

Where Will the Next Jobs Be?

A Study of the Context of Occupations in Northwest Ohio

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Executive Summary

This study examines the changing context of employment in Northwest Ohio. In addition to examining the changing nature of occupational opportunity or job availability, it evaluates the mechanisms for assisting and enabling individuals seeking to be productive members of the contemporary economy. It is based on an integration and analysis of data from three different surveys, and reworking of regional data from two annual studies performed nationally and regionally by the federal government.

The major findings of the study include;

1. Job openings will continue in the skilled trades, information technology sector, health-related areas, and numerous low-level service sector occupations. (List of particular jobs in Appendix C).
2. Many of the skills identified as needed and most sought-after by employers, involve conceptual and interpersonal skills, not simply the acquisition of task specific training. Agencies engaged in workforce development must include the promotion of social, conceptual, attitudinal, and adaptive skills, and not just rote skills when training workers.
3. Occupational training is an on-going task and both current and future employees need to engage in continuous improvement and training, and an expansion of their skills repertoire if they are to retain employment.
4. Outsourcing of work from major firms will continue. Therefore, training in problem solving, leadership, and general business acumen, is essential for securing employment within firms and to become small business owners and/or independent contractors.
5. There is a need for on-going coordination between firm executives and human resource personnel, and for more effective human resource planning so as to insure a supply of qualified workers.

Overview and Context

The U.S. Bureau of Labor Statistics (BLS) has estimated that between 1998 and 2010 total employment will increase by fourteen percent. Over that same period, however, the supply of workers is expected to grow by only twelve percent. Between 1998 and 2010, the workforce aged 45 to 64 will grow faster than any other age group, and the number of 25-34 year olds will decline by 2.7 million, reflecting the decreased birth rate of the late 1960's and early 1970's. In short, a dearth of 10 million workers is projected to occur nationwide within the next 10 years. The largest job growth nationwide will be in the service and healthcare industries, with 35%-100% increases in computer-related occupations, nursing and home health aides, medical assistants, security-related occupations, and customer service representatives (Bureau of Labor Statistics, *Employment Projections, 2000-2010*).

The projection for Northwest Ohio is as bleak. In the last five years, the percentage of employable workers has dropped overall by 1.3%. Most of the decline has been in the manufacturing sector. Although Toledo and the surrounding area can expect to add almost 41,000 jobs by 2008, the majority of them will be in low-paying occupations within the service sector (*The Toledo Blade*, August 31, 2001). The fastest-growing occupations locally are expected to be in criminal justice, construction, and healthcare fields, according to recent projections by the BLS. Unfortunately, these jobs also produce lower wages for Northwest Ohio residents than the traditional manufacturing jobs of the past. For example, a three-part study of economic development in the region has indicated that Lucas, Wood, and Fulton counties have had their average income per resident drop 0.2 percent from 1999 to 2000, after inflation adjustments (*The Toledo Blade*, May 19, 2002). Many of our more talented workers are leaving in search of higher wages, as well as more challenging occupational opportunities.

In addition, the technological advances that have been the hallmark of the end of the 20th century are poised to make some jobs obsolete--for example, switchboard operators, tenders of typesetting machines, clerks, secretaries, bank tellers, even many manufacturing jobs that we've taken for granted for decades. But even for many other jobs, a rapidly evolving work environment in which the skill demands of jobs are changing can lead to very real anxiety and insecurity for workers about losing their jobs. Despite one of the best labor markets in a generation, more and more workers report that they are fearful of losing their jobs. Our education and training systems have been feeling the pressures of a great number of these workers striving to keep up. Moreover, business and government leaders are somewhat vague about what future skills will be required and how they will insure a supply of workers who will have them.

These concerns and pressures are likely to remain intense because there is nothing to suggest that the trends toward a greater conceptual content of our nation's output and, thus, toward increased demand for conceptual skills in our workforce, will end. The rapidity of innovation and the unpredictability of the directions it may take imply a need for considerable investment in human capital. Workers in many occupations are being

asked to strengthen their conceptual and human interaction skills. Basic credentials, by themselves, are not enough to ensure success in the new workplace. Workers must be equipped not simply with technical know-how, but also with the ability to create, analyze, and transform information and to interact effectively with others. Moreover, learning in both formal and informal settings will increasingly be a lifelong activity.

Numerous studies point out that workers in the United States are not prepared for success in the digital economy. For example, a recent study conducted by the Organization for Economic Cooperation and Development reported that 40% of the U.S. population does not have the literacy skills required to perform successfully in a complex knowledge-based economy. A similar finding by the Hudson Institute's Center for Workforce Development indicates that sixty percent of jobs will require skills that only twenty percent of the workforce currently possesses.

Based on the evolving nature of work and its skill and knowledge requirements, this study sought to identify the changes in the Northwest Ohio labor market supply and demand over the next five to ten years. These changes should help government, communities, education, and businesses better identify the demand for, and the sources of, skills and competencies required of 21st century workers. The goal of this study is to suggest a micro-level (firm and workforce) strategy to maintain good jobs in NW Ohio, and to help create the pool of human capital that will help attract more of these jobs to our region.

Methodology

In order to assess the current and future needs of the Northwest Ohio labor market, we used several data sources:

- First, the joint Toledo Area Chamber of Commerce and Regional Growth Partnership study results (October 2000) were used as a basis for understanding general trends and as a starting point for additional questions that needed to be asked.
- Second, two surveys were undertaken to assess the projected labor needs of area organizations and industries. Surveys were sent to the Toledo Area Human Resource Association membership, consisting of over 400 human resource professionals in northwest Ohio counties (e.g., Lucas, Wood, Henry, etc.), and the Employers' Association, which consists of approximately 600 member organizations in various industries and of varying sizes in northwest Ohio.
- The original RGP/Chamber study had 224 respondents, while the combined respondents from the Employers' Association and TAHRA totaled 73. A variety of industries was represented: manufacturing, retail, health care, financial services, construction, employment services and agencies, hotel/motel, not-for-profit, transportation, government, education, and organized labor. The

respondent organizations were fairly evenly represented by size¹, with the majority having more than 100 employees. Targeted questions included the following:

1. Jobs and skills that respondents had difficulty filling currently
 2. Jobs and skills projected to be difficult to fill in the next five years
 3. The current and projected recruitment sources for those jobs, and
 4. The jobs that respondents would project they might outsource in the next five years.
- Third, local trade union leadership provided data on the current age, years of service, and projected retirements in the area over the next five years for their union members.
 - Finally, we used a secondary source of data, the Annual Demographic File (ADF) of the Current Population Survey (CPS) from the Department of Commerce, to create a profile of the area workforce in terms of demographic characteristics. The CPS is a national survey (conducted by the U.S. Bureau of the Census) of some 60,000 households and approximately 100,000 household members. The survey is conducted monthly, and the Annual Demographic File published each March contains detailed information on earnings and other characteristics of workers' respective jobs in the previous year. The ADF data contains information on workers' personal characteristics (including age, race, gender, marital status), job characteristics (occupation, industry, class of worker and, earnings), as well as their geographic location (state, with an Metropolitan Statistical Area indicator). Using ADF data for 1993 through 1998, we attempted to create a profile of workers in Michigan and Ohio MSAs. (The Toledo MSA data were sufficiently sparse to be inadequate for generating reliable descriptive statistics of workers, so southeastern Michigan MSA data were also used.) These profiles included age-group distributions of workers by industry division (1-digit SIC) and major (2-digit) occupation code.

Together, these four data sources provided information about the demographic profile of local workers, the quantity and description of jobs at risk for turnover, the industry, location, and size of employing organizations, and the projected need for particular competencies through the first part of this decade. In the next section, the combined results from the surveys and union employment information are presented.

Survey Trends

Because the responses from the current two surveys were sparse and over-represent larger firms, it is inappropriate to employ elaborate inductive statistics. However, the results presented hereafter do note the current major trends, and evaluation of these results in conjunction with the 2000 RGP/Chamber of Commerce results allow for more valid observations.

¹ Since there are many more small firms than large ones in the data, the number of respondents that were equitably distributed would indicate that in terms of representation, the ideas and needs of smaller firms may be under-represented in the sample in the subsequent responses.

After evaluating the data from the 2000 RGP study, along with the TAHRA and The Employers' Association respondents, the following conclusions can be drawn:

1. For the next five years, *the most sought-after skills* fall into three categories:
 - **Conceptual skills**---those skills requiring a person to see complex relationships, use data to draw conclusions and make inferences, and provide long-range planning and strategies for making human resource and financial decisions.
 - **Technical skills**—those skills requiring a person to have specific functional or technical expertise in a discipline area
 - **Interpersonal skills**—those skills requiring a person to interact, solve problems, and work with others on a daily basis. (**Appendix A** describes the specific skill sets identified for each category by the respondents)

2. The most important and *absolutely necessary job requirements* identified by respondents, in descending order of necessity (from most to least necessary), were;
 - a. Reading and Writing MOST
 - b. Having a High School Diploma or G.E.D.
 - c. Coping with Challenging and Stressful Situations
 - d. Working with Basic Computer Programs
 - e. Engaging in Creative Problem-Solving with Others
 - f. Dealing with Difficult Personalities
 - g. Working on Collaborative Projects with Others
 - h. Working without Direct Supervision
 - i. Providing Feedback to Others
 - j. Motivating Others
 - k. Organizing and Scheduling
 - l. Resolving Conflicts
 - m. Engaging in Continuous Learning
 - n. Repairing Machinery
 - o. Fabrication and Construction
 - p. Operating Hand Tools. LEAST

Interestingly, *most of these requirements are in the interpersonal and conceptual realms, rather than the technical requirements for jobs*. This indicates that the current training of current and future employees must be adapted to include a larger emphasis on these skills and competencies. Developing these skill sets will require a commitment from employees, organizations, and educational institutions/training centers to go beyond the traditional technical training and memorization of facts to include higher-level exercises, case studies, role plays, internship/practicum experiences, and extensive coaching and feedback sessions. Requirements for computer-based training, self-paced development plans, and continuous learning should be the norm, rather than the exception, over the next five years. These are steps that individual firms can take

(alone or in collaboration with educational institutions) without reliance upon government assistance or actions by regional development agencies.

3. None of the respondents thinks that the recruitment sources that they now use will wane in use, although most believed that ***Internet recruitment will increase substantially***. Employee referrals and in-house posting, along with traditional newspaper advertisements and employment agencies, are still the recruitment methods of choice and are projected to stay that way over the next several years.

Appendix B lists the current and projected recruitment sources utilized by the respondents in order of importance from “most” to “least” important. Since internal recruitment and referral by existing employees are expected to be significant sources of employees, building the skills of current workers in preparation for advancement is crucial. Further, creating a culture of critical thinking and continuous improvement is necessary for both preparing current workers and for shaping their thinking about potential candidates for new positions. Thus, it is imperative for organizations to focus on skill investment in their current workforces to insure the availability of future skills requirements.

4. If the trend continues for the next five years, there should still be sufficient number of unskilled and semi-skilled workers available in the workforce (e.g., painters, roofers, sheet metal workers). However, the skilled trades (e.g., bricklayers, carpenters, masons) are likely to lose between 15% and 20% of their membership in the next five years. Thus, the importance of ***attracting apprentices to the skilled trades is vital in maintaining such positions over the next two decades***. Organizational viability will be severely impacted by a loss of skilled journeymen in these areas if recruitment and training of new skilled workers is not undertaken within the next year or two. Firms should take steps now to help the unions create more demanding apprenticeships, including courses oriented at improving the culture of innovation and problem-solving that can be more generally applied across job sites.
5. **Appendix C** lists the respondents’ views on what they perceive to be the most difficult jobs to fill now and over the next several years. These are not listed in any particular order within the groups of Manufacturing, Service, Health Care, and Technical Occupations. Several engineering and information systems positions are also listed, as are jobs requiring only the basic skills, such as housekeeping, janitorial, and clerical. In this latter case, it may be important for organizations to utilize alternative sources of employees, such as Goodwill Industries, Lott Industries, and other sheltered workshop and job training programs that provide reliable, trained workers for companies across northwest Ohio.
6. One finding of interest was in the area of outsourcing. **Appendix D** indicates the jobs that respondents would seriously consider outsourcing over the next five years. The list is an eclectic mix of professional and technical occupations, as

well as service providers. The implication of an increasing tendency for outsourcing is that these *workers will, in effect, be small businesses or independent contractors*. Thus, *small business services will need to grow to support the need for health and liability insurance, retirement planning, as well as administrative and technical support for these new businesses*.

One approach to this need for outsourcing may be addressed by involving local government and educational institutions in creating and delivering training for workers so that they can learn to become contractors, vendors, and entrepreneurs. Although conventional thinking would perceive such training as a threat to existing businesses because of the loss of workers to their own organizations, there has been huge growth in entrepreneurial ventures. In 1969, there were only 274,000 new corporations started per year; in 1995, the annual number had reached 770,000, with many of those firms begun by women (reported in the Global Entrepreneurship Monitor 2000 (GEM), a 21-country study of entrepreneurship and economic growth, 2000).

Dr. Arnold Cooper of Purdue University reports that there are various reasons for this growth, among them include the:

- a. Continuing high rates of change. Our changing world creates new opportunities for new firms.
 - b. Continued growth of the service sector of the economy. The service sector is the highest growth area for new firm formation.
 - c. Increasing number of "virtual corporations" in which firms outsource not only support functions, but also basic activities such as producing and selling. This outsourcing creates opportunities for entrepreneurs.
 - d. Positive climate for small businesses. A survey by the National Federation of Independent Businesses found that the American public believes that small business is primarily a positive influence on the way things are going in this country.
 - e. Growth in international business opportunities for both Americans and international entrepreneurs. Global trade is growing at six percent a year, more than twice as fast as the world GNP is growing.
7. ***Training in innovation, creativity, problem-solving, and general business acumen could help with both the creation of new firms*** to take advantage of outsourcing and sub-contracting, as well as the evolution of current organizations engaged in "intrapreneurial" improvements. More importantly, the full employment of individuals and the increase in regional businesses and partnerships for Northwest Ohio could be enhanced by encouraging, rather than by restraining, the entrepreneurial spirit of all our citizens.

Current Population Survey (CPS)

There are two basic sources of secondary data on the labor force in the Toledo area, as well as the overall United States. Household data are collected from a variety of surveys, including the Census Bureau's decennial Census of the Population, and its monthly Current Population Survey (CPS) and Survey of Income and Program (SIPP). The decennial Census is the richest source of labor force information, but, as its name implies, is undertaken only every ten years, and public use data become available at least a year after the reference year. The CPS is undertaken monthly and its data become available with a considerably shorter lag. But, unfortunately, the CPS data are less useful when disaggregated in any manner, particularly geographically, because the data are collected from a sample, which is primarily designed to obtain national labor force estimates. (The SIPP data are derived from a still smaller national survey, effectively precluding them from useful empirical inquiries at state or local levels of disaggregation.)²

Household data have some strength over establishment-based data. Household data often contain data on demographic characteristics (such as age, gender, race, marital status, and occupation) that are typically not collected by establishment surveys. A possible limitation of household surveys concerns the accuracy of data on employer size, industry, and occupation, which are self-reported by individual respondents. The following results are based upon tabulations of data from the household-based Current Population Survey for the eight-year period between 1992 and 1999.

The Current Population Survey Results

The Current Population Survey (CPS) is a monthly survey of some 50 to 60 thousand households and approximately 100,000 household members. The CPS is conducted by the U.S. Bureau of the Census, and the U.S. Bureau of Labor Statistics uses the CPS data to produce household-based estimates of the U.S. labor force, unemployment rate, etc. Every March, the CPS includes a supplementary set of questions regarding different characteristics of workers' respective jobs of longest duration in the previous year. This information includes class of worker (e.g., private industry, government, or self-employed), earnings, occupation, industry, union member status, and usual weeks and hours worked during the reference year. The CPS also contains information on individuals' residential locations, including state and, if applicable, metropolitan statistical area (MSA).

Using the March Income Supplement data of the CPS, we calculated annual estimates of the number of workers by age group, occupational group, and industrial sector for the

²The Census Bureau is in the process of developing the American Community Survey (ACS), which promises to provide a much greater volume of data on the labor force and general demographic composition of specific communities than the CPS. ACS data for the Toledo area have been collected but are not yet available for public use.

Cleveland, Detroit, and Toledo (CDT) MSAs (combined) over the 1992-1999. The goal of these calculations is to provide a profile of the pool of workers in the CDT area by age, occupation, and industrial sector.

The March Income Supplement data of the CPS reveal no significant time trends in the age, industry, or occupational composition of the CDT area workforce during the 1990s. For example, about 30 percent of workers of all ages in the CDT area are affiliated with goods-producing industries, with the other 70 percent associated with service-producing industries. When broken out by age, some additional patterns emerge. For example, workers under age 35 comprise roughly 42 to 44 percent of all workers in the CDT area, but account for only about 35 percent of workers in good-producing industries. Workers under age 45 represent roughly 70 percent of all workers in the CDT area, but when broken out by industry sector, account for about 65 percent of workers affiliated with goods-producing industries and roughly 72 percent of workers affiliated with service-producing industries.

Between 25 to 30 percent of all workers in the CDT area are affiliated with traditionally blue-collar occupations, with similar proportions affiliated with professional and executive occupations. Approximately 45 percent of workers in the CDT area are attached to sales, administrative support, and service occupations. The youngest group of workers in the CDT area (those under age 35) is somewhat over-represented in sales, administrative support, and service occupations, occupations that include a number of entry-level jobs, and under-represented in professional and executive occupations. The proportion of blue-collar workers between the ages of 45 to 54 years rose slightly in the 1990s, with an attendant, slight decline in the proportion of blue-collar workers between the ages of 35 and 44.

Overall, these results reveal no evidence of any impending supply-side shortages of labor in the CDT area in terms of industry or occupation group. It's probably safe to conjecture that the industrial and occupational composition of the workforce in the CDT area will be largely demand driven--i.e., driven by qualitative changes in employment opportunities. Further, there is a significant "graying" of the workforce. It is clear ***that few young people are being hired in manufacturing to replace retirees***. However, new technologies are being implemented to produce goods, and these require additional and higher levels of skill and education. Therefore, it is imperative that *continuous training occur to both bring current workers up-to-date with the new technologies and to entice younger workers to enter these occupations* because of the more challenging requirements for innovation and technical expertise.

Overall Conclusions

It is apparent that our survey respondents are anticipating little change over the next several years with recruiting and filling jobs. In essence, what they are having trouble filling now are the same jobs that they anticipate having difficulty with in the future. One limitation with this study may be that the respondents may not be privy to strategic information about what their organizational leaders intend to "focus on" in the next

decade, and therefore anticipate little change in the products, services, markets, and composition of their organizations. This is potentially problematic, because their responses to the three surveys may be based on incomplete or incorrect data about what types of skills, knowledge, and jobs will be required in the next several years. This apparent disconnect between human resource professionals and the top management in organizations may ultimately result in goals, strategies, and plans being created but unable to be implemented because of poor workforce planning and forecasting.

On the other hand, the data from the population survey reveals that no appreciable shortage in workers is anticipated in Northwest Ohio. The census data, of course, do not measure the projection of types of jobs; rather, they look only at the number of available workers.

If, as we suggest, organizational needs will drive the employment needs, then it becomes crucial for human resource professionals to understand the future requirements of their organizations. This, then, mandates that top management in organizations partner with their human resource professionals to assess both the demand for jobs and skills, as well as the projected supply. It is apparent that without this shared knowledge, top managers may be attempting to take their organizations in directions for which few workers possess the skills and competencies to help achieve organizational goals.

The former U.S. Secretary of Labor, Alexis Herman, often said that we do not have a worker shortage; we have a skills shortage. Our study points out that understanding the skills required for the next decade is crucial, but as important is the focus on *making sure the workers who are available possess those skills*. A focus on training and education that is based on the strategic direction of Northwest Ohio organizations seems to be crucial in planning for successful implementation of strategies and achievement of goals. Investing in human capital means that workers must be equipped not simply with technical know-how, but also with the ability to create, analyze, and transform information and to interact effectively with others. This is both the responsibility of the individual workers and the employing organizations.

Individuals have historically tended to acquire skills and knowledge “just in time”; that is, as jobs change, the employees and potential employees gravitate toward learning just what they need to know to get the job in the first place and then be competent at enacting it *as it currently is*. The new workplace, however, is changing that need, and the anticipation of what will be required is not always clearly communicated by organizations to current and potential employees. Thus, part of the responsibility also rests with organizations to provide realistic appraisals of the current and future skill requirements for jobs, and then to help individuals work toward development of those needed skills by providing incentives, training and educational opportunities, and succession planning and development tools. Educational institutions also must be willing and able to retool their faculty and to partner with organizations to provide the necessary training and education for the future.

Recommendations

In keeping with the conclusions noted above, we offer the following recommendations:

1. **Current employer, professional associations, and government and non-profit economic development agencies should encourage workers at all levels to undertake additional education.** Such activity is crucial if workers are to improve their ability to remain current and prepare for future advances in their occupations and professions. As noted before, such training must be continuous, familiarizing current workers with the new technologies and enticing younger workers to enter these occupations because of the more challenging requirements for innovation and technical expertise those technologies require. Creating the opportunity for such training is the responsibility of all interested parties, and all parties interested in the future of the region.
2. **Agencies must require that workforce preparation include attention to, and acquisition of, conceptual and inter-personal skills, and not simply job-specific training.** To be able to adapt to the changing workforce, employees need skills for adapting and innovation, not just rote skills specific to job, firm, or industry. Similarly, since outsourcing of positions is inevitable, **training in problem-solving, leadership, and general business acumen is essential for maintaining employment**, enabling “intrapreneurism,” creating new firms, and promoting regional economic development in Northwest Ohio.
3. **Top managers of organizations in Northwest Ohio should partner with their human resource departments to conduct workforce analysis.** This analysis should be driven by the strategic plans of the organization. This means that for each strategy that involves employees, a demand and supply forecast for the types of available workers with the requisite skills should be conducted.
4. Using this workforce forecast, **firm executives should require human resource planning that mirrors the overall organizational strategic plan be undertaken.** Human resource planning would specify the recruitment, development, and retention strategies to insure the supply of qualified workers to help the organization achieve its goals is available. Examples of such strategies may be internal (e.g., succession planning, leadership development activities, training needs analysis, compensation and incentive planning, etc.), or they may be external (e.g., targeted recruitment strategies, identification of outsourcing opportunities, partnerships with other organizations and educational/training institutions, etc.).
5. Finally, **firm executives should annually require evaluations and updates of the human resource plans**, again in concert with the organizational strategic planning process. Without the connection between the organization’s needs and the availability of qualified and interested workers, an organization has little hope

of successful achievement of its goals and objectives.

We are encouraged by recent statements by progressive organizational leaders that argue the importance of strategic partnerships with their human resource departments. This study has pointed out that identification of jobs and skills requirements, absent an understanding of the particular organization's goals and plans, is counterproductive. It is hoped that organizations in Northwest Ohio adopt these recommendations so that our region is prepared for the certain changes in the next decade and beyond.

Appendix A

Conceptual, Technical, & Interpersonal Skill Requirements for 21st Century Organizations in Northwest Ohio

CONCEPTUAL SKILLS	TECHNICAL SKILLS	INTERPERSONAL SKILLS
Planning Skills Self-Management Organizational Skills Attention to Detail Leadership Skills Punctuality Customer Service Seeing Interrelationships Writing Skills Research Skills Work Ethic Ability to Multitask Problem Solving Skills Decision Making Skills Critical Thinking Time Management Project Management	Manual Machining Data Entry General Computer Skills Engineering Welding Electrical Mechanical Nursing Blueprint Reading & Interpretation Sales Skills Chemical Synthesis CAD/CAM Supervisory Skills Grant Writing Skills Financial Management	Relationship-building Skills Caring for Others Conflict Management Empathy Teamwork Mediation Skills Motivation Skills Emotional Stability

Appendix B

Most Successful Recruiting Sources, 2001-2005 (Ranked most to least useful)

1. In-house/Internal Postings
2. Employee Referrals
3. Networking
4. Internet Job Search
5. Networking
6. Local Newspaper
7. Temp-to-Perm Agencies
8. Ohio Job Service
9. Word-of-Mouth
10. Walk-ins
11. Employment Agencies and Search Firms
12. College and University Career Placement Centers
13. Government Agencies
14. Radio/Television
15. Professional/Trade Publications
16. Professional Groups
17. Private Industry Collaborative
18. Unions
19. Churches
20. Yellow Pages
21. Open Houses

Appendix C

Most Difficult Positions to Fill, 2001-2010 (Unranked, but Arrayed by Categories)

Technical Occupations

Project Estimator
Product Designer
Project Manager
IT Director
CAD/CAM Operator
CAD/CAM Designer
Technical Service Manager
Process Engineer
Design Engineer
Advanced software engineer
Project Engineer
Mechanical Engineer
Chemist
Electrician
IT Support Technician

Manufacturing Occupations

Plant Manager
Quality Assurance Technician
Machine Operator
Senior operations supervisor
Machinist
Tool and Die Maker
Welder
Maintenance Mechanic
Warehouseman
Truck Driver
First-line Supervisor
Dispatcher
Production Operator
Millwright

Service Occupations

Corrections Officer
Receptionist
Customer Service Reps
Development Officer
Closing Agent
Call Center Supervisor
Early Intervention Specialist
Purchasing Agent
Food Service Worker
Legal Assistant
Janitor/Housekeeping
Legal Assistant
Cook
Housekeeper
Showroom Clerk
Accountant
Sales Account Manager
Sales Representative (Outside)
Sales Representative (Retail)

Health Care Occupations

Radiology Technician
Registered Nurse
Nuclear Medicine Technician
Respiratory Therapist
Home Health Aide
Direct Care Provider
Certified Nursing Assistant
Licensed Social Worker
Job Developer
Licensed Practical Nurse

Appendix D

Jobs Most Likely to Be Outsourced, 2001-2005 (Unranked)

Installation of Equipment
Fabrication
Market Research
Chemical Operation
Construction projects
Maintenance
Engineers
Food Operations
Web Page Design
Housekeeping
Human Resources
Payroll
Tooling
Packaging
Machining and Stamping
Graphic Arts
Trucking
Nursing
Physical Therapy
Occupational Therapy
Psychological Services
Accounting and Auditing
Engineering
Software Customization
Heavy Equipment Operation
Grant Writing
Material Treatment