We defined workplace basics as "the set of rules or expectations that most employers in most industries have in common." Generally, this included timeliness, appropriate dress, and preparedness. It specifically did not include communication or team skills about which we inquired separately. We avoided the use of the phrase "soft skills" because employers tended to use the phrase for every skill that was not reading, math or technology.

[18] Respondents indicated that communication skills were not the same as English skills. They were concerned less about what language was used in the workplace than about whether effective communication was occurring.

[19] The primary driver of employer concern about English skills was safety—particularly in a workplace in which workers and supervisors spoke different languages.

moving jobs off-shore!"; 4) decrease the non-wage costs associated with employment (workers compensation insurance, liability/litigation issues, health insurance, unemployment insurance, etc.); and 5) establish a better credentialing system.

Wanted: K-12 Systems that Prepare Young People for Work!

Three key observations seemed to drive high levels of interest in K-12 schools among participants. First, there was a wide-spread and long-held perception among respondents and their industry peers that vocational and technical education, as well as "career prep" have been chronically undervalued, under-funded, and as one participant stated, "completely under-done." While respondents indicated that the problem was not a new one, they argued that the effects of neglect are now manifesting themselves in the workplace—in the form of fewer high school graduates prepared for work, fewer young people aware of careers in manufacturing, and overall, lower status afforded the industry as a viable career path. Second, because so many manufacturers face serious demographic challenges—older workers who are likely to retire en masse—the absence of a "pipeline" that introduces new workers to the industry has become an urgent problem. Third, the "bad press" the industry has seen during the past three years has driven away both young talent currently working in the industry—people seeking to "get out before they get laid off"—and career seekers or changers—talented individuals who might have gone into manufacturing had there not been so much negative press about the job situation in the industry.

Participants in focus groups and interviews indicated that working with K-12 is a way to reconstruct a pipeline to young people, while also reaching many of their older friends, relatives, and neighbors (through word of mouth).

They pointed to four specific skill sets they would like to see the K-12 address:

- Workplace Basics—adhering to schedules, wearing appropriate clothing, and exhibiting appropriate workplace behaviors;
- Vocational Education[20]—the application of some kind of vocational skill;
- Career Prep—an introduction to navigating the labor market; and
- Lifelong Learning[21]— being receptive to new skills and knowledge in the workplace.

Wanted: A New Image for American Manufacturing

In addition to getting different stories about manufacturing told in the mainstream media, respondents admitted that they need new allies to help them

[20] Respondents recommended marketing this as anything but "vocational education."
[21] Respondents referred to this concept using different words—but what they could agree upon was the importance of continuing to learn on the job and throughout a career (whether formally or informally).

market themselves to job seekers, to communities, and to policy makers. Many respondents expressed frustration that so few organizations and interest groups appeared to be working on their behalf or even treating their industry fairly, relative to other industries. Career counselors, high school counselors, parents, job-placement organizations were cited as intermediaries who market "either college or nearly every career but the ones we offer" to job seekers or refer the job seekers with no other choices to our industry—and we can't hire most of them. They were clear that the answer lies not just in marketing, but in providing information that can help job seekers make choices that meet their needs, too—information about wages, for example, in combination with information about the realities of a life in a modern plant, distribution center, or laboratory.

Wanted: New Ways to Keep Jobs at Home!

Seven survey respondents (21%) responded to the question with phrases like "STOP OUTSOURCING!" or "Keep jobs in America!" While these are not specific suggestions, the frequency with which the survey elicited this kind of response was telling—many respondents expressed great concern about the health of the manufacturing industry and its ability to continue to create good jobs. The word "outsourcing" was the equivalent of a lightening rod in many of our group discussions, and seemed to function the same way for a number of survey respondents. A litany of specific ways to retain jobs were offered—from tax breaks to tariffs—but all in the context of frustration (and fear), and all aimed at a questionable objective: saving jobs in firms that are currently struggling to remain afloat.

There were, however, firms that spoke at length—in focus groups and phone interviews—about specific strategies they had pursued to become more competitive, and retain, even grow, good jobs. Identifying niche markets, competing on quality rather than price, and adopting specific workforce policies and practices, such as redesigning work/jobs, adopting new management models or frameworks, or revisiting pay and benefits packages were all cited repeatedly. Two firms noted their efforts to reduce waste or adopt sustainable business practices as a strategy for reducing costs, increasing employee morale and differentiating from the competition.

Importantly, several interview respondents pointed to the need for a less reactive approach to the "manufacturing crisis." They argued that the global economy brings benefits and drawbacks, suggesting that American firms need to do the hard work of figuring out where their value is greatest, and taking advantage of it—"we need to figure out how to work with foreign competition, not just be bullied by it. Some products will be made cheaper and better in China—but not all of them. And few, in the foreseeable future, will be designed there."

One respondent indicated that not all manufacturing jobs were worth saving just because they were American manufacturing jobs. Providing an example from

his own experience, he reported that his plant used to run all of its production lines, seven days a week, 24 hours a day. A new piece of equipment enabled the firm to move to a five-day schedule, producing more and better quality goods, at a higher profit, with fewer, better paid staff (all through attrition)—and no accidents. "Where's the down side in the long run?" he asked.

The same firm just brought a brand new product to market—its first retail product. The product created only one new job in the manufacturing plant, but probably many more in the transportation sector as the products gets distributed, and placed in the nearly 1,000 *Lowe's* home improvement retail stores where it will be sold.

Wanted: New Options for Reducing the Non-Wage Costs of Employment

Although only about one-fourth participating employers raised the "cost of employment " issue—those employers were adamant about the negative impact of such costs on their firms. These costs were of four primary kinds: workers compensation, liability insurance/litigation, unemployment insurance, and health insurance. Respondents made heated, but unspecific comments about the first three of these. Complaints about workers compensation seemed to center around two issues: 1) employees making unnecessary workers' compensation claims, potentially raising the cost of workers' compensation insurance; and 2) the removal of employees from their firm's productive workforce.

Complaints about liability and litigation followed a similar pattern—respondents complained about both the cost of liability insurance and about the potential for "frivolous lawsuits." No specific first-hand examples of how the system was misused or the impact of said misuse were provided.

The issue of unemployment insurance struck a nerve in several focus groups and small discussions, but there was disagreement among respondents about the scope and scale of the problem. A vocal minority of employers felt that the state's unemployment benefits were too generous. They claimed that the result was high costs—in the form of the Federal Unemployment Tax Act (FUTA) and state payroll taxes paid by employers to subsidize unemployment insurance (UI) for workers who lose their jobs—and lost work incentives because the real gains low-wage earners realize from working, compared to not working and receiving UI, may be quite low. Other employers argued that UI was a "pretty good tax as taxes go," because almost all of it gets put immediately back into the consumer economy—"people on UI are not big savers."[22] They also suggested that

[22] This respondent indicated that for most individuals who lose their jobs, unemployment insurance fails to fully compensate for the lost salary. As a result, for many families, expenses exceed incomes until regular employment resumes, making it nearly impossible for said families to save money while a major breadwinner is receiving UI.

incentives to work had as much to do with low wages and job quality as with high benefit levels.[23]

The firms that raised the issue of health insurance costs, however, tended to be much more specific in their critiques and in the impact of rising costs on their firms. In many cases, the aging workforce issue exacerbated the challenges of managing rising health care costs. In one instance, a small manufacturer had two employees diagnosed with different forms of cancer in the same year. The following year, the insurer dropped the company, and the cost of the new policy was nearly double that of the old one, forcing all employees and the employer to pay considerably more for less coverage. An employer in a different focus group relayed a similar story, and then stated, "I feel badly about this, and it's probably illegal, but when I'm hiring, I do look at age. The experience is a plus, but I have to weigh the relative costs associated with hiring experienced employees."

In some cases, age was not linked to increases in the cost of health insurance, but firms complained that searching for reasonable rates seemed excessively time-consuming and frustrating. And, as one respondent confessed, "I don't like telling my employees we're changing policies every year (and sometimes doctors), and, frankly, as an employee, I don't like changing policies every year either." Most firms that raised the issue had marginal knowledge of federal efforts to provide incentives for Association-based Health Plans, but were not optimistic about them.

Wanted: A Better Credentialing System (or something that helps us translate…)

While some respondents expressed great enthusiasm for credentialing, others did not. However, both groups could agree on the problem: there is no simple way to translate skills and experience across industries or sub-sectors in a way that provides employees with currency (portable assets in the form of skills) and employers with good information about what prospective employees can and cannot do. The problem is one of translation—between employee and employers, and between employers and employers. One person's master craftsperson is another's handyperson. Some employers argued that the problem has become worse during the past three years because so many people looking for jobs are seeking assistance with their resumes – they "inflate" or "pad" them, and make it more difficult for employers to accurately match them to appropriate jobs.

[23] This discussion—in its multiple manifestations—illustrated a more general pattern in most of the focus groups and in the interviews—there was a significant difference in the perspectives of firms that seemed solid and forward looking than those in crisis. Crisis-oriented firms were almost singularly focused on cutting costs and generating revenue through any means possible, including state grants and subsidies. They tended to be less aware of labor market dynamics (prevailing wages, skill sets, new technologies) and less forward looking than firms on more solid footing. On occasion, the contrast between the two archetypes was marked.

A few employers noted that they had introduced whole batteries of tests[24] (some having nothing to do with skills), simply to create criteria on which to veto applicants who have nearly identical resumes.

Conclusion

While solutions to complex workforce issues are not simple or inexpensive, many firms participating in the project provided valuable context and guidance for developing policy and program recommendations for improving the current state of affairs—for firms and workers. Most also understood that they need to be engaged in operationalizing potential solutions. For this, we thank them and look forward to developing responses to critical needs in partnership.

[24] Importantly, many employers reported being better able to screen out individuals with specific skills deficiencies, or drug and alcohol issues, or even bad credit. Worryingly, as these kinds of screening devices become ubiquitous, individuals who do have one or more of these employment barriers will face increasingly limited job prospects.