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The Ohio State University

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CUSTOMIZED TRAINING SERVICES: CONCERNS OF OHIO INDUSTRY ON DEPARTMENT OF DEVELOPMENT SERVICES BETWEEN 1983 - 1985

DISSERTATION

Presented in Partial Fulfillment of the Requirement for the Doctor of Philosophy in Graduate School of the Ohio State University

By

Thomas R. Snyder, B.S., M.A.

The Ohio State University

1986

Dissertation Committee:

James E. Sage
A. J. Miller
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ACKNOWLEDGMENTS

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VITA

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(1977). Affective Education--A Program to Promote Student Self-Actualization and Human Relations Skills, Columbus, Ohio.

FIELD OF STUDY

Major Field: Educational Policy and Research
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CHAPTER I

INTRODUCTION

Background and Setting

Internationally.

The productivity of manufacturing industries in the United States is an important economic issue and it is related to our competitiveness in the international marketplace. The trends displayed in Table 1 illustrate the rate of average change in annual productivity of leading world producers between 1960 and 1980.

Table 1

Average Annual Productivity Rates.

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>United States</td>
<td>3.4%</td>
<td>1.3%</td>
</tr>
<tr>
<td>Canada</td>
<td>4.7%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Japan</td>
<td>10.5%</td>
<td>6.4%</td>
</tr>
<tr>
<td>France</td>
<td>5.8%</td>
<td>4.4%</td>
</tr>
<tr>
<td>West Germany</td>
<td>5.5%</td>
<td>4.5%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>4.3%</td>
<td>3.8%</td>
</tr>
</tbody>
</table>

By comparing international trends, productivity in the United States by 1980 had declined. This was also a general trend in other major industrial nations. In 1981, as productivity declined in the United States, Canada, and Germany, productivity in Japan and Italy increased more than six percent. Employee compensation also increased in most countries during this period, but it was generally offset by gains in consumer prices (Capdevielle & Alvarez, 1981). During 1981 output per employee hour in manufacturing generally improved and the unit labor cost moderated in the United States and many other major industrial nations (Nadler, 83). By 1982, productivity and manufacturing increased between one and five percent in the United States, Japan, and eight of the nine other major industrial countries; however, those gains in labor productivity resulted almost entirely from reductions in employment hours (Alvarez & Cooper, 1984).

The 1972 formation of the International Federation of Training and Development Organizations (IFTDO) and its continued growth since then is an indication of the seriousness and international scope of the problem and its relationship to developing human resources to increase productivity (Lee, 1982). This group reported that the problems associated with productivity within the United
States were heightened by the increase of productivity in other major manufacturing countries.

Japan was one of the countries which demonstrated a strong increase in productivity. Japan's manufacturing company leaders view their human resources as a major asset in which their company must invest; an investment just as important as its plants and equipment. The Japanese view their greatest asset as a trained, motivated labor force that is managed with great skill and daring. This Japanese philosophy has not been a guiding one in the United States (Striner, 1982).

Nationally,

Since the mid-1970s there has been an increasing concern in the United States about the problems associated with productivity, unemployment, trade deficits, and inflation. The rate of productivity gain within the United States approached zero in late 1977. Between 1978 and 1982 it hovered around zero (Striner, 1982; Hayes & Wheelwright, 1984). This decline in rate of production has also had serious implications on unemployment rates, rates of inflation, and loss of domestic and foreign markets' competitiveness for United States manufacturing companies. During this period, manufacturing competitiveness also slipped in many United States
industries (Wheelwright, 1985). To illustrate this point even more, Jack Grayson, chairman of the American Productivity Center, referenced the history of failed empires, such as Greece and Rome, to illustrate the seriousness of the United States' decline in producing goods and products competitively (Galagan, 1984).

In a National Center for Research in Vocational Education publication, Dr. Anthony P. Carnevale (1982) stated:

Unemployment is bad politics. It is even worse economic policy. The losses in human capital (and eventually in economic productivity) are mammoth. Current estimates suggest that as much as 30 percent of our current, precipitous drop in productivity results from underemployment and unemployment of human capital. (p. 4)

Dr. Carnevale says that the current anti-inflationary policies of Congress discourage United States companies in developing their human capital. These policies would have to throw one million people out of work for three years to reduce inflation by one percent. By keeping one million people unemployed the cost to the U.S. taxpayer is $25 billion a year with approximately $10 billion of that $25 billion used in various support payments and $15 billion in lost revenues (Carnevale, 1982).

Another economic cost of unemployment is psychological. Unemployment promotes powerful negative
economic expectations or economic insecurity. Risk taking is reduced when the company finances are on the edge of economic necessity (Carnevale, 1982).

In 1983 if one were to survey practitioners and students of management in the United States on the competitiveness of United States manufacturing industries, there would have been little doubt that a majority would have responded that the United States was still in serious trouble in several major industries. By mid-1984 Steven C. Wheelwright (1982) predicted that a similar survey might have found a smaller group responding in like fashion. Wheelwright goes on to say that increased profitability of many companies has been used as a sign of good health in the United States manufacturing industry and that the relative competitiveness of the sale of United States manufactured goods may be masked by the critical swing of manufacturing competitiveness. Wheelwright feels those swings do not change the long term prospect for such competitiveness.

Varying degrees of unemployment, chronically low per capita income, and general decline in the quality of life have typified more than 40,000 communities throughout the United States. Many of these communities concluded that they could solve these types of problems if they could
attract new industries and encourage expansion of existing industries (Tuttle & Wall, 1979). This process was exemplified by the rapid economic expansion in the sunbelt. Throughout the 20th century, especially during the period 1954 - 1972, industrial movement was from the northeast to the south and southwest. This process was promoted through policies and activities of state governments in the sunbelt to support this employment migration (Kelton, 1983).

An important consideration for an industry deciding whether it should relocate or expand its manufacturing operation is the availability of an adequate labor force. This decision was influenced further by the ability and willingness of a community to provide "customized training" to manufacturing companies (Brant, 1982; Shoemaker, personal communication, 1985). Many states and communities have organized industrial service programs to assist industries in obtaining quality employees. During the 1960s and 1970s a number of southern states established comprehensive industrial service programs for manufacturing industries in their states (Galagan, 1984; B. Shoemaker, personal communication, December 29, 1985; Tuttle & Wall, 1979).
The above service programs and the respective services were targeted to assist smaller, marginal industries that typically hired its employees from agriculture. But as industrial development occurred in these states, higher wage industries were able to recruit their employees from the marginal industries. Over a period of time the work force would tend to upgrade itself. This concept is known as the "start up" industry training concept. The concept includes simultaneously creating jobs and recruiting, selecting, classifying and training workers in advance of those specific jobs (Van Cleve, 1976). Van Cleve says the process was used to encourage manufacturing type industries to relocate in these states as well as to upgrade the skills of a typically rural work force.

As state governments began to provide these service programs to industry, education at all levels became increasingly aware that it must become a more active partner in the economic renewal process. Education began to provide improved training services to the manufacturing industry in its communities and in the nation. This awareness of the need to become an active partner in the renewal process was increased due to the fact that 85% of America's work force finds employment in
companies that provide work for fewer than 500 people (Averill, 1983). These employers lack the resources to provide their employees with the needed training to keep up with a changing technology and their personal goals. Also the extent and duration of the recession during the mid-to-late 1970s caused politicians and state education leaders to give much attention to this problem. Politicians and state education leaders have indicated that the economic revitalization of their communities is a problem that does not lend itself to a quick legislative fix (Pipho, 1982).

Ohio.

Currently in Ohio attention is being given to the improvement of the linkages between educational institutions and industry. Ohio's governmental and educational leadership has involved the State Department of Development and State Department of Education, Division of Vocational Education as partners in an effort to stimulate economic growth. This growth will reindustrialize the manufacturing industry, maintain, and create new jobs for Ohio. The approach utilizes the provision of customized training services to manufacturers. The Ohio Vocational Technical Education Consortium has evolved over the past 10 years as an
innovative and largely successful mechanism for keeping the state abreast in this area of interstate competition of providing training to the manufacturing industry (Brant, 1982).

In 1979, with the recommendation of the Division of Vocational Education and the continuing support from the governor's office, the Ohio Department of Development and the Division of Vocational Education appointed a person to be responsible for the coordination of training services to manufacturers. The state was then divided into 23 formally organized consortia (corresponding to Ohio's vocational education planning districts) servicing the state of Ohio. The consortium is a quasi-public entity, and its members include persons such as those representing the chamber of commerce, CETA, business and industry, and other community leaders concerned with industrial training. Directors were hired by the consortium and were instructed to work with community leadership and top management in the manufacturing industry of their assigned district to broker training to industry (The Ohio Advisory Council for Vocational Education, 1982; B. Shoemaker, personal communication, December 29, 1985). As the program evolved, it became known as the Ohio Industrial Training Program operating under the following guidelines:
The Ohio Industrial Training Program is designed to provide customized training for new and expanding Ohio business and industry during critical start up periods. The Program stresses training for newly created jobs, but recognizes the importance of retraining or upgrading the skills of existing employees in an effort to retain present Ohio jobs.

The program is an economic development tool that allows Ohio to compete head-to-head with other states in the area of customized job training assistance.

To date, the Ohio Industrial Training Program has been managed through the collaboration of the Department of Development and the Division of Vocational Education, Ohio Department of Education.

The success of the Program is its ability to foster local and regional economic development by linking the expanding efforts of Ohio's vast public education system -- vocational, technical and university -- to provide needed industrial training.

Since its inception, the Program has been a constant brokering source of specialized training services for Ohio business and industry. The Program is implemented statewide through a system of education resource consortia coordinated by a local director. Consortium membership consists of business and educational leaders drawn from the local community.

Funds to provide training assistance for industrial clients are appropriated by the Ohio General Assembly. In addition, the Division of Vocational Education obligates a significant portion of its adult education funds to support the activities of the Program.

The concepts encompassed in the Program do assist business and industry and so support economic development in the State of Ohio (The Ohio Industrial Training Program: Policy and Operational Guidelines, 1984, p. introduction).
Since the formal organization of the Ohio Industrial Training Program, many services have been provided to manufacturing companies in Ohio. The scope of service simply stated represent brokering training related resources and services and/or providing training related resources and services directly.

Statement of the Problem

Ohio's manufacturing industries must remain productive and be responsive to the development of its human capital. This is especially true if the recent trends of unemployment, inflation, and trade deficits are going to be managed and if international competition is going to be increased. Ohio must remain competitive with other states to insure economic stability.

State agencies such as the Department of Development and the Department of Education, Division of Vocational Education are being responsive to HRD by their support of training through the brokering of training services and/or resources by the OITP for the manufacturing industry. This support is provided in different ways, but most frequently is in the form of funds to support training of manufacturers' employees and/or providing personnel for training services (Ventors, personal communication, 1986).
The delivery of training services to the manufacturing industries by OITP needs to be evaluated to insure that needed and quality services are being provided. Due to the relatively recent development of formalized training services at the national level for the manufacturing industry this research will look only at Ohio's program for providing service to its manufacturing industry.

Research Questions

The following research questions were answered using two research strategies. The questions investigated include:

First research strategy.

1. What do manufacturing companies' training coordinators believe are training services not provided by OITP that should be provided within the next three years?

2. To what extent do manufacturing companies' training coordinators agree regarding the training services not provided by OITP that should be provided within the next three years?

3. Of the training services identified by training coordinators as needing to be provided by OITP within the next three years, what is the manufacturing companies' training coordinators beliefs as to the priority of training services to be provided?
Second research strategy.

4. What training services were offered or available to manufacturers through OITP?

5. What training services were offered or available to manufacturers through OITP, but were not needed?

6. What training services were provided to manufacturers through OITP?

7. Were the training services provided by OITP useful to manufacturers?

Definition of Terms

**Productivity.** Productivity is measured by dividing the value of all of our economic output by the hours of work that produced it. Decisions on production processes, research and development, new equipment—all these management matters affect how many worker hours it takes to produce a product (Sinn, 1982; Striner, 1982).

**Human Resource Development.** Human Resource Development (HRD) is defined as organized learning experiences in a given period of time, to bring about the responsibility of performance change or general growth for the individual within an organization.

**Service Areas.** Service area, for this study, is defined as any function provided by OITP that facilitates the manufacturing industry in implementing training programs for its employees.
**Structural Unemployment.** Structural unemployment is defined as when many are without jobs, yet job vacancies go unfilled because of specific skill shortages (Brant, 1982).

**Double Dipping.** Double dipping is defined as a process of randomly selecting a percentage of nonresponders to a survey so that the researcher can make a concerted effort to obtain a 100% response from the selected nonresponders. The results from the "double dipped" group will be compared with the other responders to see if there is a significant difference in responses or if the groups are different (Miller & Smith, 1983).

**Limitations of the Study**

The problem investigated by this study employed a Delphi technique to answer part of the research questions. This technique, which is an appropriate choice for part of this study, does have some limitations. Many times the Delphi technique will encourage the responders to reach a compromise more than to reach a consensus (Mitroff & Turoff, 1975; Sherman, 1985). It is also difficult to achieve a clear understanding of why training coordinators believe as they do through a mailed questionnaire. Another problem can be that the investigator, in
facilitating the three round Delphi process, will inject his or her own interpretations of the responses of the training coordinators (Dillman, 1978). Forty training coordinators were selected at random to participate in the Delphi strategy. Twenty of the 40 selected training coordinators agreed to participate. This would limit the generalization of the results to only the coordinators that responded to the survey.

The results of the second strategy survey instrument used in this study can only be generalized to the training coordinators of OITP projects implemented in the state of Ohio during the time period from July 1, 1983 to December 31, 1988. Also the usefulness of the results of the second strategy survey and Delphi instruments is dependent on the extent to which the training coordinators understand the information requested and their willingness to respond.
Basic Assumptions

A Delphi technique was used to answer Research Strategy Questions 1, 2, and 3. This investigator assumed that the person listed as the contact person for the company served by the Ohio Industrial Training Program (OITP) was qualified or referred the survey to someone who was qualified to best respond to the survey.

Development of the second research strategy instrument and review and development of Rounds 1, 2, and 3 of the Delphi instrument utilized an advisory committee made up of directors of the Ohio Industrial Training Program. This investigator assumed that the OITP advisory committee members were knowledgeable of the services provided by OITP and representative of the total consortium.

Significance of the Problem

During the 1980s, manufacturers increased their use of high technology equipment such as computers, lasers, and robotics. It appears that 20 years later, the initial fears of high technology being a threat to people's jobs are becoming a reality with this increase in high technology. Machines are replacing people in the workplace. These jobs are probably being lost forever.
This phenomenon is referred to as "structural unemployment" by economists, and it is this new structure which has changed causing unemployment. Due to this phenomenon, it is not possible to treat unemployment by only making the economy better. New knowledge and skills need to be taught. This is a major challenge to business and industry and to educational institutions. Training and education will need to help people move rapidly from their old jobs and old skills to new jobs and new skills (Nadler, 1983). Addressing structural problems such as unemployment, underemployment, and misemployment is essential for economic growth and improved productivity.

The first hundred pages of Adam Smith's *Inquiry Into the Nature and Causes of the Wealth of Nations* dealt with labor. A well trained specialized labor force is the key to the wealth of any nation (Striner, 1982). To achieve a well trained, specialized labor force there will need to be more cooperation between government, education, business, and labor (B. Shoemaker, personal communication, December 29, 1985). This philosophy is reflected by the National Association for Industry Education Cooperation (NAIEC) in Washington DC, which says that the industry-education relationship is essential for upgrading human resources and is a critical factor in a community's
economic development in a postindustrial society. The

NAIEC's mission is based on two fundamental convictions:

1. That organized linkages and coordination between employers and education provide the best, most cost effective approach to improving the transition from school to the workplace, and, in turn, contribute to human resource/economic development; and,

2. That a comprehensive and structured community resources delivery system—the industry-education council—emphasizing staff/curriculum development and accountability in the schools, is essential to the improvement of basic education, work related attitudes, vocational skills, and academic standards (Clark, 1983, p. 54).

The mission of OITP is exemplified by the convictions of NAIEC. Therefore, OITP must stand ready to deliver training services to Ohio's manufacturing industry. By meeting these needs, OITP will assist Ohio industry in competing in the international market with quality, competitively priced goods. To accomplish this, OITP must understand which training services need to be improved and which services not provided by OITP need to be provided to the manufacturing industry in Ohio.
CHAPTER II
REVIEW OF LITERATURE

Introduction

This chapter presents a review of the literature reflecting (1) education’s role in providing training services for the manufacturing industry, (2) government and education sponsored customized training service programs, and (3) the Ohio Industrial Training Program. Much of the literature reviewed in this chapter will not discuss research studies or other documents relating directly to the research questions of this study. Very little literature was found that related to the research questions of this study. However, there was an abundance of literature describing what education’s role should be in providing customized training services to the manufacturing industry.

The first section of Chapter II will present a brief review of this literature describing vocational education’s role in providing customized training services to the manufacturing industry. This literature is presented to give the reader a general overview of the
thinking on this topic and to present the thinking as to
the continued need for customized training service
programs. Other sections in this chapter will present a
review of the literature discussing government and
education sponsored training and a review of the studies
concerning the OITP.

Education's Role in Providing Training

Education has always played a role in providing
training services to the manufacturing industry. This
role varies from state to state, between secondary and
postsecondary education institutions, between vocational
schools and colleges, and between on-campus courses to
in-plant training programs. Studies describing the role
of education in providing training services for
manufacturing industries reported results ranging from
very little change from existing roles to results which
represented major new efforts in providing customized
training services to manufacturing industries. Many of
these new efforts have evolved into highly structured,
permanently staffed, customized training service programs.
These customized training service programs were usually
and continue to be supported financially by state
educational and developmental agencies. Such efforts have
stimulated much discussion about what is the appropriate
and most effective role of education in providing training services to manufacturing companies.

Many efforts were the direct result of state governments attempting to retain and/or even increase the number of jobs within their respective states. State officials felt that if their state departments of vocational education could offer customized training services to assist manufacturing industries in reducing operating costs and improving productivity, that those companies would be more likely to remain in that state, or that other companies would relocate in their state. These companies would then provide additional jobs for the population of the state and thus improve local economic stability. Most literature reflects the notion that training would improve productivity, create new jobs, and thus improve the economic stability of not only individual states but of the United States.

"Vocational Education: Its Role in Productivity Improvement and Technical Innovation" (Drewes, 1982) was a report which investigated the changing roles of vocational education in productivity improvement. The report described the nature of productivity, the relationship of productivity and technology, other external forces on productivity, and the use of vocational education in
productivity improvement. Drewes (1982), presented a theory that major increases in productivity will come about as a result of increased investments in capital utilizing new technologies. Thus, when technology improvements are made to support and sustain economic growth and development, new skills are rapidly created, and others become obsolete. The implication to education is that skills must be developed quickly to take advantage of the competitive benefits of the new technology, and that vocational education has to be flexible and have the ability to react quickly and responsively to rapidly changing training needs within various manufacturing industries. Drewes goes on to say that state vocational education agencies can influence vocational education's contribution to productivity improvement and technology innovation with informed and creative leadership through customized training services provided to those industries.

A review of literature on this topic produced 29 documents which addressed the topic of vocational education's role in economic development, productivity, and job creation. Twenty-six of these documents presented a positive view toward vocational education being an important part of local economic development and job creation. Several authors noted that the role of
vocational education may be small, but one that is vital. A majority of these authors also stressed that vocational education must link up with state developmental agencies and industry in order to successfully meet the training needs of various manufacturing industries (Arns, 1981; Averil, 1983; Baily, 1984; Barton, 1978; Blake, 1981; Brooks, 1981; Bushnell, 1980; Clark, 1983; Gottlieb, 1983; Lustermen, 1977; McMullen, 1984; Liston & Ward, 1984; Lyman, 1981; Medoff, 1982; Morse, 1984; Musick, 1980; Nadler, 1983; Norton & Belcher, 1984; Paul & Carlos, 1981; Paulsen, 1981; Pipho, 1982; Resnick & White, 1979; Sredl, 1983; Starr, 1984; Tuttle & Alexander, 1978; Wolanski, 1984; Worthington, 1984).

However, not all authors were in agreement with the above notion that customized training services could create jobs or that it was the role of education to provide customized training to manufacturing industries. Robert Goodman's report "'Free Training': Special For-Industry" (1980) concluded that existing results from customized training programs raised questions concerning their effectiveness in creating jobs. He goes on to say that there is no significant evidence that demonstrates that the subsidized aspects of these programs play a critical role in expanding or maintaining jobs within a
state. However, he points out that the process of using state departments of vocational education and state departments of development funds to compete for local industrial development and jobs seems to result in job shifting rather than job creation.

The National Center for Research in Vocational Education and the National Association of Manufacturers (NAM) (Nunez & Russell, 1981) jointly conducted a survey of manufacturers to measure the views of NAM members about the effectiveness of vocational education, the collaborative activities between manufacturers and vocational education, and suggestions for improvement of vocational education. Two-thousand NAM members, representing a stratified random sample by company size, standard industrial classification, and geographic region, were mailed the survey. Almost 40% (775) of the sample responded to the survey and identified their position with their employer (see Table 2).

Companies that were currently involved in joint training activities graded the effectiveness of vocational education higher than those companies that were not involved. Large companies tended to be more involved and satisfied with vocational education.
Table 2

<table>
<thead>
<tr>
<th>Position of the Person Completing the Survey.</th>
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</tr>
</thead>
<tbody>
<tr>
<td>President or CEO</td>
<td>40%</td>
</tr>
<tr>
<td>V-P Industrial Relations</td>
<td>12%</td>
</tr>
<tr>
<td>Personnel Manager</td>
<td>20%</td>
</tr>
<tr>
<td>Human Resource Director</td>
<td>6%</td>
</tr>
<tr>
<td>Employment and Training Manager</td>
<td>3%</td>
</tr>
<tr>
<td>Other</td>
<td>19%</td>
</tr>
</tbody>
</table>

Source: Nunez and Russell, 1981

Problems most frequently mentioned were inadequacy of planning, inflexibility of scheduling, and low quality of instruction. The willingness of manufacturers to engage in cooperative retraining activities were generally high; however, they did not suggest that vocational education should increase its collaborative retraining efforts.

A report titled "Connecting Vocational Education with Economic Development: Proceedings of the Maryland Vocational Administrators' Conference" (Gilli, 1984) presented a speech given by Dr. Addison S. Hobbs, Assistant State Superintendent for Vocational-Technical Education. In this speech Hobbs says that every state has a jobs training program but few seem to be making a significant impact on economic development.

Material written since 1981 on this topic was more concerned with the involvement of technical and university
educational institutions (Arns, 1981; Beacher, 1985; Blake, 1981; Cronin, 1985; Kopecek & Clark, 1984; McMullen, 1984; Morse, 1984; "State Funding," 1982; "A Working Partnership," 1983). Literature related to technical and university education stated that all of education must be actively involved, especially with the notion that high technology does play a very important role in the process of increasing productivity. The Ohio Technology Transfer Organization, the Thomas Edison Program, and the Business and Industry Training Consortium of The Ohio State University are examples of these efforts in Ohio.

The literature in this area supports the approach of providing customized training services to manufacturing industries. Their findings seem to support the research questions being addressed in this study.

Government and Education Sponsored Customized Training

All studies or reports related to government and education sponsored customized training programs will be reviewed in this section. However; only the results of the studies or reports which examine areas related to this study's research questions will be discussed in detail.

Almost all states have some form of customized training program designed to provide needed training.
services to their manufacturing industry. In a study done by the West Virginia Department of Vocational Education, Bureau of Vocational, Technical, and Adult Education, titled "National Survey of Training Services to Business and Industry Through Vocational Education" (1982), an attempt was made to identify information about those programs. Surveys were sent to 50 state directors of vocational education plus the directors of vocational education in the District of Columbia, Guam, Puerto Rico, and the Virgin Islands. Out of the 54 surveys sent, 43 (79.6%) were returned. All 43 responding directors claimed they provided training services to business and industry; however, only 31 out of 43 had specific economic training programs or funding to provide for customized training in the private sector. According to the survey, a composite state program for providing training services to business and industry would have the following elements:

- Four full-time staff members
- Nine part-time staff members
- A state allocation of $1,140,000
- The bulk of training provided to manufacturing, electronics, health, and retail industries.
- The majority of referrals or requests for training would come from business and industry, local vocational directors, chambers of commerce, and
the state economic development agency.

The majority of training services provided would be for curriculum development and technical training.

The funds would largely be provided for occupational instructors, teaching supplies, equipment, and consumable supplies.

The training would likely be held at a public vocational-educational facility or at the plant site.

The three main agencies involved would be the state vocational and/or technical agency, local vocational technical facility, and the state office of economic development.

The funds for training would be administered by the local vocational-technical agency.

Training services would be provided for only new and expanding business and industry.

There would be 60 new and expanding companies served during the fiscal year and the program would train 4,148 people.

The promotion of training services would be done largely through printed material on a statewide basis.

A study was conducted by JoAnn Wilson (1981) in which she investigated the organizational and working relationships of state-level coordinated programs. Her study looked at 12 geographically diverse states known to be active in linking postsecondary education to economic development. The states studied were Colorado, Connecticut, Georgia, Louisiana, Minnesota, New York, North Carolina, Ohio, Oklahoma, Oregon, South Carolina,
and Wisconsin. This study also investigated the five states neighboring Arizona, which are California, Nevada, New Mexico, Texas, and Utah. Letters requesting information from state agencies followed by telephone calls as a reminder were used to collect the data. It was found that most of the states utilized postsecondary education to some extent in their state-level developmental strategies. Only two states (Nevada and Oregon) relied primarily on local efforts to link postsecondary education to economic development. For each of the states, information was presented on program history, services provided, and program structure. Among the state-level coordinated programs studied, the following generalizations were made:

1. Public vocational educational sectors, not private trade and technical schools, responded to the need for training for the new and expanding business and industries.
2. State-level responsibility for training programs of prospective workers always included the offices of state economic development and vocational education.
3. Training programs were usually designed and monitored by state-level officials.
4. Training programs were designed to assist a firm in its start-up manpower needs or entry-level positions. Training was usually short-term and customized to a company's requirements.
5. Public universities' responses to development are erratic and autonomous and generally conform to a broader definition of economics development concern which may include research and development, economic surveys, and entrepreneurial training.
Another study was undertaken by Lynn Brant (1982) to describe the efforts in three states to provide customized training services for manufacturing companies. This study described the linkage programs within the states of Ohio, South Carolina, and New York. Interviews were conducted with approximately 70 individuals from the three states. Interviewees included program directors, regional field representatives, state economic development officials, local economic developers, CETA staff, representatives from the governor's office, secondary vocational educators, technical and community college staff, plant managers, and other representatives of manufacturing companies served by the programs. Bryant examined a total of 16 individual projects. The objectives of this study were to: (1) describe the efforts in three states in providing customized training services to manufacturing companies (2) assess the perspectives of employers as to the value and quality of the training services received, and (3) offer recommendations for future related research. Results of the survey of South Carolina and New York are reported in this section of Chapter II. Results of the Ohio portion of this survey are reported in the next section of Chapter II, The Ohio Industrial Training Program.
Findings for each of the three states were reported according to their: (1) history and governance, (2) funding, (3) linkage and collaborative relationships, (4) outreach, (5) eligibility of client firms, (6) selection of trainees, (6) state perspectives on program impacts, and (7) client-firm satisfaction with service. The client-firm satisfaction with the services provided by the customized training service programs is related to this study's research questions and is reviewed below.

In South Carolina, interviews were conducted with four client-firms. All four firms reported that they were pleased with the outcomes of their project. In New York, two firms were interviewed. It was reported that the instruction provided by the customized training program was better than they had available internally. Overall, the client-firms were very satisfied with the services provided. In both states, the reported results were limited by the number of client-firms interviewed. Bryant did not indicate the questions asked to determine client satisfaction or of the specific procedures used in obtaining the findings relating to client satisfaction. It was reported that contacts were made with "ranking officials" of the appropriate state departments requesting a liason person to provide assistance in identifying
projects to be reviewed. This selection procedure would rule out the possibility of any of the results being generalizable to all client-firms for which training services were provided by each of the three state programs.

The University of the State of New York, Office of Occupational and Continuing Education and the Bureau of Occupational Education Research and Evaluation (1984) did a comprehensive study measuring the industry-specific training program's economic impact on the State of New York. The study was based on interviews with representatives of the businesses, industries, unions, and educational institutions which took part in the training projects implemented between November 30, 1980 and June 30, 1983. This study looked at the contributions of Short-Term Training Programs in respect to:

(1) The economic well-being of specific companies producing goods or services in New York State
(2) The employability of selected members of the state's labor force
(3) The development of the state's economy

Part of this study included a survey of 78 representatives of participating companies to determine the degree of success of their short-term training program. A 67.9% response rate was obtained from their mailed survey. It was reported that an overwhelming
A study compiled by the Michigan Community Colleges Economic Development and Job Training Network (1984) was made of the Michigan Community College Job Training and Retraining Investment Fund projects. The report assessed the impact on Michigan's 29 community colleges of the projects funded in the 1983-84 funding year. The major parts of the study included the following:

(1) Financial sources for the investment fund program
(2) Disbursement activities for equipment, personnel and staff training, facilities, curriculum development, community needs assessment, local economic development activities, and supplies

(3) Information on citizens served

(4) Ways in which funded projects contributed to the strengthening of college relations with business and industry

A study by John T. Loyd (1982) reported information about customized training programs in Kentucky and the states which surround Kentucky. The states surveyed were Alabama, Florida, Georgia, Illinois, Kentucky, Louisiana, Mississippi, Missouri, North Carolina, Ohio, Oklahoma, South Carolina, Tennessee, and West Virginia. The following information was gathered from the surrounding states regarding program activities relating to the new and expanding industries in their respective states.

(1) Services offered by program
(2) Program entering into reimbursable agreements
(3) Mobile units used for instruction
(4) Promotional materials used
(5) Funds available
(6) Program representative travel to out-of-state programs
(7) Personal contacts of representative with industry
(8) Method of payment to instructors
(9) Number of program staff
(10) Training budget for last year
(11) Number of industries served
(12) Number of programs operated
(13) Number of people served

All the customized training service program studies or reports that could be located by this researcher were
briefly reviewed in this section. However, this review excluded those studies that were specifically related to the Ohio Industrial Training Program or had major sections relating to the Ohio Industrial Training program. The studies that relate specifically to the Ohio Industrial Training Program or have major sections relating to the Ohio Industrial Training Program are reviewed in the following section.

The Ohio Industrial Training Program

Only two studies were located that related specifically to the Ohio Industrial Training Program. The first study to be discussed was prepared for the Ohio Advisory Council for Vocational Education by James E. Frazer and William Straton (1982) and was designed to study the operating procedures for the Vocational-Technical Resource Consortia. The study examined the development, organization, and operation of the Vocational-Technical Resource Consortia in the following areas:

1. Vocational education's role in state and national economic development activities
2. Consortia history and development
3. Organizational elements of the consortia
4. Operational policies
5. Marketing or communication techniques
6. Training and development activities
7. Project approval and implementation
8. The future of the consortia
Data was gathered through questionnaire, case study, and interview strategies. A general questionnaire was mailed to the participants in the study. The participants in the questionnaire strategy were made up of 404 members of the 23 Ohio consortia. Two hundred eighty-four (70.1%) of the questionnaires were returned. All 23 consortia directors returned the questionnaire along with 261 other members of the consortium. Five manufacturing companies involved in customized training projects were included in the case study strategy. The five manufacturing companies selected for the case study were recommended by the staff of the Ohio Department of Economic and Community Development and by the Ohio Department of Education, Division of Vocational Education. The third strategy used interviews to gather background information on the development of the consortium. Interviews were held with Dr. Byrl Shoemaker, Executive Director, Division of Vocational Education, Ohio Department of Education; Dr. Charles B. Dygert, Ohio Director of Communication for Domestic and Foreign Business and Industry, Division of Vocational Education, Ohio Department of Education; and Michael Hobson, Deputy Director for Administration, Ohio Department of Education, Department of Economic and Community Development.
On the 39 item questionnaire, Item 38 asked the question "How do you rate the overall effectiveness of your consortium to date?" Response options were (1) poor, (2) fair, (3) good, or (4) excellent. Eighty-seven percent of the consortium directors and 65.7% of the other consortium members rated the overall effectiveness of their consortium to date as good or excellent.

"Effectiveness" was not defined further for the participants who completed the questionnaire. The overall effectiveness results of the questionnaire cannot be analyzed in terms of specific elements of effectiveness. It also cannot be determined if the responses to the questionnaire relate to the research questions studied in the second strategy of this study.

The next study (Brant, 1982) reviewed is the Ohio Section of a study sponsored by the National Center for Research in Vocational Education that was presented previously. In this study, titled "Customized Training for New and Expanding Industry--A Vocational Education Role in State Government," Brant reported the results of her interviews. Ten training projects were examined in Ohio. Interviews were conducted with plant managers, personnel directors, and others who were closely involved with the project. All persons who were interviewed
reported that they were satisfied with the project. Persons interviewed said that they could not have afforded the training without the support of the OITP while others said that they would have conducted the training anyway, but the training was of better quality, more intense, and reached more workers than if they had done the training without OITP support.

Many companies offered suggestions regarding improvement of the OITP. The most common response made by the persons interviewed was the comment that they wished they had known about the program sooner. Other comments made by the persons interviewed were that the projects could have been better coordinated, that there were delays in decision making at the state level, and that there were some problems with equipment and facilities at participating schools. As stated in the previous section, there was no indication of the questions asked to determine client satisfaction or the procedures used in obtaining the findings. It was reported in the study that contacts were made with "ranking officials" regarding the selection of the projects to be reviewed. The selection procedure would rule out the results of the interviews as being generalizable to all client firms which had been provided training by the OITP.
Summary of Customized Training Program Research

There were only four research studies located by this researcher that were directly or indirectly related to this study's research questions. They were:


Customized Training for New and Expanding Industry --A Vocational Education Role in State and Local Economic Development (1982) by Lynn Brant

The study by Nunez and Russell examined the views of manufacturers concerning vocational education and its effectiveness. With only a 40% return on the questionnaire, this researcher would rule out the results as being generalizable to all manufacturing companies in the United States. Also the main thrust of the survey was directed at secondary vocational education collaboration efforts with manufacturing and not customized training service programs, which were examined in this study. Of interest to this researcher were the results of the items in the questionnaire which asked the NAM members to
respond to (1) what kinds of initial skill training, if any, does your company provide employees who do not have a four-year college degree?, (2) please indicate any problems you experience or you think make it difficult for business to work with high schools or community/junior college vocational education, and (3) your willingness to participate in cooperative retraining activities with vocational education. Table 3 and Table 4 list the NAM members responses to Items 1 and 2 listed above.

Table 3
Types of Initial Skill Training Offered

<table>
<thead>
<tr>
<th>Type of Job Training</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before job-assignment training</td>
<td>122</td>
</tr>
<tr>
<td>Formal on-the-job training</td>
<td>499</td>
</tr>
<tr>
<td>Lecture series/seminars</td>
<td>159</td>
</tr>
<tr>
<td>Off site training--tuition reimbursement</td>
<td>348</td>
</tr>
<tr>
<td>Apprenticeship</td>
<td>261</td>
</tr>
<tr>
<td>no initial skill training</td>
<td>157</td>
</tr>
</tbody>
</table>

Source: Nunez and Russell, 1981

The willingness of manufacturers to engage in cooperative retraining activity was generally high; however, they did not suggest that vocational education increase its collaborative retraining efforts. The finding of these three items in the study were used as
background information but did not relate directly to this study's research questions.

Table 4

Problems in Working with Vocational Education

<table>
<thead>
<tr>
<th>Problem Areas</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflexible schedules</td>
<td>24%</td>
</tr>
<tr>
<td>Inadequate planning</td>
<td>23%</td>
</tr>
<tr>
<td>Quality of training</td>
<td>19%</td>
</tr>
<tr>
<td>Conflicts on goals of training</td>
<td>18%</td>
</tr>
<tr>
<td>Leadership related problems</td>
<td>16%</td>
</tr>
<tr>
<td>Schools not interested in work with business and industry</td>
<td>14%</td>
</tr>
<tr>
<td>Conflicts or disagreements on policies or regulation</td>
<td>11%</td>
</tr>
</tbody>
</table>

Source: Nunez and Russell, 1981

The study conducted by the Bureau of Occupational Education Research and Evaluation on the impact of industry-specific training had one item in its survey which directly related to this study's research questions. This item asked the participating companies to indicate the degree of success of the short-term training program by responding to the following options: (1) Successful beyond expectations, (2) Completely successful, (3) Partially successful, and (4) Not successful. Table 5 reports the results.
Table 5

Degree of Success of Short-Term Training Program

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Completely successful</td>
<td>47%</td>
</tr>
<tr>
<td>Partially successful</td>
<td>26%</td>
</tr>
<tr>
<td>Successful beyond expectations</td>
<td>25%</td>
</tr>
<tr>
<td>Not successful</td>
<td>02%</td>
</tr>
</tbody>
</table>

Source: Nunez and Russell, 1981

With a response rate of 67.9% the results would be somewhat generalizable to all the short-term training programs in New York. Based on the report conducted by the West Virginia Department of Education, Bureau of Vocational, Technical and Adult Education (1982), Ohio and New York customized training programs are similar; however, there is not enough data provided to generalize from the New York program to the program in Ohio. Also the report was not clear on how "successful" was defined which would leave the results unclear as to the success of the program.

The study by Frasier and Stanton (1982) which examined the customized training program in Ohio also had one item in their 39 item questionnaire which related directly to this study's researchers questions. This item asked the consortium members to rate the overall effectiveness of their consortium to date. The response
options were: (1) Excellent, (2) Good, (3) Fair, and (4) Poor. Table 6 shows the results.

Table 6

<table>
<thead>
<tr>
<th></th>
<th>Poor</th>
<th>Fair</th>
<th>Good</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directors (n=23)</td>
<td>8.7%</td>
<td>4.4%</td>
<td>60.9%</td>
<td>26.1%</td>
</tr>
<tr>
<td>Members (n=245)</td>
<td>8.6%</td>
<td>25.7%</td>
<td>44.9%</td>
<td>20.8%</td>
</tr>
</tbody>
</table>

Source: Frasier and Stanton, 1982

A Total of 404 questionnaires were distributed to directors and and other members of the consortia. Two hundred eighty-four (70.1%) of the questionnaires were returned. The return rate would make the results somewhat suspect as to the generalizability to all members of the consortia. Also the population studied by this questionnaire is not the same population studied in this research study. As in the previous study reviewed in this section, this question does not define the main descriptive term used in the questionnaire. In this study's questionnaire "effectiveness" was not defined.

The study by Brant (1982) examined programs involving vocational education and economics development efforts in three states; Ohio, South Carolina, and New York. Brant
used interviews to examine 10 projects in Ohio. All persons interviewed reported they were satisfied with the project. Interviewees also offered suggestions regarding improvements that could be made to the OITP. The comments and suggestions were reported in general terms. This research will examine this area in much more specific terms. It was reported that the projects selected for the interviews were the results of recommendations of "ranking officials". This would rule out the results of the interviews as being generalizable to all manufacturing companies participating in the customized training services provided by the OITP.

It seems evident to this researcher that there is a need to do research in the problem area described in this researcher's study. Also the available research reviewed is not conclusive in its findings or comprehensive enough in its nature to meet the needs for information to answer the research questions in this research study.
CHAPTER III
PROCEDURE

Research Design and Conditions of Testing

The purpose of this descriptive research study was to survey the Ohio manufacturing industries' training coordinators concerning delivery of customized training services by the State Department of Education, Division of Vocational Education and the State Department of Development in Ohio. This study implemented two research strategies to answer the questions stated in Chapter I.

Future customized training service needs of participating manufacturing industries were measured by the first strategy using a Delphi technique. This strategy utilized three rounds of mailed survey instruments. The second strategy was designed to obtain information about: (1) whether services were available to manufacturing companies, (2) whether the service was needed by the manufacturing company, (3) whether the service was provided, and (4) was the provided service useful to the manufacturing company. This strategy utilized a single mailed survey instrument.
First strategy Delphi

Delphi 1 was an open-ended question type instrument, mailed on January 27, 1986, to 40 manufacturing company training coordinators as potential participants in the survey. The mailing contained a letter of introduction (see Appendix A) and a Delphi 1 instrument (see Appendix B). The letter and instrument was designed to obtain willing participants and to have them indicate no fewer than two nor more than five training services needed in the future by their companies. The Delphi 1 instrument also requested that a brief example be given for each future need to help insure that the responses would be correctly interpreted. A follow-up postcard (see Appendix C) was mailed 10 days after the first instrument to all company training coordinators to request the return of a completed survey instrument. If the Delphi 1 instrument was not returned by February 14, 1986, a follow-up telephone call was made to each nonrespondent requesting participation in the Delphi study. At the same time they were asked to complete and return the Delphi 1 instrument. Twenty manufacturing company training coordinators (see Appendix D) expressed a willingness to participate in the survey by completing and returning Round 1 of the Delphi study.
In Round 2, a list of 16 future training service needs was generated by this researcher from the first round responses received on the Delphi 1 instrument. This list of training service needs was reviewed and edited by an advisory committee made up of directors of the Ohio Industrial Training Consortium (see Appendix E). From this review and discussion a second round letter of introduction (see Appendix F) instrument (Delphi 2) was developed. The Delphi 2 instrument (see Appendix G) was mailed March 31, 1986 to the 20 manufacturing company training coordinators who returned a completed Delphi 1 instrument. For each training service need identified, participants were asked (1) to agree or to disagree with the training service need listed, (2) to indicate their degree of certainty, (3) to support their position if they so desired, and (4) to suggest additional needed training services. A follow-up postcard (see Appendix C) was mailed to the company training coordinators 10 days after the second round Delphi 2 instrument was mailed as a reminder to return the completed instrument. If the Delphi 2 instrument was not returned by April 8, 1986, a follow-up telephone call was made to the participants to request the return of the completed instrument. Seventeen of the 20 first round responders completed and returned
round 2 of the Delphi 2 instrument.

In the Round 3 Delphi, a letter of introduction (see Appendix H) was mailed with the instrument (see Appendix I) in which the participants were (1) given the percentage of agreement and disagreement for each training service need, (2) shown their position from the previous round, (3) shown the comments from the previous round, and (4) given notes from the researcher where clarification was needed. The participants were asked to reconsider their earlier positions. The training service needs which had 100% agreement on Round 2 were withdrawn from consideration. This instrument was mailed April 24, 1986. All 17 (100%) of the participants from Round 2 returned their completed Delphi 3 instrument, therefore, no follow-up postcard was sent in Round 3.

Every effort was made to obtain the return of completed research instruments from Delphi 1, 2, and 3; however, the Delphi technique does not require the researcher be concerned with nonresponders (Linstone & Turoff, 1975).

Second strategy survey.

The second research strategy instrument (see Appendix J) was mailed along with a letter of introduction (see Appendix K) to 160 different manufacturing company
training coordinators selected at random from a population of 420 manufacturing companies making up the frame. The survey instrument was composed of two question types. The first question type measured: (1) if training service areas were offered to or available to manufacturers through OITP, (2) if they were needed, and (3) if they were provided. Training coordinators were asked to answer yes or no to those questions.

The second type of question measured the usefulness of training services to the manufacturers by using a Likert type scale. The usefulness of the service which was provided by OITP was the question type the training coordinators responded to with the following options: (1) strongly agree, (2) agree, (3) slightly agree, (4) slightly disagree, (5) disagree, and (6) strongly disagree. Six levels of responses were used to force the training coordinators to agree or disagree at three levels.

This survey instrument was mailed April 15, 1986 to the training coordinators with a postage paid, self-addressed return envelope for their responses. A follow-up postcard (see Appendix C) was mailed 10 days after the survey instrument was mailed as a reminder for the training coordinators to complete and return their
survey instrument. Eighty-nine of 160 (55.6%) survey instruments were returned by the deadline date of May 2, 1986.

The 71 manufacturing company training coordinators who did not return their survey instrument were mailed a second instrument and asked again to return a completed survey instrument. Fifty-six of the 71 received only a mailing. Thirty-five of the 56 (62.5%) nonresponding training coordinators completed and returned the second survey instrument.

Fifteen manufacturing company training coordinators (approximately 20% of the 71 training coordinators) who did not return their survey instrument were selected at random (double dipped) to receive extra effort from this researcher to obtain their return of a completed survey instrument. A telephone call was made by the respective consortium director to request completion and return of the survey instrument. A high return percentage of survey instruments was needed to compare double dipped responders. By returning a completed survey instrument the training coordinators in the double dipped sample could be compared to training coordinators who responded before the deadline date or to training coordinators who responded after the deadline date from the second mailing of the
survey instrument. This data was then used to determine if there was a significant difference between the three groups of responders. Of the doubled dipped nonresponding training coordinators, 15 (100%) returned their survey instrument.

A total of 139 of 160 (86.8%) company training coordinators responded to the second strategy survey instrument. These completed survey instruments were all received by June 15, 1986.

Subject Selection

The population studied was the coordinators of the manufacturing industries in Ohio which had been served by the Ohio Industrial Training Program between July 1, 1983 and December 31, 1985. A list of contract agreements signed during that period was obtained from the Department of Development, State of Ohio. This list was reviewed to eliminate duplication of manufacturing companies and contact persons. It was determined that 420 manufacturing company training coordinators represented the population frame. The mailings for both the Delphi and the survey were mailed to the identified company training coordinators.

Each of the 420 company training coordinators was assigned a number from 1 to 420. A computer generated
list of random numbers from 1 to 420 was used to select the two sets of company training coordinators used in this two strategy study. Forty company training coordinators were selected for the Delphi technique. Another 160 company training coordinators were selected to receive the survey instrument (see Appendix L). One hundred sixty company training coordinators were determined to be the number of training coordinators needed for this part of the study (Cochran, 1977).

**Outcome Measures**

The two strategy instruments (Delphi 1 and Survey) were reviewed for content validity and usability by this researcher's three member dissertation committee at The Ohio State University. Each instrument (Delphi 1, 2, 3, and Survey) was then reviewed by a four member OITP advisory committee. The OITP advisory committee met four times to review the Delphi 1, 2, 3, and Survey instruments during their development. These meetings, held after each Delphi round, included a review of the results and were also used to develop the next instrument. The Delphi and the survey instruments were field tested with four company training coordinators (see Appendix M). The training coordinators for each of the four companies were selected as a result of the recommendations of Ronald Bornmann,
director of the Mid-Central consortium. Mr. Bornmann recommended the training coordinators because of the diversity of the companies they worked for, their expertise, and willingness to help. The Mid-Central consortium area of the state was used as an area from which to select field test training coordinators because that district contained a wide range of types of companies.

**Second strategy Survey instrument.**

This survey instrument was developed by dividing the training services into 10 general service areas. These training service areas were developed through a review of the literature, reports, and consultation with the advisory committee from the Ohio Industrial Training Program. For each service area of the survey instrument where the training coordinators answered yes to the question of whether the service area was provided, the training coordinators were first asked a general, positive question concerning the usefulness of the service to the company. This question was asked in the positive (Was the service *useful* to your company?). The next three to six questions asked specific questions about the usefulness of the service provided by OITP. These questions were randomly positioned in order and randomly
worded positively or negatively. The random positive and negative wording was used to avoid the responder marking "response sets."

The survey instrument was not pilot tested for reliability. This was not done because of the design of the instrument. The design provided for only one question to measure each subject area in each of the 10 service areas. This would have required each subject area in each service area on the instrument to be surveyed with multiple questions thus increasing the instrument size to the degree that it would have been very difficult to obtain a high percentage of responses. Also, more should be known about this process and survey instrument before this instrument is pilot tested (F. Ruland, personal communication, May, 1986).

Data Analysis

The data from this study was divided into two major areas for analysis. The first (Delphi data) is presented in chapter IV and the second (Survey data) is presented in chapter V.

First strategy Delphi data.

Data from the first round of the Delphi technique was presented as the responders presented it on the return of the Delphi I instrument. The data was then organized and
edited into 18 future service need items for the second round instrument. For each item in Rounds 2 and 3 the responders' comments were compiled and the percentage of agreement, disagreement, and certainty scores were calculated according to methods prescribed by Warren, Klonglan, and Sabri (1969). Through the technique of having the participants mark agree or disagree plus the degree of certainty, these authors believed participants would think about their response more carefully. Table 2 is a scale they provided to transfer the data into a more workable form for data analysis. This scale does not assume equal intervals between points and weights the strongest opinions more heavily.

Table 7

<table>
<thead>
<tr>
<th>Transformation of Certainty Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>most</td>
</tr>
<tr>
<td>Disagree</td>
</tr>
</tbody>
</table>

Transformed Scores

0 3 5 6 7 8 9 10 11 13 16

Source: Warner, Klonglan, and Sabri, p. 10
Data from the Delphi is both quantitative and qualitative. A formal review with the OITP advisory committee prior to each round was used to verify and/or correct for researcher bias in the analysis and interpretations of the participants' comments. Quantitative data was reported for each service need (identified in Round 1) in terms of frequencies, percentages, means, and standard deviations. Second and third round responses were compared with a T-Test to illustrate changes in responses.

**Second strategy Survey data.**

In the first part of the survey instrument the "yes" and "no" responses were recorded and the frequency and the percent of yes/no responses calculated. Data from the second part of the second strategy survey instrument was converted to a six point scale with one (1) being assigned to the lowest level of agreement on the usefulness of services provided. A six (6) was assigned to the highest level of agreement on the usefulness of the services provided. Data from the second part (Likert type scale questions) was reported in terms of frequencies, percentages, means, and standard deviations.
First part and second part data were also analyzed with a One-way Analysis of Variance to determine if there was a significant difference in responses at the .05 level between Group 1 (responders before deadline date), Group 2 (late responders—not double dipped) and Group 3 (late responders—double dipped).
CHAPTER IV

ANALYSIS OF DATA--FIRST STRATEGY DELPHI TECHNIQUE

Introduction

The purpose of this descriptive research study was to survey the Ohio manufacturing industries' training coordinators concerning delivery of customized training services by the State Department of Education, Division of Vocational Education and the State Department of Development in Ohio. This study implemented two research strategies to answer the questions stated in Chapter I.

Future customized training service needs of participating manufacturing industries were measured by the first strategy using a Delphi technique. This strategy utilized three rounds of mailed survey instruments (Delphi 1, Delphi 2, and Delphi 3). The second strategy survey was designed to obtain information about: (1) whether services were available to manufacturing companies, (2) whether the service was needed by the manufacturing company, (3) whether the service was provided, and (4) was the provided service useful to the manufacturing company. This strategy utilized a single mailed survey. The results of the
Delphi technique are discussed in this chapter.

**Round 1—Delphi.**

Delphi 1 (see appendix B) was an open-ended question type instrument. The Delphi 1 instrument was designed to have participants indicate no fewer than two nor more than five training services needed by their companies in the future, but which were not available through the Ohio Industrial Training Program (OITP). Appendix N lists the responses from Delphi 1.

The results of the first round Delphi were reviewed by the OITP advisory committee. These results were then edited and synthesized into 18 general training service areas to be used in the second round Delphi 2 instrument. Table 8 represents the 18 general training service areas the participants presented as being needed in the future, but not available through OITP.

Table 8

**Eighteen General Service Areas.**

**SERVICE 1. INDUSTRIAL TRAINING CENTER**—A factory oriented center including such facilities as: cafeteria, lodging, specialized training equipment, support staff, etc.

**SERVICE 2. TEAM BUILDING TRAINING**—Team building training such as: quality circles, group goal setting and problem solving, group process, participatory management, etc.
Table 8 (continued)

SERVICE 3. ECONOMICS TRAINING--Economics training which
is related to the manufacturing economy, world competition
in productivity, world-wide banking, etc.

SERVICE 4. PERSONNEL RESOURCE LIST--Personnel resource
list to include instructors and consultants in such areas
as: technical writing, development of instructional
support materials, technical, occupational, and general
employment-related subjects, etc.

SERVICE 5. MANAGEMENT DEVELOPMENT PROGRAMS--Management
development programs to include such areas as: decision
making, planning and conducting training, motivation
techniques, computer-aided production control, human
relations, etc.

SERVICE 6. TRAINING AIDS--Training aids to include such
items as: video training programs, predeveloped overhead
transparencies, computer programs, manuals, handouts,
workbooks, etc.

SERVICE 7. FUNDING FOR PROJECT COORDINATION--Funding for
such activities as: coordinating needs assessment,
applying for grants, locating and employing resource
consultants and instructors, obtaining instructional
materials, obtaining audio/visual aids, supervising
instruction, etc.

SERVICE 8. FUNDING FOR RESEARCH AND DEVELOPMENT--Research
and development designed at trying new products, designs,
production techniques, etc. for improving production.

SERVICE 9. FUNDING FOR NONCREDIT COLLEGE COURSES--Funding
for courses such as: money management, recreational
activities, speed reading, etc.

SERVICE 10. INCREASED FUNDING--Increased funding to
reimburse costs of instruction such as: increased rate per
hour, reimbursement for planning and preparation time,
etc.
Table 8 (continued)

SERVICE 11. OCCUPATIONAL TRAINING PROGRAMS—Occupational type training programs to include such areas as: robotics, nc/cnc, cad/cam, electronics, electrical maintenance and repair, tool and die making, cooling and refrigeration, blueprint reading, word processing, occupational mathematics, computers, and other new industrial and commercial technologies, etc.

SERVICE 12. SAFETY RELATED TRAINING—Safety related training such as: right-to-know programs, first aid, safety practices and procedures, etc.

SERVICE 13. NON-OCCUPATIONAL TRAINING PROGRAMS—Non-occupational specific training programs such as: quality control, SPS, advanced statistics, employee assistance, quality of work life, etc.

SERVICE 14. INFORMATION ON FEDERAL/STATE FUNDING—Information on funding for training obtainable from federal, state, and/or local sources.

SERVICE 15. INFORMATION ON OHIO INDUSTRIAL TRAINING PROGRAM SERVICES—Information on services provided by OITP such as: resources and services, amount of funding, funding categories, etc.

SERVICE 16. DECREASED TIME FOR PROJECT APPROVAL—Decrease the time of approval of project funding which would cut down the time from identification of needs and development of a plan to the training program implementation.

SERVICE 17. FISCAL YEAR MATCH—The fiscal year of the funding agency should match the fiscal year used by industry.

SERVICE 18. NEEDS ASSESSMENT TESTING/TESTS—Needs assessment tests and testing to better and more accurately determine training needs.

Round 2—Delphi.

The above list of 18 future training service needs were used in the second round Delphi instrument. For each
training service need identified, participants were asked:
(1) to agree or disagree with the training need listed,
(2) to indicate their degree of certainty, (3) to support
their position if they so desired, and (4) to suggest
additional needed training services.

For each item in Rounds 2 and 3 the responders'
certainty scores were calculated according to methods
the technique of having the participants mark agree or
disagree plus the degree of certainty, these authors
believed participants would think about their response
more carefully. Table 9 represents the scale used to
transfer the data into a more workable form for data
analysis. This scale was also included as part of Tables
10 through 45 in Appendix O and P, which report the
results of Rounds 2 and 3.

Table 9

| Transformation of Certainty Scores (Warner, Klonglan, and Sabri, p. 10) |
|-------------------------------|----------------|----------------|----------------|----------------|
|                               | most           | least          | least          | most           |
| Disagree                      | 5              | 4              | 3              | 2              | 1              | D/A           | 1              | 2              | 3              | 4              | 5              |
| Transformed Scores            | 0              | 3              | 5              | 6              | 7              | 8              | 9              | 10             | 11             | 13             | 16             |
The agree/disagree and certainty scale does not assume equal intervals between points and weights the strongest opinions more heavily. The transformed scores reflect the weight for that response based on research conducted by Warren, Klonglan, and Sabri (1969). Therefore, the transformed scores can be analyzed on a continuum of 0 to 16 with equal intervals between points. Detailed results of Round 2 Delphi are presented in Tables 10 through 27 located in Appendix O.

**Round 3—Delphi**

In Round 3, a letter of introduction was mailed with the Delphi 3 instrument and the participants were (1) given the percentage of agreement and disagreement for each training service need and (2) shown their position from the previous round. The participants were asked to reconsider their earlier positions. Detailed results of Round 3 are presented in Tables 28 through 45 located in Appendix P.

The training service needs which had 100% agreement on Round 2 were withdrawn from consideration in the Round 3 instrument. The three training service areas with 100% agreement on Round 2 were (1) Service Area 4, personnel
resource list; (2) Service Area 15, information on Ohio Industrial Training Program services; and (3) Service Area 16, decreased time for project approval.

Presented in Table 46 are the summary results of Rounds 2 and 3. This table includes the number (n) of participants who responded to each item in both Rounds 1 and 2, the mean (x̄) and standard deviation (sd) for each round, and the computed level of probability (p). This researcher considered a level of probability reported for any service area that was less than .05 as being an indication that there was a significant difference in mean scores between Round 2 and Round 3.

TABLE 46

Summary of Results of Rounds 2 and 3.

SERVICE 1. INDUSTRIAL TRAINING CENTER--A factory oriented center including such facilities as: cafeteria, lodging, specialized training equipment, support staff, etc.

<table>
<thead>
<tr>
<th>Service Area 1</th>
<th>Round 2—Mean</th>
<th>sd</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10.29</td>
<td>4.25</td>
</tr>
<tr>
<td></td>
<td>10.29</td>
<td>4.86</td>
</tr>
</tbody>
</table>

Level of Prob: 1.000
Table 46 (continued)

SERVICE 2. TEAM BUILDING TRAINING—Team building training such as: quality circles, group goal setting and problem solving, group process, participatory management, etc.

n=15
Round 2—Mean: 13.00
Round 3—Mean: 13.13
Level of Prob: 0.171

SERVICE 3. ECONOMICS TRAINING—Economics training which is related to the manufacturing economy, world competition in productivity, world-wide banking, etc.

n=14
Round 2—Mean: 12.43
Round 3—Mean: 12.86
Level of Prob: 0.612

SERVICE 4. PERSONNEL RESOURCE LIST—Personnel resource list to include instructors and consultants in such areas as: technical writing, development of instructional support materials, technical, occupational, and general employment related subjects, etc.

n=16
Round 2—Mean: 12.13
Round 3—Mean: 12.13
Level of Prob: 1.000
<table>
<thead>
<tr>
<th>Service</th>
<th>Description</th>
<th>Round 2 Mean</th>
<th>Standard Deviation</th>
<th>n</th>
<th>Round 3 Mean</th>
<th>Standard Deviation</th>
<th>Level of Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service 5</td>
<td>Management Development Programs—Management development programs to include such areas as: decision making, planning and conducting training, motivation techniques, computer aided production control, human relations, etc.</td>
<td>11.80</td>
<td>4.63</td>
<td>15</td>
<td>11.93</td>
<td>3.88</td>
<td>0.876</td>
</tr>
<tr>
<td>Service 6</td>
<td>Training Aids—Training aids to include such items as: video training programs, pre-developed overhead transparencies, computer programs, manuals, handouts, workbooks, etc.</td>
<td>10.69</td>
<td>4.38</td>
<td>16</td>
<td>11.06</td>
<td>3.59</td>
<td>0.718</td>
</tr>
<tr>
<td>Service 7</td>
<td>Funding for Project Coordination—Funding for such activities as: coordinating needs assessment, applying for grants, locating and employing resource consultants and instructors, obtaining instructional materials, obtaining audio/visual aids, supervising instruction, etc.</td>
<td>12.40</td>
<td>3.87</td>
<td>15</td>
<td>12.53</td>
<td>2.92</td>
<td>0.885</td>
</tr>
<tr>
<td>Service 8</td>
<td>Funding for Research and Development—Research and development designed at trying new products, designs, production techniques, etc. for improving production.</td>
<td>11.40</td>
<td>3.52</td>
<td>15</td>
<td>9.33</td>
<td>4.48</td>
<td>0.017</td>
</tr>
</tbody>
</table>
Table 46 (continued)

SERVICE 9. FUNDING FOR NON-CREDIT COLLEGE
COURSES—Funding for courses such as: money management, recreational activities, speed reading, etc.

Round 2—Mean: 5.50 sd: 3.37
n=15
Round 3—Mean: 4.79 sd: 4.37
Level of Prob: 0.381

SERVICE 10. INCREASED FUNDING—Increased funding to reimburse costs of instruction such as: increased rate per hour, reimbursement for planning and preparation time, etc.

Round 2—Mean: 9.81 sd: 5.21
n=16
Round 3—Mean: 9.69 sd: 4.47
Level of Prob: 0.847

SERVICE 11. OCCUPATIONAL TRAINING PROGRAMS—Occupational type training programs to include such areas as: robotics, nc/cnc, cad/cam, electronics, electrical maintenance and repair, tool and die making, cooling and refrigeration, blueprint reading, word processing, occupational mathematics, computers, and other new industrial and commercial technologies, etc.

Round 2—Mean: 13.80 sd: 2.40
n=15
Round 3—Mean: 14.87 sd: 1.73
Level of Prob: 0.100

SERVICE 12. SAFETY RELATED TRAINING—Safety related training such as: right-to-know programs, first aid, safety practices and procedures, etc.

Round 2—Mean: 12.27 sd: 3.62
n=15
Round 3—Mean: 12.07 sd: 3.31
Level of Prob: 0.754
Table 46 (continued)

SERVICE 13. NON-OCCUPATIONAL TRAINING
Programs—Non-occupational specific training programs such as: quality control, SPS, advanced statistics, employee assistance, quality of work life, etc.

Round 2—Mean: 11.71 sd: 2.43
n=14
Round 3—Mean: 12.36 sd: 3.46
Level of Prob: 0.445

SERVICE 14. INFORMATION ON FEDERAL/STATE FUNDING—Information on funding for training obtainable from federal, state, and/or local sources.

Round 2—Mean: 12.63 sd: 2.25
n=16
Round 3—Mean: 14.75 sd: 1.73
Level of Prob: 0.003

SERVICE 15. INFORMATION ON OHIO INDUSTRIAL TRAINING PROGRAM SERVICES—Information on services provided by OITP such as: resources and services, amount of funding, funding categories, etc.

Round 2—Mean: 12.93 sd: 2.43
n=15
Round 3—Mean: 12.93 sd: 2.43
Level of Prob: 1.000

SERVICE 16. DECREASED TIME FOR PROJECT APPROVAL—Decrease the time of approval of project funding which would cut down the time from identification of needs and development of a plan to the training program implementation.

Round 2—Mean: 12.87 sd: 2.23
n=15
Round 3—Mean: 12.87 sd: 2.23
Level of Prob: 1.000
Table 46 (continued)

SERVICE 17. FISCAL YEAR MATCH - The fiscal year of the funding agency should match the fiscal year used by industry.

<table>
<thead>
<tr>
<th></th>
<th>Round 2—Mean:</th>
<th>sd: 5.08</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Round 3—Mean:</td>
<td>sd: 4.95</td>
</tr>
<tr>
<td></td>
<td>Level of Prob:</td>
<td>0.784</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Round 2—Mean:</th>
<th>sd: 4.59</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Round 3—Mean:</td>
<td>sd: 4.60</td>
</tr>
<tr>
<td></td>
<td>Level of Prob:</td>
<td>0.449</td>
</tr>
</tbody>
</table>

All but three standard deviation scores stayed the same or dropped from Round 2 to Round 3. The exceptions were Service Areas 1, industrial training center; 8, funding for research and development; and 13, non-occupational training programs. The largest change in the standard deviations of these three service areas was a 1.03 increase going from 2.43 to 3.46.

Two service training areas had probability scores less than .05. They were Service Area 8, funding for research and development and Service Area 14, information on federal/state funding. The mean score for Service Area 8 lowered 2.07 points from Round 2 to Round 3, changing
from 11.40 to 9.33, indicating a change in the participants' responses toward less need for this service in the future. The mean score for Service Area 14 increased 2.12 points from Round 2 to Round 3, changing from 12.63 to 14.75, indicating a change in the participants' responses toward a stronger need for this service in the future. Service Area 1, industrial training center, had a probability of 1.00 indicating no change in mean score between Round 2 and Round 3 and a stable response from the participants.

Table 47 lists the ranking of the levels of agreement in Rounds 2 and 3. This table presents the level of agreement on the issue of the service area being needed in the future, and does not rank which service areas should be provided first by OITP. The rankings of which service areas should be provided first will be presented later.
Table 47

Rankings of the Levels of Agreement—Round 2 and 3.

<table>
<thead>
<tr>
<th>SERVICE AREA</th>
<th>ROUND 2</th>
<th></th>
<th>ROUND 3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RANK</td>
<td>X</td>
<td>RANK</td>
<td>X</td>
</tr>
<tr>
<td>Occupational Training Programs</td>
<td>1</td>
<td>13.80</td>
<td>1</td>
<td>14.87</td>
</tr>
<tr>
<td>Information Federal/State Funding</td>
<td>5</td>
<td>12.63</td>
<td>2</td>
<td>14.75</td>
</tr>
<tr>
<td>Team Building Training</td>
<td>2</td>
<td>13.00</td>
<td>3</td>
<td>13.13</td>
</tr>
<tr>
<td>Information on OITP Services</td>
<td>3</td>
<td>12.93</td>
<td>4</td>
<td>12.93</td>
</tr>
<tr>
<td>Decreased Time for Project Approval</td>
<td>4</td>
<td>12.87</td>
<td>5</td>
<td>12.87</td>
</tr>
<tr>
<td>Economics Training</td>
<td>6</td>
<td>12.43</td>
<td>6</td>
<td>12.86</td>
</tr>
<tr>
<td>Funding for Project Coordination</td>
<td>7</td>
<td>12.40</td>
<td>7</td>
<td>12.53</td>
</tr>
<tr>
<td>Non-Occupational Training Programs</td>
<td>11</td>
<td>11.71</td>
<td>8</td>
<td>12.36</td>
</tr>
<tr>
<td>Personnel Resource List</td>
<td>9</td>
<td>12.13</td>
<td>9</td>
<td>12.13</td>
</tr>
<tr>
<td>Safety Related Training</td>
<td>8</td>
<td>12.27</td>
<td>10</td>
<td>12.07</td>
</tr>
<tr>
<td>Management Development Programs</td>
<td>10</td>
<td>11.80</td>
<td>11</td>
<td>11.93</td>
</tr>
<tr>
<td>Training Aids</td>
<td>13</td>
<td>10.69</td>
<td>12</td>
<td>11.06</td>
</tr>
<tr>
<td>Industrial Training Center</td>
<td>15</td>
<td>10.29</td>
<td>13</td>
<td>10.29</td>
</tr>
<tr>
<td>Needs Assessment Testing/Tests</td>
<td>14</td>
<td>10.50</td>
<td>14</td>
<td>9.93</td>
</tr>
<tr>
<td>Fiscal Year Match</td>
<td>17</td>
<td>9.67</td>
<td>15</td>
<td>9.80</td>
</tr>
</tbody>
</table>
Table 47 (continued)

<table>
<thead>
<tr>
<th>SERVICE AREA</th>
<th>RANK</th>
<th>X</th>
<th>RANK</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased Funding</td>
<td>16</td>
<td>9.81</td>
<td>16</td>
<td>9.69</td>
</tr>
<tr>
<td>Funding for Research/Development</td>
<td>12</td>
<td>11.40</td>
<td>17</td>
<td>9.33</td>
</tr>
<tr>
<td>Funding Noncredit College Courses</td>
<td>18</td>
<td>5.50</td>
<td>18</td>
<td>4.79</td>
</tr>
</tbody>
</table>

The top five service areas that the participants felt would be needed in the future were the same for both Rounds 2 and 3. The participants continued to remain certain that these service areas would be needed in the future. Service Area 14, information on federal/state funding, was the only service area that changed positions. In the certainty of the participants, this service area moved from a fifth ranking in the second round, to a second ranking after the third round. The top five service areas stayed the same or increased in level of certainty from Round 2 to Round 3.

Four of the bottom five service areas in Round 2 also remained in the bottom after Round 3 except for Service Area 1, industrial training center, which moved up to 13th
place in the ranking.

Also in Round 3, the participants were asked to prioritize the 18 service areas from 1 to 18, with "1" being the service area which should be provided by OITP as a first priority and "18" being the service area which should be provided by OITP as a last priority. The results of the priority ranking are presented below in Table 48.

Of the top five service areas participants recommended to be provided, only Service Area 4, personnel resource list, was not in the top five in the level of certainty of its need in the future. The level of certainty for Service Area 4, personnel resource list, was 12.13 on the third round with a relatively low standard deviation of 2.92. The highest standard deviation of the service areas recommended by the participants to be provided by OITP in the future was Service Area 1, industrial training center. The standard deviation of 6.47 for Service Area 1 suggests that there is a wide variation of opinion concerning the priority of providing this service area to manufacturing companies in Ohio. In looking at Table 10 in Appendix N, the distribution of responses were, in fact, bimodal.

The conclusions and recommendations for the first strategy and second strategy are discussed in Chapter VI.
Table 48

Priority of Providing Needed Service Areas.

<table>
<thead>
<tr>
<th>SERVICE AREA</th>
<th>PRIORITY</th>
<th>( \bar{x} )</th>
<th>sd</th>
</tr>
</thead>
<tbody>
<tr>
<td>15. INFORMATION ON OHIO INDUSTRIAL TRAINING PROGRAM</td>
<td>1</td>
<td>8.47</td>
<td>4.88</td>
</tr>
<tr>
<td>11. OCCUPATIONAL TRAINING PROGRAMS</td>
<td>2</td>
<td>5.63</td>
<td>3.22</td>
</tr>
<tr>
<td>14. INFORMATION ON FEDERAL/STATE FUNDING</td>
<td>3</td>
<td>6.06</td>
<td>4.47</td>
</tr>
<tr>
<td>4. PERSONNEL RESOURCE LIST</td>
<td>4</td>
<td>6.18</td>
<td>4.31</td>
</tr>
<tr>
<td>16. DECREASED TIME FOR PROJECT APPROVAL</td>
<td>5</td>
<td>7.35</td>
<td>4.60</td>
</tr>
</tbody>
</table>

- INFORMATION ON OHIO INDUSTRIAL TRAINING PROGRAM
  SERVICE AREAS—Information on services provided by OITP such as: resources and services, amount of funding, funding categories, etc.

- OCCUPATIONAL TRAINING PROGRAMS—Occupational type training programs to include such areas as: robotics, nc/cnc, cad/cam, electronics, electrical maintenance and repair, tool and die making, cooling and refrigeration, blueprint reading, word processing, occupational mathematics, computers, and other new industrial and commercial technologies, etc.

- INFORMATION ON FEDERAL/STATE FUNDING—Information on funding for training obtainable from federal, state, and/or local sources.

- PERSONNEL RESOURCE LIST—Personnel resource list to include instructors and consultants in such areas as: technical writing, development of instructional support materials, technical, occupational, and general employment related subjects, etc.

- DECREASED TIME FOR PROJECT APPROVAL—Decreases the time of approval of project funding which would cut down the time from identification of needs and development of a plan to the training program implementation.
Table 48 (continued)

<table>
<thead>
<tr>
<th>SERVICE AREA</th>
<th>PRIORITY</th>
<th>( \bar{x} )</th>
<th>sd</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0</td>
<td></td>
<td>6</td>
<td>7.69</td>
</tr>
<tr>
<td>MANAGEMENT DEVELOPMENT PROGRAMS—Management development programs to include such areas as: decision making, planning and conducting training, motivation techniques, computer aided production control, human relations, etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.0</td>
<td></td>
<td>7</td>
<td>8.00</td>
</tr>
<tr>
<td>INDUSTRIAL TRAINING CENTER—A factory oriented center including such facilities as: cafeteria, lodging, specialized training equipment, support staff, etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.0</td>
<td></td>
<td>8</td>
<td>8.25</td>
</tr>
<tr>
<td>FUNDING FOR PROJECT COORDINATION—Funding for such activities as: coordinating needs assessment, applying for grants, locating and employing resource consultants and instructors, obtaining instructional materials, obtaining audio/visual aids, supervising instruction, etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.0</td>
<td></td>
<td>9</td>
<td>9.00</td>
</tr>
<tr>
<td>TRAINING AIDS—Training aids to include such items as: video training programs, predeveloped overhead transparencies, computer programs, manuals, handouts, workbooks, etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.0</td>
<td></td>
<td>10</td>
<td>9.19</td>
</tr>
<tr>
<td>TEAM BUILDING TRAINING—Team building training such as: quality circles, group goal setting and problem solving, group process, participatory management, etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.0</td>
<td></td>
<td>11</td>
<td>9.88</td>
</tr>
<tr>
<td>ECONOMICS TRAINING—Economics training which is related to the manufacturing economy, world competition in productivity, world-wide banking, etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SERVICE AREA</td>
<td>PRIORITY</td>
<td>( \bar{x} )</td>
<td>sd</td>
</tr>
<tr>
<td>-------------</td>
<td>----------</td>
<td>----------</td>
<td>----</td>
</tr>
<tr>
<td>10. INCREASED FUNDING—Increased funding to reimburse costs of instruction such as: increased rate per hour, reimbursement for planning and preparation time, etc.</td>
<td>12</td>
<td>10.29</td>
<td>4.40</td>
</tr>
<tr>
<td>12. SAFETY RELATED TRAINING—Safety related training such as: right-to-know programs, first aid, safety practices and procedures, etc.</td>
<td>13</td>
<td>10.88</td>
<td>4.73</td>
</tr>
<tr>
<td>14. FUNDING FOR RESEARCH AND DEVELOPMENT—Research and development designed at trying new products, designs, production techniques, etc. for improving production.</td>
<td>14</td>
<td>11.25</td>
<td>4.36</td>
</tr>
<tr>
<td>15. NEEDS ASSESSMENT TESTING/TESTS—Needs assessment tests and testing to better and more accurately determine training needs.</td>
<td>15</td>
<td>11.94</td>
<td>4.22</td>
</tr>
<tr>
<td>16. NON-OCCUPATIONAL TRAINING PROGRAMS—Non-occupational specific training programs such as: quality control, SPS, advanced statistics, employee assistance, quality of work life, etc.</td>
<td>16</td>
<td>12.38</td>
<td>4.18</td>
</tr>
<tr>
<td>17. FISCAL YEAR MATCH—The fiscal year of the funding agency should match the fiscal year used by industry.</td>
<td>17</td>
<td>13.53</td>
<td>3.99</td>
</tr>
<tr>
<td>18. FUNDING FOR NON-CREDIT COLLEGE COURSES—Funding for courses such as: money management, recreational activities, speed reading, etc.</td>
<td>18</td>
<td>16.31</td>
<td>2.33</td>
</tr>
</tbody>
</table>
CHAPTER V
ANALYSIS OF DATA--SECOND STRATEGY SURVEY

Introduction

The purpose of this descriptive research study was to survey the Ohio manufacturing industries' training coordinators concerning delivery of customized training services by the State Department of Education, Division of Vocational Education and the State Department of Development in Ohio. This study implemented two research strategies to answer the questions stated in Chapter I. A data analysis of future customized training service needs of the participating manufacturing industries in Ohio were discussed in Chapter IV.

The second strategy Survey was designed to obtain information about: (1) whether services were available to manufacturing companies, (2) whether the service was needed by the manufacturing company, (3) whether the service was provided, and (4) was the provided service useful to the manufacturing company. This strategy utilized a single mailed survey. Questions 1, 2 and 3 were located in Part 1 of this survey and required
the training coordinators respond "no" or "yes". The usefulness of the service was measured by using a Likert technique with four to seven statements presented for the training coordinators to respond to with either: (1) strongly agree, (2) agree, (3) agree slightly, (4) disagree slightly (5) disagree, or (6) strongly disagree. The first general statement was worded positively. For statistical purposes the weights were reversed. The next three to six questions were randomly positioned in order and randomly worded positively or negatively. The results of the survey will be presented in this chapter.

The second strategy instrument was organized into 10 training service areas which were provided by the Ohio Industrial Training Program (OITP) to the manufacturing industries in Ohio. The 10 training service areas were determined by a review of the literature, consultations with the OITP advisory committee, and discussions with John Venters, Manager of the Office of Industrial Training (John Venters, personal communication, December 5, 1985). Presented in Tables 49 through 68 are the results of the survey. This data is presented in two tables for each service area. The first table presents data relating to Part 1 (services available, needed, and provided) and the second table presents data relating to Part 2 (service
usefulness). Part 1 discussion of the service being available, needed, and provided, and the first general statement of service usefulness in Part 2, will be presented later in this chapter. Discussion of the three to six specific statements, responded to by training coordinator will be presented in Tables 49 through 68. For the purpose of presentation, the statements used in the survey instrument in Part 2 will all be presented in a positive form.
Table 49

Service Area A—Part 1

SERVICE AREA: Provide the service and/or resources for assisting in the assessment of employee training needs

<table>
<thead>
<tr>
<th>QUESTIONS</th>
<th>RESPONSE</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>%</td>
<td>Yes</td>
</tr>
<tr>
<td>Was the service available to your company through OITP?</td>
<td>18</td>
<td>15.4</td>
<td>99</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Was the service needed by your company?</td>
<td>46</td>
<td>39.0</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Was the service and/or resource provided to your company through OITP?</td>
<td>55</td>
<td>46.2</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n=117</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n=118</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n=119</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 50

Service Area A—Part 2.

SERVICE AREA: Provide the service and/or resources for assisting in the assessment of employee training needs

<table>
<thead>
<tr>
<th>SD</th>
<th>D</th>
<th>DS</th>
<th>AS</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
</tr>
</tbody>
</table>

The service and/or resource provided by the OITP representative of assisting in the assessment of employee training needs was useful to your company.

n=64  $\bar{x}=5.63$  $sd=64$

The OITP representative was knowledgeable in the area of assessing employee training needs and/or of available resources to assist company personnel in the assessment of employee training needs.

n=64  $\bar{x}=5.30$  $sd=70$

The OITP representative did spend time in assisting company personnel in obtaining needed resources for assisting in the assessment of employee training needs.

n=64  $\bar{x}=6.02$  $sd=1.03$

The OITP representative did provide resources which adequately assisted in the assessment of employee training needs.

n=64  $\bar{x}=5.17$  $sd=83$
<table>
<thead>
<tr>
<th>QUESTIONS</th>
<th>RESPONSE</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Was the service available to your company through OITP?</td>
<td></td>
<td>15</td>
<td>12.8</td>
</tr>
<tr>
<td>n=117</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Was the service needed by your company?</td>
<td></td>
<td>40</td>
<td>33.9</td>
</tr>
<tr>
<td>n=118</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Was the service and/or resource provided to your company through OITP?</td>
<td></td>
<td>51</td>
<td>43.2</td>
</tr>
<tr>
<td>n=118</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 52

Service Area B—Part 2.

SERVICE AREA: Assist and/or provide resources in development of company training plan

<table>
<thead>
<tr>
<th></th>
<th>SD</th>
<th>D</th>
<th>DS</th>
<th>AS</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>f</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>30</td>
</tr>
<tr>
<td>%</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2.9</td>
<td>44.1</td>
</tr>
</tbody>
</table>

The service and/or resource provided by the OITP representative of assisting in the development of a company training plan was useful to your company.

n=68  \( \bar{X}=5.50 \)  \( sd=0.56 \)

The OITP representative was knowledgeable in the process of the development of a company training plan.

n=68  \( \bar{X}=5.24 \)  \( sd=1.01 \)

The process of developing a company training plan received adequate support from the OITP representative.

n=68  \( \bar{X}=5.25 \)  \( sd=0.80 \)
Table 53

Service Area C—Part 1

SERVICE AREA: Assist in the completion of an OITP grant application

<table>
<thead>
<tr>
<th>QUESTIONS</th>
<th>No</th>
<th>%</th>
<th>Yes</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was the service available to your company through OITP? n=119</td>
<td>0</td>
<td>0.0</td>
<td>119</td>
<td>100</td>
</tr>
<tr>
<td>Was the service needed by your company? n=120</td>
<td>2</td>
<td>1.7</td>
<td>118</td>
<td>98.3</td>
</tr>
<tr>
<td>Was the service and/or resource provided to your company through OITP? n=120</td>
<td>4</td>
<td>3.3</td>
<td>116</td>
<td>96.7</td>
</tr>
</tbody>
</table>
Table 54

**Service Area C—Part 2.**

**SERVICE AREA:** Assist in the completion of an OITP grant application

<table>
<thead>
<tr>
<th></th>
<th>SD</th>
<th>D</th>
<th>DS</th>
<th>AS</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>f</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>.9</td>
</tr>
<tr>
<td>%</td>
<td>35</td>
<td>30.2</td>
<td>80</td>
<td>69.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The service provided by the OITP representative of assisting in completing the application for obtaining an OITP grant was useful to your company.

n=118 \( \bar{x}=6.68 \) \( sd=.49 \)

<table>
<thead>
<tr>
<th></th>
<th>2</th>
<th>1.7</th>
<th>1.7</th>
<th>3</th>
<th>2.6</th>
<th>5</th>
<th>4.3</th>
<th>56</th>
<th>48.7</th>
<th>47</th>
<th>40.9</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>.9</td>
<td>3</td>
<td>2.6</td>
<td>4</td>
<td>3.4</td>
<td>53</td>
<td>45.7</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>4.3</td>
<td>10</td>
<td>8.6</td>
<td>7</td>
<td>6.0</td>
<td>8</td>
<td>5.9</td>
<td>62</td>
<td>53.4</td>
<td>24</td>
</tr>
</tbody>
</table>

The process of determining the cost of the training plan to obtain information needed for applying for OITP grant funds was adequately supported by the OITP representative.

n=118 \( \bar{x}=6.19 \) \( sd=.98 \)

The process of completing the OITP grant application was adequately communicated to company personnel by the OITP representative.

n=118 \( \bar{x}=6.36 \) \( sd=.75 \)

The application paperwork for obtaining an OITP grant was reasonable for the type of project and funds received.

n=118 \( \bar{x}=4.59 \) \( sd=1.35 \)
### Table 8.5

**Service Area D—Part 1**

**SERVICE AREA:** Provide the resources for obtaining instructor(s) for in-plant training through the staff(s) of a vocational school, technical institution, and/or university

<table>
<thead>
<tr>
<th>Questions</th>
<th>f</th>
<th>%</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was the service available to your company through OITP?</td>
<td>17</td>
<td>14.9</td>
<td>97</td>
<td>85.1</td>
</tr>
<tr>
<td>n=114</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Was the service needed by your company?</td>
<td>63</td>
<td>53.4</td>
<td>55</td>
<td>46.6</td>
</tr>
<tr>
<td>n=118</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Was the service and/or resource provided to your company through OITP?</td>
<td>72</td>
<td>61.0</td>
<td>46</td>
<td>39.0</td>
</tr>
<tr>
<td>n=118</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 96

**Service Area D—Part 2.**

**SERVICE AREA:** Provide the resources for obtaining instructor(s) for in-plant training through the staff(s) of a vocational school, technical institution, and/or university.

<table>
<thead>
<tr>
<th></th>
<th>SD</th>
<th>D</th>
<th>DS</th>
<th>AS</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>f</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The service provided by the OITF representative of obtaining instructor(s) for in-plant training through the staff of a vocational school, technical institution and/or university was useful to your company.

- n=46  
- M=6.25  
- SD=1.02

The OITF representative was knowledgeable of sources of instructors for the planned training areas.

- n=46  
- M=6.13  
- SD=1.11

The resource of instructor(s), which was provided by the OITF representative, supplied the quality of instruction needed to achieve the company's training goals.

- n=46  
- M=6.19  
- SD=.84

The procedure for utilizing instructor(s) from a vocational school, technical institution and/or university for in-plant training, was adequately communicated by the OITF representative.

- n=46  
- M=6.24  
- SD=.71
Table 56 (Continued)

<table>
<thead>
<tr>
<th>The paperwork was reasonable for obtaining funding to support the instructional cost.</th>
<th>0</th>
<th>0</th>
<th>2</th>
<th>4.3</th>
<th>2</th>
<th>4.3</th>
<th>3</th>
<th>6.5</th>
<th>26</th>
<th>56.5</th>
<th>13</th>
<th>28.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>n=46</td>
<td>( x=0.00 )</td>
<td>( s_d=.97 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The funding obtained through the OITP was a major factor in providing training for your company.</th>
<th>2</th>
<th>4.3</th>
<th>4</th>
<th>8.7</th>
<th>9</th>
<th>19.6</th>
<th>9</th>
<th>19.6</th>
<th>7</th>
<th>15.2</th>
<th>15</th>
<th>32.6</th>
</tr>
</thead>
<tbody>
<tr>
<td>n=46</td>
<td>( x=4.30 )</td>
<td>( s_d=1.53 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The process of receiving instructor(s) from a vocational school, technical institute and/or university received adequate support from the OITP representative.</th>
<th>0</th>
<th>0</th>
<th>0</th>
<th>0</th>
<th>2</th>
<th>4.3</th>
<th>2</th>
<th>4.3</th>
<th>24</th>
<th>52.2</th>
<th>18</th>
<th>39.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>n=46</td>
<td>( x=6.26 )</td>
<td>( s_d=.74 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 57

Service Area E—Part 1

SERVICE AREA: Provide the resource of instruction at a vocational school, technical institution, and/or university

<table>
<thead>
<tr>
<th>QUESTIONS</th>
<th>f</th>
<th>%</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was the service available to your company through OITP? n=113</td>
<td>23</td>
<td>20.4</td>
<td>90</td>
<td>79.6</td>
</tr>
<tr>
<td>Was the service needed by your company? n=114</td>
<td>82</td>
<td>71.9</td>
<td>32</td>
<td>28.1</td>
</tr>
<tr>
<td>Was the service and/or resource provided to your company through OITP? n=114</td>
<td>91</td>
<td>79.8</td>
<td>23</td>
<td>20.2</td>
</tr>
</tbody>
</table>
Table 58

Service Area E—Part 2.

SERVICE AREA: Provide the resource of instruction at the vocational school, technical institution, and/or university.

<table>
<thead>
<tr>
<th>SD</th>
<th>D</th>
<th>DS</th>
<th>AS</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
</tr>
</tbody>
</table>

The resource provided by the OITP representative of receiving instruction at a vocational school, technical institution and/or university was useful to your company.

n=22  x̄=4.86  sd=1.29

The process of receiving instruction at a vocational school, technical institution and/or university was adequately communicated to company personnel by the OITP representative.

n=22  x̄=6.00  sd=.98

The instruction received at the vocational school, technical institution, and/or university was adequate to meet company training needs.

n=22  x̄=4.86  sd=1.29

The OITP representative was knowledgeable of instructional resources at vocational schools, technical institutions, and/or universities which would meet company needs.

n=22  x̄=6.05  sd=1.09

31.8
Table 28 (continued)

<table>
<thead>
<tr>
<th>The paperwork was reasonable for obtaining funds to support the instructional cost.</th>
<th>0 0 1 4.8 0 0 3 13.6 15 66.2 3 13.6</th>
</tr>
</thead>
<tbody>
<tr>
<td>n=22</td>
<td>4.26</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The financial support obtained by receiving instruction at a vocational school, technical institution, and/or university was a major factor in providing training for your company.</th>
<th>0 0 6 25.1 4 17.4 4 17.4 4 17.4 5 21.7</th>
</tr>
</thead>
<tbody>
<tr>
<td>n=22</td>
<td>3.81</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The process of receiving instruction at a vocational school, technical institution, and/or university received adequate on-going support from the OITP representative.</th>
<th>4.2 3 12.8 1 4.2 3 12.8 10 41.7 6 25.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>n=24</td>
<td>4.20</td>
</tr>
</tbody>
</table>
Table 59

Service Area F—Part 1

SERVICE AREA: Provide the resource of the vocational school, technical institution, and/or university in assisting in the development of training curriculum

<table>
<thead>
<tr>
<th>QUESTIONS</th>
<th>RESPONSE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Was the service available to your company through OITP?</td>
<td>19</td>
</tr>
<tr>
<td>n=113</td>
<td>16.8</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Was the service needed by your company?</td>
<td>66</td>
</tr>
<tr>
<td>n=116</td>
<td>56.9</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Was the service and/or resource provided to your company</td>
<td>72</td>
</tr>
<tr>
<td>through OITP?</td>
<td>63.2</td>
</tr>
<tr>
<td>n=114</td>
<td></td>
</tr>
</tbody>
</table>
Table 60

Service Area F—Part 2.

SERVICE AREA: Provide the resource of the vocational school, technical institution, and/or university in assisting in the development of training curricula.

<table>
<thead>
<tr>
<th>SD</th>
<th>D</th>
<th>DG</th>
<th>AS</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>2</td>
<td>4.8</td>
<td>1</td>
<td>2.4</td>
</tr>
</tbody>
</table>

The resource provided by the OITP representative of the staff of a vocational school, technical institute, and/or university assisting company personnel in the development of training curricula was useful to your company.

n=42  \( \bar{x}=5.14 \)  sd=1.03

The resource provided by the OITP representative of the staff of a vocational school, technical institute, and/or university assisting in the development of the training curriculum was adequate to meet company needs.

n=42  \( \bar{x}=4.81 \)  sd=1.13

The OITP representative was knowledgeable of resources which the staff of a school, technical institution, and/or university could provide as assistance in the development of curriculum needed for your company's training program.

n=42  \( \bar{x}=5.12 \)  sd=.92
Table 60 (continued)

<table>
<thead>
<tr>
<th>The process of receiving assistance in the development of training curricula needed for your company's training program.</th>
<th>2</th>
<th>4.8</th>
<th>0</th>
<th>0</th>
<th>0</th>
<th>0</th>
<th>2</th>
<th>4.8</th>
<th>25</th>
<th>59.5</th>
<th>13</th>
<th>31.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>n=42</td>
<td>$\bar{x}=5.07$</td>
<td>$sd=1.07$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The process of receiving assistance in the development of curricula was adequately communicated by the GITP representative.</th>
<th>0</th>
<th>0</th>
<th>0</th>
<th>0</th>
<th>0</th>
<th>0</th>
<th>3</th>
<th>7.1</th>
<th>26</th>
<th>61.9</th>
<th>13</th>
<th>31.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>n=42</td>
<td>$\bar{x}=5.24$</td>
<td>$sd=0.58$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The funds obtained through the GITP were a major factor in the development of training curricula needed for your company's training program.</th>
<th>0</th>
<th>0</th>
<th>7</th>
<th>15.7</th>
<th>2</th>
<th>4.8</th>
<th>9</th>
<th>21.4</th>
<th>9</th>
<th>21.4</th>
<th>15</th>
<th>35.7</th>
</tr>
</thead>
<tbody>
<tr>
<td>n=42</td>
<td>$\bar{x}=4.55$</td>
<td>$sd=1.45$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The paperwork was reasonable for obtaining funds to support the development of training curricula needed for your company's training program.</th>
<th>1</th>
<th>2.3</th>
<th>6</th>
<th>14.0</th>
<th>1</th>
<th>2.3</th>
<th>4</th>
<th>9.3</th>
<th>23</th>
<th>83.5</th>
<th>8</th>
<th>18.6</th>
</tr>
</thead>
<tbody>
<tr>
<td>n=43</td>
<td>$\bar{x}=4.54$</td>
<td>$sd=1.35$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 61

Service Area G—Part 1

SERVICE AREA: Provide the resources of training materials (such as text books, manuals, supplies, software, etc.) through vocational schools, technical institutions, and/or universities

<table>
<thead>
<tr>
<th>QUESTIONS</th>
<th>RESPONSE</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Was the service available to your company through OITP? n=112</td>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>Was the service needed by your company? n=114</td>
<td></td>
<td>56</td>
<td>49.1</td>
<td>58</td>
<td>50.9</td>
</tr>
<tr>
<td>Was the service and/or resource provided to your company through OITP? n=113</td>
<td></td>
<td>61</td>
<td>54.0</td>
<td>52</td>
<td>46.0</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>D</td>
<td>DS</td>
<td>AS</td>
<td>A</td>
</tr>
<tr>
<td>-------</td>
<td>----</td>
<td>---</td>
<td>----</td>
<td>----</td>
<td>---</td>
</tr>
<tr>
<td>f</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>3.8</td>
<td>1</td>
</tr>
<tr>
<td>%</td>
<td>0</td>
<td>0</td>
<td>21</td>
<td>21</td>
<td>4</td>
</tr>
</tbody>
</table>

The service provided by the OITP representative of utilizing vocational schools, technical institutions, and/or universities to assist company personnel with obtaining training materials was useful to your company.

n=52

X^2=5.17

The OITP representative was knowledgeable of available resources through vocational schools, technical institutions, and/or universities to assist in the process of obtaining training materials.

n=52

X^2=5.15

The resources identified by the OITP representative to assist company personnel in obtaining training materials was adequate to meet your company's needs.

n=52

X^2=5.06

The procedure for utilizing vocational and/or technical school personnel in obtaining training materials was adequately communicated by the OITP representative.

n=52

X^2=5.08
The process of utilizing vocational and/or technical schools to assist company personnel in obtaining training materials received adequate support.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>1.9</th>
<th>2</th>
<th>3.8</th>
<th>1</th>
<th>1.9</th>
<th>5</th>
<th>9.4</th>
<th>27</th>
<th>50.9</th>
<th>17</th>
<th>32.1</th>
</tr>
</thead>
</table>

n=53  \( \bar{x}=5.00 \)  \( s_d=1.07 \)
Table 63

Service Area H—Part 1

SERVICE AREA: Provide assistance to company personnel in utilizing federal, state, and/or local community agency resources (services not to include vocational school, technical institution, and/or university services)

<table>
<thead>
<tr>
<th>QUESTIONS</th>
<th>No</th>
<th>%</th>
<th>Yes</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was the service available to your company through OITP?</td>
<td>29</td>
<td>27.4</td>
<td>77</td>
<td>72.6</td>
</tr>
<tr>
<td>n=106</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Was the service needed by your company?</td>
<td>78</td>
<td>68.4</td>
<td>36</td>
<td>31.6</td>
</tr>
<tr>
<td>n=114</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Was the service and/or resource provided to your company through OITP?</td>
<td>84</td>
<td>74.3</td>
<td>29</td>
<td>25.7</td>
</tr>
<tr>
<td>n=113</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 64

Service Area II—Part 2,

SERVICE AREA: Provide assistance to company personnel in utilizing federal, state, and/or community agency resources (service not to include vocational school, technical institution, and/or university services)

<table>
<thead>
<tr>
<th></th>
<th>SD</th>
<th>D</th>
<th>DS</th>
<th>AS</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>f</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3.4</td>
</tr>
<tr>
<td>%</td>
<td>3.4</td>
<td>1</td>
<td>3.4</td>
<td>15</td>
<td>51.7</td>
<td>12</td>
</tr>
<tr>
<td>61.4</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The service provided by the OTIP representative of providing assistance to company personnel in utilizing federal, state, and/or community agency resources was useful to your company.

n=29 \( \bar{x}=0.31 \) \( sd=0.71 \)

<table>
<thead>
<tr>
<th></th>
<th>SD</th>
<th>D</th>
<th>DS</th>
<th>AS</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>f</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>7.1</td>
</tr>
<tr>
<td>%</td>
<td>7.1</td>
<td>2</td>
<td>7.1</td>
<td>17</td>
<td>60.7</td>
<td>7</td>
</tr>
<tr>
<td>25.0</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The OTIP representative provided federal, state, and/or community agency resources which adequately met the needs identified by company personnel.

n=28 \( \bar{x}=0.04 \) \( sd=0.79 \)

<table>
<thead>
<tr>
<th></th>
<th>SD</th>
<th>D</th>
<th>DS</th>
<th>AS</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>f</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3.6</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>%</td>
<td>3.6</td>
<td>0</td>
<td>0</td>
<td>18</td>
<td>53.6</td>
<td>10</td>
</tr>
<tr>
<td>35.7</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The OTIP representative was knowledgeable of available federal, state, and/or community agency resources which could meet the needs identified by company personnel.

n=28 \( \bar{x}=0.31 \) \( sd=0.99 \)

<table>
<thead>
<tr>
<th></th>
<th>SD</th>
<th>D</th>
<th>DS</th>
<th>AS</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>f</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3.6</td>
<td>1</td>
</tr>
<tr>
<td>%</td>
<td>3.6</td>
<td>1</td>
<td>3.6</td>
<td>16</td>
<td>57.1</td>
<td>10</td>
</tr>
<tr>
<td>35.7</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The procedure for utilizing resources of federal, state, and/or community agencies was adequately communicated by the OTIP representative.

n=28 \( \bar{x}=0.65 \) \( sd=0.70 \)
### Table 65

**Service Area I—Part 1**

SERVICE AREA: Provide assistance to company personnel in locating training consultant services (not to include vocational, technical and/or university services)

<table>
<thead>
<tr>
<th>QUESTIONS</th>
<th>No</th>
<th>%</th>
<th>Yes</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was the service available to your company through OITP? n=107</td>
<td>26</td>
<td>24.3</td>
<td>81</td>
<td>75.7</td>
</tr>
<tr>
<td>Was the service needed by your company? n=117</td>
<td>88</td>
<td>75.2</td>
<td>29</td>
<td>24.8</td>
</tr>
<tr>
<td>Was the service and/or resource provided to your company through OITP? n=114</td>
<td>92</td>
<td>80.7</td>
<td>22</td>
<td>19.3</td>
</tr>
</tbody>
</table>
Table 66

Service Area 1—Part 2.

SERVICE AREA: Provide assistance to company personnel in locating training consultant services (not to include vocational, technical, and/or university services)

<table>
<thead>
<tr>
<th></th>
<th>SD</th>
<th>D</th>
<th>DS</th>
<th>AS</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>f</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The service of the OTIP representative in assisting company personnel in locating training consultant services was useful to your company.

n=22  \( \bar{x}=4.96 \)  \( sd=1.05 \)

The OTIP representative spent the time necessary in assisting company personnel in locating needed training consultant services.

n=22  \( \bar{x}=4.91 \)  \( sd=1.15 \)

The OTIP representative was knowledgeable of training consultant resources needed by your company.

n=22  \( \bar{x}=4.86 \)  \( sd=1.04 \)

The OTIP representative provided resources which provided adequate training consultant services.

n=22  \( \bar{x}=4.91 \)  \( sd=1.19 \)
Table 67

Service Area J—Part 1

SERVICE AREA: Provide OITP grant funds

<table>
<thead>
<tr>
<th>QUESTIONS</th>
<th>No</th>
<th>%</th>
<th>Yes</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was the service available to your company through OITP? n=118</td>
<td>1</td>
<td>0.8</td>
<td>117</td>
<td>99.2</td>
</tr>
<tr>
<td>Was the service needed by your company? n=117</td>
<td>1</td>
<td>0.9</td>
<td>116</td>
<td>99.1</td>
</tr>
<tr>
<td>Was the service and/or resource provided to your company through OITP? n=117</td>
<td>2</td>
<td>1.7</td>
<td>115</td>
<td>98.3</td>
</tr>
</tbody>
</table>
Table 68
Service Area 3—Part 2.
SERVICE AREA: Providing OITP grant funds

<table>
<thead>
<tr>
<th></th>
<th>SD</th>
<th>D</th>
<th>DS</th>
<th>AS</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>f</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>%</td>
<td>0</td>
<td>0</td>
<td>79</td>
<td>69</td>
<td>79</td>
<td>69</td>
</tr>
</tbody>
</table>

The service of OITP of providing grant funds was useful to your company.

\[ \bar{x} = 6.69, \quad sd = 4.6 \]

The funds obtained through OITP grants were paid in a reasonable time to your company.

\[ \bar{x} = 4.78, \quad sd = 1.38 \]

The funds provided by OITP for training grants were a major factor in providing instructional training to your company.

\[ \bar{x} = 3.74, \quad sd = 1.61 \]

The paperwork for obtaining payment of OITP grant funds was reasonable.

\[ \bar{x} = 4.54, \quad sd = 1.19 \]
The OTTP representative provided adequate on-going support in initiating and expediting grant fund payments to your company.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>3</th>
<th>2.7</th>
<th>8</th>
<th>7.1</th>
<th>8</th>
<th>7.1</th>
<th>44</th>
<th>39.9</th>
<th>49</th>
<th>43.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>$n=113$</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>$\bar{x}=5.11$</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td>$sd=1.08$</td>
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</tr>
</tbody>
</table>

The procedure for receiving OTTP grant funds was adequately communicated by the OTTP representative.

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>2</th>
<th>1.8</th>
<th>3</th>
<th>2.7</th>
<th>9</th>
<th>8.0</th>
<th>54</th>
<th>47.8</th>
<th>45</th>
<th>39.8</th>
</tr>
</thead>
<tbody>
<tr>
<td>$n=113$</td>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\bar{x}=5.21$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>$sd=.84$</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
The specific statements under each major service area were developed to further identify the specific elements of usefulness of the service provided to the manufacturing company. Although all the specific statements under each service area were independent of each other, there were similar statements in other service areas. Typical statements found throughout part 2 were: "Was the OITP representative knowledgeable in the service area", "Did the OITP representative spend enough time or was readily available in assisting", "Was the resource or service provided adequate to meet company needs", "Were information and procedures adequately communicated," "Was the process of receiving services and/or resources adequately supported", "Was the paperwork reasonable," "Was funding a major factor in providing the training service," and "Was the grant paid to the company in a reasonable time".

"Was the OITP representative knowledgeable in the service areas provided", resulted in a grand mean score of 5.14 with a range of mean scores from 4.86 to 5.39. The low mean score, 4.86, was reported in the service area "providing assistance to company personnel in locating training consultant services", The high mean score, 5.39, was reported in the service area "providing resources and/or services for assisting in the assessment of
employee training needs". The grant mean score for this statement indicates that the training coordinators were in agreement that the OITP representatives were knowledgeable in providing services and/or resources to their company.

"OITP representative spending enough time or being readily available" resulted in a grand mean score of 5.07. The low mean score, 4.91, was reported for the service area of providing assistance to company personnel in locating training consultant service. The high mean score, 5.27, was reported in the service area of providing resources and/or services for assisting in the development of the company training plan. The grand mean score for this statement would also indicate that the training coordinators were in agreement that the OITP representative did spend enough time or was readily available in providing services and/or resources to their company.

"Providing adequate services and/or resources to meet company needs", received a grand mean score of 5.00. The low mean score, 4.81, was reported in the service area of providing the resource of the vocational school, technical
institution, and/or university in assisting in the development of training curriculum. A high mean score, 5.17, was reported in the service area "providing service and/or resources for assisting in the assessment of employee training needs". Again, this grand mean score on this statement would indicate that the training coordinators were in agreement that the OITP representatives did provide adequate services and/or resources to meet company needs.

"Were information and procedures adequately communicated", received an grand mean score of 5.19. The low mean score, 5.00, was reported in the service area of providing the resource of instruction at the vocational school, technical institution, and/or university. The high score, 5.36, was reported in the service area of assisting in the completion of an OITP grant. Training coordinators were in agreement that information and procedures were adequately communicated.

"Adequate support from OITP representatives for the process of providing services and/or resources", received an grand mean score of 5.05. The low mean score,
5.00, was reported in the service area of providing the resource of instruction at the vocational school, technical institution, and/or university. The high score, 5.25, was reported in the service area of providing resources in the development of a company training plan. Again, training coordinators were in agreement that the OITP representative did provide adequate support to the process of providing services and resources to manufacturing companies in Ohio.

"Was the paper work required for receiving services and/or resources reasonable", received an grand mean score of 4.71. "Were the funds provided by OITP a major factor in providing training for your company" received an grand mean score of 4.13, and "Were the grant funds paid to your company in a reasonable time" received a grand mean score of 4.78. These service areas received a response of between slightly agree and agree for these statements by the training coordinators. All service areas received a mean response of slightly agree or higher on the specific statements.
Summary Part 1

In summarizing the responses to Part 1 of the survey instrument, Tables 69, 70, 71, and 72 are presented. Table 69 presents the percentage of "no" and "yes" responses to the question "Was the service available to your company". The highest percentage of "no" responses (27.4%) was reported for the service area of providing assistance to company personnel in utilizing federal, state, and/or community agency resources; the second highest percentage (24.3%) was reported for the service area of providing assistance to company personnel in locating consultant services. Assisting in the completion of an OITP grant application (0%) and providing OITP grant funds (0.8%) received the lowest percent of "no" responses. Overall, in all service areas, the training coordinators reported that the OITP made available an average of 85.7% of services and/or resources to their manufacturing companies.
Summary of "Whether Services were Available".

<table>
<thead>
<tr>
<th>SERVICE AREAS</th>
<th>% NO</th>
<th>% YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide the service and/or resources for assisting in the assessment of employee training needs</td>
<td>15.4</td>
<td>84.6</td>
</tr>
<tr>
<td>Assist and/or provide resources in development of company training plan</td>
<td>12.8</td>
<td>87.2</td>
</tr>
<tr>
<td>Assist in the completion of an OITP grant application</td>
<td>0.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Provide the resources for obtaining instructor(s) for in-plant training through the staff(s) of a vocational school, technical institution, and/or university.</td>
<td>14.9</td>
<td>85.1</td>
</tr>
<tr>
<td>Provide the resource of instruction at the vocational school, technical institution, and/or university</td>
<td>20.4</td>
<td>79.6</td>
</tr>
<tr>
<td>Provide the resource of the vocational school, technical institution, and/or university in assisting in the development of training curriculum.</td>
<td>16.8</td>
<td>83.2</td>
</tr>
<tr>
<td>Provide the resource of training materials (such as text books, manuals, supplies, software, etc.) through vocational schools, technical institutions, and/or universities</td>
<td>15.2</td>
<td>84.8</td>
</tr>
<tr>
<td>Providing OITP grant funds</td>
<td>0.8</td>
<td>99.2</td>
</tr>
</tbody>
</table>
Table 69 (continued)

<table>
<thead>
<tr>
<th>Service Description</th>
<th>Yes (%)</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide assistance to company personnel in utilizing federal, state, and/or community agency resources (service not to include vocational school, technical institution, and/or university services)</td>
<td>27.4</td>
<td>72.6</td>
</tr>
<tr>
<td>Provide assistance to company personnel in locating training consultant services (not to include vocational, technical, and/or university services)</td>
<td>24.3</td>
<td>75.7</td>
</tr>
</tbody>
</table>

Table 70 represents the percentage of "no" and "yes" responses to the question "Was the service needed by your company". Six service areas of near 50% or more were reported by training coordinators as services not being needed by manufacturing companies in Ohio. The two highest percentages of "no" responses were reported in the service area of providing assistance to company personnel in locating training consultant services (75.2%) and providing the resources of instruction at the vocational school, technical institution, and/or university (71.9%). The two lowest percentages of "no" responses were reported by training coordinators as the services of assisting in the completion of an OITP grant application (1.7%) and providing OITP grant funds (0.9%). Overall, in all the service areas, the training coordinators reported that 55.0% of the OITP training services were needed by the manufacturing companies in Ohio.
Table 70

Summary of "Was the Service Needed".

<table>
<thead>
<tr>
<th>SERVICE AREAS</th>
<th>% NO</th>
<th>% YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide the service and/or resources for assisting in the assessment of employee training needs</td>
<td>39.0</td>
<td>61.0</td>
</tr>
<tr>
<td>Assist and/or provide resources in development of company training plan</td>
<td>33.9</td>
<td>66.1</td>
</tr>
<tr>
<td>Assist in the completion of an OITP grant application</td>
<td>1.7</td>
<td>98.3</td>
</tr>
<tr>
<td>Provide the resources for obtaining instructor(s) for in-plant training through the staff(s) of a vocational school, technical institution, and/or university.</td>
<td>53.4</td>
<td>46.6</td>
</tr>
<tr>
<td>Provide the resource of instruction at the vocational school, technical institution, and/or university</td>
<td>71.9</td>
<td>28.1</td>
</tr>
<tr>
<td>Provide the resource of the vocational school, technical institution, and/or university in assisting in the development of training curriculum.</td>
<td>56.9</td>
<td>43.2</td>
</tr>
<tr>
<td>Provide the resource of training materials (such as text books, manuals, supplies, software, etc.) through vocational schools, technical institutions, and/or universities</td>
<td>49.1</td>
<td>50.9</td>
</tr>
<tr>
<td>Provide assistance to company personnel in utilizing federal, state, and/or community agency resources (service not to include vocational school, technical institution, and/or university services)</td>
<td>68.4</td>
<td>31.6</td>
</tr>
</tbody>
</table>
Table 70 (continued)

<table>
<thead>
<tr>
<th>Service Description</th>
<th>Yes (%)</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide assistance to company personnel in locating training consultant services (not to include vocational, technical, and/or university services)</td>
<td>75.2</td>
<td>24.8</td>
</tr>
<tr>
<td>Providing OITP grant funds</td>
<td>0.9</td>
<td>99.1</td>
</tr>
</tbody>
</table>

Table 71 represents the percentage of "no" and "yes" responses to the question "Was the service provided to your company"? Six service areas of 54.0% or more were reported by training coordinators as services not being provided to manufacturing companies in Ohio. The three highest percentages of "no" responses were reported in the service areas of providing assistance to company personnel in locating training consultant services (80.7%), providing the resources of instruction at the vocational school, technical institution, and/or university (79.8%), and providing assistance to company personnel in utilizing federal/state/local agency resources (74.3%). The lowest "no" responses were reported by training coordinators as the services of assisting in the completion of an OITP grant application (3.3%) and providing OITP grant funds (1.7%). Overall, in all the service areas, the training coordinators reported that 39.4% of the OITP training services were provided to the manufacturing companies.
Table 71

Summary of "Was the Service Provided"?

<table>
<thead>
<tr>
<th>SERVICE AREAS</th>
<th>% NO</th>
<th>% YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide the service and/or resources for assisting in the assessment of employee training needs</td>
<td>46.2</td>
<td>53.8</td>
</tr>
<tr>
<td>Assist and/or provide resources in development of company training plan</td>
<td>43.2</td>
<td>56.8</td>
</tr>
<tr>
<td>Assist in the completion of an OITP grant application</td>
<td>3.3</td>
<td>96.7</td>
</tr>
<tr>
<td>Provide the resources for obtaining instructor(s) for in-plant training through the staff(s) of a vocational school, technical institution, and/or university.</td>
<td>61.0</td>
<td>39.0</td>
</tr>
<tr>
<td>Provide the resource of instruction at the vocational school, technical institution, and/or university</td>
<td>79.8</td>
<td>20.2</td>
</tr>
<tr>
<td>Provide the resource of the vocational school, technical institution, and/or university in assisting in the development of training curriculum.</td>
<td>63.2</td>
<td>36.9</td>
</tr>
<tr>
<td>Provide the resource of training materials (such as text books, manuals, supplies, software, etc.) through vocational schools, technical institutions, and/or universities</td>
<td>54.0</td>
<td>46.0</td>
</tr>
<tr>
<td>Provide assistance to company personnel in utilizing federal, state, and/or community agency resources</td>
<td>74.3</td>
<td>25.7</td>
</tr>
</tbody>
</table>
Table 71 (continued)

<table>
<thead>
<tr>
<th>Service Description</th>
<th>Mean (x)</th>
<th>Standard Deviation (sd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide assistance to company personnel in locating training consultant services</td>
<td>80.7</td>
<td>19.3</td>
</tr>
<tr>
<td>(not to include vocational, technical, and/or university services)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Providing OITP grant funds</td>
<td>1.7</td>
<td>98.3</td>
</tr>
</tbody>
</table>

Table 72 presents the summary of responses to the first general statement in each service area concerning "Was the service useful to your company"? Reported are the number of responders (n), the mean score (\( \bar{x} \)), and the standard deviation (sd) for each service area. The mean scores for all the service areas ranged from 4.86 to 5.69 with the highest mean score reported for the service area of providing grant funds (5.69) and the lowest mean score for the service area of receiving instruction at a vocational school, technical institution, and/or university (4.86). All the service areas received a high mean score indicating that the services were useful to their companies. Overall, the training representatives agreed to the services being useful to their company. The average mean score for all the service areas was 5.29.

The conclusions and recommendations for the second strategy survey are discussed in Chapter VI.
<table>
<thead>
<tr>
<th>FIRST GENERAL STATEMENT</th>
<th>n</th>
<th>X</th>
<th>sd</th>
</tr>
</thead>
<tbody>
<tr>
<td>The service and/or resource provided by the OITP representative of assisting in the assessment of employee training needs was useful to your company.</td>
<td>68</td>
<td>5.48</td>
<td>.64</td>
</tr>
<tr>
<td>The service and/or resource provided by the OITP representative of assisting in the development of a company training plan was useful to your company.</td>
<td>68</td>
<td>5.50</td>
<td>.56</td>
</tr>
<tr>
<td>The service provided by the OITP representative of completing the application for obtaining an OITP grant was useful to your company.</td>
<td>116</td>
<td>5.68</td>
<td>.49</td>
</tr>
<tr>
<td>The service provided by the OITP representative of obtaining instructor(s) for in-plant training through the staff of a vocational school, technical institution and/or university was useful to your company.</td>
<td>46</td>
<td>5.26</td>
<td>1.02</td>
</tr>
<tr>
<td>The resource provided by the OITP representative of receiving instruction at a vocational school, technical institution and/or university was useful to your company.</td>
<td>22</td>
<td>4.86</td>
<td>1.39</td>
</tr>
<tr>
<td>The resource provided by the OITP representative of the staff of a vocational school, technical institute, and/or university assisting company personnel in the development of training curriculum was useful to your company.</td>
<td>42</td>
<td>5.14</td>
<td>1.03</td>
</tr>
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</table>
Table 72 (continued)

<table>
<thead>
<tr>
<th>Service</th>
<th>Count</th>
<th>Mean</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>The service provided by the OITP representative of utilizing vocational schools, technical institutions, and/or universities to assist company personnel with obtaining training materials was useful to your company.</td>
<td>52</td>
<td>5.17</td>
<td>.94</td>
</tr>
<tr>
<td>The service provided by the OITP representative of providing assistance to company personnel in utilizing federal, state, and/or community agency resources was useful to your company.</td>
<td>29</td>
<td>5.31</td>
<td>.71</td>
</tr>
<tr>
<td>The service of the OITP representative in assisting company personnel in locating training consultant services was useful to your company.</td>
<td>22</td>
<td>4.96</td>
<td>1.05</td>
</tr>
<tr>
<td>The service of OITP of providing grant funds was useful to your company.</td>
<td>114</td>
<td>5.69</td>
<td>.46</td>
</tr>
</tbody>
</table>
Significant Difference Between Groups.

Part 1 and part 2 data of the survey were analyzed with a One-way Analysis of Variance to see if there was a significant difference between data of responders who returned the surveys before the deadline (group 1, n=89) (see Appendix R), responders who returned the survey after the deadline date (group 2, n=35), and responders who were part of the double dipped sample of non-responders (group 3, n=15). Groups 2 and 3 responders are listed in Appendix S. Only one question from part 1 of the survey (was the service available to your company?) for service area D reported a significant difference (see Table 73). The significant difference was reported between groups 2 and 3.

Four statements in part 2 of the survey reported a significant difference. The seventh specific statement in service area D reported a significant difference between responses. The significant difference was reported between groups 2 and 3. Data for all three groups are presented below in Table 74.

The first general statement and the fifth specific statement in service area E reported a significant difference in responses. The significant difference was
reported between groups 1 and 2 for the first general statement and between groups 2 and 3 for the fifth specific statement. Data for all three groups on both statements are presented in Table 75.

Table 73

Groups With Significant Difference.

Service Area D—Part 1 (Group 1, 2, & 3)

SERVICE AREA: Provide the resources for obtaining instructor(s) for in-plant training through the staff(s) of a vocational school, technical institution, and/or university

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>No</th>
<th>%</th>
<th>Yes</th>
<th>%</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>QUESTIONS</th>
<th>f</th>
<th>%</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was the service available to your company through OITP?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Group 1) n=116</td>
<td>17</td>
<td>14.9</td>
<td>97</td>
<td>85.1</td>
</tr>
<tr>
<td>(Group 2) n=27</td>
<td>27</td>
<td>77.1</td>
<td>00</td>
<td>00.0*</td>
</tr>
<tr>
<td>(Group 3) n=12</td>
<td>04</td>
<td>33.3</td>
<td>08</td>
<td>66.7*</td>
</tr>
</tbody>
</table>
Table 74

<table>
<thead>
<tr>
<th>Service Area D—Part 2 (Groups 1, 2, &amp; 3).</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SERVICE AREA:</strong> Provide the resources for obtaining instructors(s) for in-plant training through the staff(s) of a vocational school, technical institute, and/or university.</td>
</tr>
</tbody>
</table>

The process of receiving instruction from a vocational school, technical institute and/or university received adequate support from the OITP representative.

<table>
<thead>
<tr>
<th></th>
<th>SA</th>
<th>A</th>
<th>AS</th>
<th>DS</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>(Group 1)</td>
<td>n=32</td>
<td>$\bar{x}=5.26$</td>
<td>$sd=0.58$</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>(Group 2)</td>
<td>n=10</td>
<td>$\bar{x}=4.90$</td>
<td>$sd=1.01$</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>(Group 3)</td>
<td>n=4</td>
<td>$\bar{x}=1.67$</td>
<td>$sd=0.49$</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

120
Table 75

Service Area E—Part 2 (Groups 1, 2, & 3).

SERVICE AREA: Provide the resource of instruction at the vocational school, technical institution, and/or university

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Mean (M)</th>
<th>SD</th>
<th>SA</th>
<th>A</th>
<th>'AS</th>
<th>DS</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>22</td>
<td>5.40</td>
<td>1.39</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>14.5</td>
<td>1</td>
<td>4.5</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>3.20</td>
<td>0.45</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>120.0</td>
<td>1</td>
<td>20.0</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>3.50</td>
<td>2.12</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>50.0</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

The resource provided by the OITP representative of receiving instruction at a vocational school, technical institution and/or university was useful to your company.

The paperwork was reasonable for obtaining funds to support the instructional cost.
The first general statement in services area F reported a significant difference in responses. The significant difference was reported between groups 1 and 2. Data for all three groups are presented below in Table 76.
Table 76

Service Area F—Part 2.

SERVICE AREA: Provide the resource of the vocational school, technical institution, and/or university in assisting in the development of training curriculum.

The resource provided by the GHTP representative of the staff of a vocational school, technical institute, and/or university assisting company personnel in the development of training curriculum was useful to your company.

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CHAPTER VI
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this descriptive research study was to survey training coordinators of Ohio manufacturing industries concerning the delivery of customized training services provided by the State Department of Education, Division of Vocational Education and the State Department of Development in Ohio. The population studied represented the 420 training coordinators of these industries in Ohio which had been served by the Ohio Industrial Training Program (OITP) between July 1, 1983 and December 31, 1985. This study implemented two research strategies to address seven research questions.

First research strategy—Delphi.

1. What do manufacturing companies' training coordinators believe are training services not provided by OITP that should be provided within the next three years?

2. To what extent do manufacturing companies' training coordinators agree regarding the training services not provided by OITP that should be provided within the next three years?
3. Of the training services identified by training coordinators as needing to be provided by OITP within the next three years, what is the manufacturing companies' training coordinators beliefs as to the priority of training services to be provided?

Second research strategy—Survey.

4. What training services were offered or available to manufacturers through OITP?

5. What training services were offered or available to manufacturers through OITP, but were not needed?

6. What training services were provided to manufacturers through OITP?

7. Were the training services provided by OITP useful to manufacturers?

Future customized training service needs of participating manufacturing industries were identified by the first strategy using a Delphi technique. This strategy utilized three rounds of mailed survey instruments (Delphi 1, Delphi 2, and Delphi 3). Delphi 1 was an open-ended question type instrument. The Delphi 1 instrument was designed to have participants indicate no fewer than two nor more than five training services needed by their companies in the future, but which were not available through the Ohio Industrial Training Program (OITP). These results were then edited and synthesized into 18 general training service areas used in the second
and third round Delphi instruments. For each training service need identified, participants were asked (1) to agree or to disagree with the training service need listed, (2) to indicate their degree of certainty, (3) to support their position if they so desired, and (4) to suggest additional needed training services.

In the Round 3 Delphi, the participants were (1) given the percentage of agreement and disagreement for each training service need, (2) shown their position from the previous round, (3) shown the comments from the previous round, and (4) given notes from the researcher where clarification was needed. The participants were asked to reconsider their earlier positions. The participants were also asked to prioritize the 18 service areas from 1 to 18, with "1" being the service area which should be provided by OITP as a first priority and "18" being the service area which should be provided by OITP as a last priority.

The second strategy Survey was designed to obtain information about: (1) whether services were available to manufacturing companies, (2) whether the service was needed by the manufacturing company, (3) whether the service was provided, and (4) was the provided service useful to the manufacturing company. This strategy
utilized a single mailed survey. Questions 1, 2 and 3 were located in Part 1 of this survey and required the training coordinators respond either "no" or "yes". The usefulness of the service was measured with a Likert type scale with four to seven statements presented for the training coordinators to respond to with either: (1) strongly agree, (2) agree, (3) agree slightly, (4) disagree slightly (5) disagree, or (6) strongly disagree. The second strategy instrument was organized into 10 training service areas which were provided by the Ohio Industrial Training Program (OITP) for the manufacturing industries in Ohio.

A formal review with the OITP advisory committee prior to each round was used to verify and/or correct for researcher bias in the analysis and interpretations of the participants' comments. Data were reported for each service need (identified in Round 1 Delphi) in terms of frequencies, percentages, means, and standard deviations. Second and third round responses were compared with a T-Test to illustrate any significant changes in responses from Round 1 and Round 2.

In the first part of the Survey instrument the "yes" and "no" responses were recorded and the frequency and the percentage of yes/no responses calculated. Data from the
second part of the second strategy Survey instrument was converted to a six point scale with one (1) being assigned to the lowest level of agreement on the usefulness of services provided. A six (6) was assigned to the highest level of agreement on the usefulness of the services provided. Data from the second part (Likert type scale) was reported in terms of frequencies, percentages, means, and standard deviations.

First part and second part data were also analyzed with a One way Analysis of Variance using SPSSX statistical program to determine if there was a significant difference in responses at the .05 level between Group 1 (responders before deadline date), Group 2 (late responders--not double dipped) and Group 3 (late responders--double dipped).

Findings and Conclusions

Eighteen general training service areas were identified as future needs currently not provided by OITP that should be provided within the next three years. Through the review of literature and consultations with representatives of OITP, Department of Development, and Department of Education, Division of Vocational Education, this researcher concluded that 5 of the 18 service areas identified are currently available through OITP. The
five service areas were (1) team building training, (2) management development programs, (3) occupational training programs, (4) non-occupational training programs, and (5) needs assessment testing/tests. This would indicate that either OITP representatives are not offering these services to the manufacturing companies, or that the OITP representatives are not communicating the availability of these services to the companies.

After Round 2 of the Delphi, the extent of agreement reached by the participants regarding training services not provided by OITP that should be provided within the next three years were: (1) personnel resource list (mean score = 12.13), (2) information on Ohio Industrial Training Program services (mean score = 12.93), and (3) decreased time for project approval. These three areas had a mean score of 12.12 or above on a 0 to 16 point scale, with "0" indicating the lowest level of agreement and "16" indicating the highest level of agreement. Information on Ohio Industrial Training Program services is already being provided by OITP. Because this service is currently available and the participants reached an agreement in the first round of the Delphi survey concerning this service, this researcher concluded that there is a major communication and/or marketing problem.
The mean scores of two training areas changed significantly \((p=.05)\) between Rounds 2 and 3 of the Delphi. The two areas were (1) funding for research and development and (2) information on federal/state funding. It appears that responses of Round 2 participants influenced the participants during Round 3 to change their responses on these two service areas. However, the participants did not report any significant change on the remaining 16 service areas.

A score of nine or above would indicate agreement on the transformation of certainty scale used in the Delphi survey. Seventeen of eighteen areas surveyed received a mean score of 9.33 or higher. Ten of the eighteen service areas received a mean score of 12.07 or higher. Delphi participants reported that these 10 service areas have a high probability of being needed in the next three years. They were: (1) occupational training programs, (2) information federal/state funding, (3) team building training, (4) information on OITP services, (5) decreased time for project approval, (6) economics training (7) funding for project coordination, (8) non-occupational training programs, (9) personnel resource list and, (10) safety related training.
The top five service areas needed within the next three years were the same for both Rounds 2 and 3. The top five service areas stayed the same or increased in level of certainty from Round 2 to Round 3. These five service areas were (1) occupational training program, (2) information on federal/state funding, (3) team building training, (4) information on OITP services, and (5) decreased time for project approval.

Of the top five service areas participants recommended to be provided, only Service Area 4, personnel resource list, was not in the top five in the level of certainty as being needed in the future. Based on the data, this researcher concluded that the Delphi participants clearly indicated that: (1) occupational training programs, (2) information on federal/state funding, (3) information on OITP services, and (4) decreased time for project approval are all needed within the next three years and are high in priority for OITP to provide.

Based on data from the second research strategy, training coordinators reported a grand mean score of 14.3% for the overall services and resources that were not available to their companies. This finding supports the finding identified during first research strategy.
Six service areas of approximately 50% or greater were reported by training coordinators as services not needed by manufacturing companies. The six service areas were: (1) provide assistance to company personnel in locating training consultant services (75.2%), (2) provide the resource of instruction at the vocational school, technical institution, and/or university (71.9%), (3) provide assistance to company personnel in utilizing federal, state and/or community agency resources (68.4%), (4) provide the resource of the vocational school, technical institution, and/or university (56.9%), (5) provide the resources for obtaining instructor(s) for in-plant training through the staff(s) of a vocational school, technical institution, and/or university (53.4%), and/or (6) provide the resource of training materials through vocational school, technical institution, and/or university (49.1%). In Part 2 of the second strategy Survey instrument, training coordinators reported that when services were provided they were found useful by manufacturing companies; however, it would appear that many manufacturing companies do not need these services to provide training.
Assisting in the completion of the OITP grant application (96.7%) and providing OITP grant funds (99.1%) received the two highest percentages of service areas to be provided to manufacturing companies. The three service areas that had the lowest percentages reported for the services that were not provided were: (1) providing assistance to company personnel in locating consultant services (80.7%), (2) providing the resource of instruction at a vocational school, technical institution, and/or university (79.8%), and (3) providing assistance to company personnel in utilizing federal, state and/or community agency resources (74.3%).

In each service area concerning "Was the service useful to your company", the mean scores for the first general statement for all the service areas ranged from 4.86 to 5.69 with the highest mean score reported for the service area of providing grant funds (5.69) and the lowest mean score for the service area of receiving instruction at a vocational school, technical institution, and/or university (4.86). All the service areas received a high mean score indicating that the services were useful to their companies. Overall, the training representatives agreed that the services were useful to their companies. The grand mean score for all the service areas was 5.29.
The specific statements under each major service area were developed to further identify the specific elements of usefulness of the service provided to the manufacturing companies. Although all the specific statements under each service area were independent of each other, there were similar statements in other areas. Typical statements found throughout Part 2 were: "Was the OITP representative knowledgeable in the service area," "Did the OITP representative spend enough time and was readily available in assisting," "Was the resource or service provided adequate to meet company needs," "Were information and procedures adequately communicated," "Was the process of receiving services and/or resources adequately supported," "Was the paperwork reasonable," "Was funding a major factor in providing the training service," and "Was the grant paid to the company in a reasonable time."

"Was the OITP representative knowledgeable in the service areas provided," resulted in a grand mean score of 5.14 with a range of mean scores from 4.86 to 5.39. The low mean score, 4.86, was reported in the service area "providing assistance to company personnel in locating training consultant services." The high mean score, 5.39, was reported in the service area "providing resources
and/or services for assisting in the assessment of employee training needs." The grand mean score for this statement indicates that the training coordinators were in agreement that the OITP representatives were knowledgeable in providing services and/or resources to their companies.

"OITP representative spending enough time or being readily available," resulted in a grand mean score of 5.07. The low mean score, 4.91, was reported for the service area of providing assistance to company personnel in locating training consultant service. The high mean score, 5.27, was reported in the service area of providing resources and/or services for assisting in the development of the company training plan. The grand mean score for this statement would also indicate that the training coordinators were in agreement that the OITP representative did spend enough time and was readily available in providing services and/or resources to their companies.

"Providing adequate services and/or resources to meet company needs," received a grand mean score of 5.00. The low mean score, 4.81, was reported in the service area of providing the resource of the vocational school, technical institution, and/or university in assisting in the development of training curriculum. A high mean score,
5.17, was reported in the service area "providing service and/or resources for assisting in the assessment of employee training needs." Again, this grand mean score on this statement would indicate that the training coordinators were in agreement that the OITP representatives did provide adequate services and/or resources to meet company needs.

"Were information and procedures adequately communicated" received a grand mean score of 5.19. The low mean score, 5.00, was reported in the service area of providing the resource of instruction at the vocational school, technical institution, and/or university. The high score, 5.36, was reported in the service area of assisting in the completion of an OITP grant. Training coordinators were in agreement that information and procedures were adequately communicated.

"Adequate support from OITP representatives for the process of providing services and/or resources" received a grand mean score of 5.05. The low mean score, 5.00, was reported in the service area of providing the resource of instruction at the vocational school, technical institution, and/or university. The high score, 5.25, was reported in the service area of providing resources in the development of a company training plan. Again, training
coordinators were in agreement that the OITP representative did provide adequate support to the process of providing services and resources to manufacturing companies in Ohio.

"Was the paper work required for receiving services and/or resources reasonable" received a grand mean score of 4.71, "Were the funds provided by OITP a major factor in providing training for your company" received a grand mean score of 4.13, and "Were the grant funds paid to your company in a reasonable time" received a grand mean score of 4.78. These service areas received a response of between slightly agree and agree for these statements by the training coordinators. All service areas received a mean response of slightly agree or higher on the specific statements.

This researcher concluded that based on the data reported, the training coordinators did agree that for the specific service area statements, the services were useful to their companies. Three of the lowest mean scores for specific statement areas were reported for the services areas of: (1) Providing the resource of instruction at a vocational school, technical institution, and/or university—service area E, (2) Providing the resource of obtaining instructor(s) for in-plant training through the
vocational school, technical institution, and/or university—Service Area D, and (3) provide OITP grant funds—Service Area J. The low mean scores were reported for the specific statement types of: "funding obtained through OITP was a major factor in providing training".

Of the 18 specific statements that received a mean score of 5.00 or lower, 10 statements were in the service areas of (1) provide the resource of obtaining instructor(s) for in-plant training through the staff(s) of a vocational school, technical institution, and/or university, (2) provide the resource of instruction at a vocational school, technical institution, and/or university, and (3) provide the resource of the vocational school, technical institution, and/or university assisting in the development of training curriculum. Based on the reported data the training coordinators were reported to have the lowest level of agreement in these service areas.

Part 1 and Part 2 data of the survey were analyzed with a One-way Analysis of Variance to see if there was a significant difference between data of responders who returned the surveys before the deadline (Group 1, n=89), responders who returned the survey after the deadline date (Group 2, n=35), and responders who were part of the double dipped sample of nonresponders (Group 3, n=15).
Only one question from Part 1 of the survey (Was the service available to your company?) for Service Area D, "providing the resource of instructor(s) for in-plant training through the staff(s) of a vocational school, technical institution, and/or university," reported a significant difference. The significant difference was reported between Groups 2 and 3. Therefore, there may be a difference between Groups 2 and 3 on this service area.

Four statements in Part 2 of the survey reported a significant difference. The seventh specific statement in Services Area D, "the process of receiving instructions from a vocational school, technical institution, and/or university," reported a significant difference in responses. The significant difference was reported between Groups 2 and 3. Group 3 had a n=4 due to the fact that this service was needed in only four of the double dipped nonresponding companies. With such a low "n" this researcher would consider the significant difference reported not to be useable to predict a difference in Groups 2 and 3.

The first general statement and the fifth specific statement in Services Area E, "provide the resource of instruction at a vocational school, technical institution, and/or university", reported a significant difference in
responses. The significant difference was reported between Groups 1 and 2 for the first general statement and between groups 2 and 3 for the fifth specific statement. Group 2 in both statements had an n=5 due to the fact that this service area was needed in only five companies. With such a low "n" this researcher would consider the significant difference reported not to be useable to predict a difference between groups.

The first general statement in Service Area F "the resource provided by the OITP representative of the staff of a vocational school, technical institution, and/or university," reported a significant difference in responses. The significant difference was reported between Groups 1 and 2. Group 2 had an n=10, therefore there may be a difference between Groups 1 and 2 on this service area.

Except for the first general statement in Part 2 of Service Area F and the first question in Part 1 of Service Area D, this researcher would consider that there is no significant difference between Groups 1, 2, and 3.

Recommendations

The following recommendations are set forth based on the results of this study:

1. Eighteen general training service areas were
identified as future needs currently not provided by OITP that should be provided within the next three years.

Through the review of literature and consultations with representatives of OITP, Department of Development, and Department of Education, Division of Vocational Education, this researcher concluded that 5 of the 18 service areas identified are currently available through OITP. This would indicate that either OITP representatives are not offering these services to the manufacturing companies, the OITP representatives are not communicating the availability of these services to the companies, and/or the services brokered through vocational schools, technical institutions, and/or universities are not adequate to meet company training needs. Based on data from the second research strategy Survey, training coordinators reported a grand mean score of 14.3% for the overall services and resources that were not available to their companies. This finding would also support the finding identified during first research strategy.

"Information on Ohio Industrial Training Program services" is already being provided by OITP. Because this service is currently available and the participants reach an agreement in the Round 2 of the Delphi survey concerning this service, this researcher would conclude there is a
major problem concerning marketing services and/or providing adequate brokered services. Representatives of the OITP should review their marketing strategies to improve their communication and marketing of training services to manufacturing industries in Ohio. Vocational schools, technical institutions, and/or universities should assist the OITP representatives in the marketing of services that are or could be provided through their institutions. Vocational schools, technical institutions, and/or universities should also review their services to determine whether the services offered or provided are adequate to meet the needs of industry.

2. After Round 3 of the Delphi, a consensus of agreement was reached by the participants regarding training services not provided by OITP that should be provided within the next three years. They were: (1) information on federal, state, and community funding for training, (2) information on Ohio Industrial Training Program Services, and (3) decreased time for project approval. Representatives of the OITP should review their policies and procedures regarding these three training service areas to be able to provide and/or better provide these services.
3. Ten of the eighteen service areas received a mean score of 12.07 or higher. Delphi participants reported that these 10 service areas have a high probability of being needed in the next three years. They were: (1) occupational training programs, (2) information on federal/state funding, (3) team building training, (4) information on OITP services, (5) decreased time for project approval, (6) economics training, (7) funding for project coordination, (8) non-occupational training programs, (9) personnel resource list, and (10) safety related training. Representatives of the OITP should review their policies and procedures regarding these training service areas to be able to provide or better provide these services.

4. The top five service areas needed within the next three years were the same for both Rounds 2 and 3. The top five service areas stayed the same or increased in level of certainty from Round 2 to Round 3 of the Delphi. These five service areas were (1) occupational training program, (2) information on federal, state, and local funding, (3) team building training, (4) information on OITP services, and (5) decreased time for project approval. Of the top five service areas participants recommended to be provided, only Service Area 4, personnel
resource list, was not in the top five in the level of certainty as being needed in the next three years. Based on the data, this researcher concluded that the Delphi participants clearly indicated that: (1) occupational training programs, (2) information on federal, state, and local funding, (3) information on OITP services, and (4) decreased time for project approval are both needed within the next three years and are high in priority for OITP to provide. Representatives of the OITP should review their policies and procedures regarding these four training service areas to be able to provide or better provide these services. Vocational schools, technical institutions, and/or universities should review their available services and their policies in providing services to industry to determine what role they should play in providing training services needed by industry in the next three years.

5. As a result of the second research strategy Survey, six service areas of approximately 50% or greater were reported by training coordinators as services not needed by manufacturing companies. The six service areas were: (1) provide assistance to company personnel in locating training consultant services (75.2%), (2) provide the resource of instruction at the vocational school,
technical institution, and/or university (71.9%), (3) provide assistance to company personnel in utilizing federal, state, and/or community agency resources (68.4%), (4) provide the resource of the vocational school, technical institution, and/or university in assisting in the development of training curriculum (56.9%), (5) provide the resources for obtaining instructor(s) for in-plant training through the staff(s) of a vocational school, technical institution, and/or university (53.4%), and (6) provide the resource of training materials through vocational school, technical institution, and/or university (49.1%). In Part 2 of the second strategy Survey instrument, training coordinators reported that when services were provided, they were found useful by manufacturing companies; however, it would appear that many manufacturing companies do not need these services to provide training. Four of the six services reported are services brokered through vocational schools, technical institutions, and/or universities. Further study of services identified as not needed should be made by the representatives of the OITP and Vocational schools, technical institutions, and/or universities to determine whether these services are really not needed by many companies or that the services are not adequate to meet
the needs.

6. Assisting in the completion of the OITP grant application and providing OITP grand funds were the two highest service areas to be provided to manufacturing companies. These services should be continued and strengthened to meet the needs of the manufacturing companies.

7. The four service areas that were provided least were: (1) providing assistance to company personnel in locating consultant services (80.7%), (2) providing the resource of instruction at a vocational school, technical institution, and/or university (79.8%), (3) providing assistance to company personnel in utilizing federal, state and/or community agency resources (74.3%), and (4) providing the resource for obtaining instructor(s) for in-plant training through the staff(s) of a vocational school, technical institution, and/or university (61.0%). Further study should be made to determine whether these services should continue to be offered or upgraded to better meet the needs of industry.

8. In each service area concerning "Was the service useful to your company", the mean scores for the first general statement for all the service areas ranged from 4.86 to 5.69. The lowest mean score (4.86) and the
highest standard deviation (1.39) was reported for the service area of "receiving instruction at a vocational school, technical institution, and/or university". This service area had the highest level of disagreement as to the usefulness of the service. This could indicate that there was a wide range in the usefulness of services from education center to education center and/or from training class to training class. OITP representatives and education center staffs should review and monitor services provided in this area to insure usefulness of training. Although the responses to all 10 service area statements were overall very high, the lowest responses to statements in a specific service area should be reviewed to determine better ways to provide that service.

9. "Was the OITP representative knowledgeable in the service areas provided," resulted in a grand mean score of 5.14 with a range of mean scores from 4.86 to 5.39. The low mean score, 4.86, was reported in the service area "providing assistance to company personnel in locating training consultant services". Although the responses to the service area statements were overall very high, the lowest responses to statements in a specific service area should be reviewed to determine better ways to provide that service.
10. "OITP representative spending enough time or being readily available", resulted in a grand mean score of 5.07. The low mean score, 4.91, was reported for the service area of providing assistance to company personnel in locating training consultant service. Although the responses to the service area statements were overall very high, the lowest responses to statements in a specific service area should be reviewed to determine better ways to provide that service.

11. "Providing adequate services and/or resources to meet company needs," received a grand mean score of 5.00. The low mean score, 4.81, was reported in the service area of providing the resource of the vocational school, technical institution, and/or university in assisting in the development of training curriculum. Although the responses to the service area statements were overall very high, the lowest responses to statements in a specific services area should be reviewed to determine better ways to provide that service.

12. "Were information and procedures adequately communicated", received a grand mean score of 5.19. The low mean score, 5.00, was reported in the service area of providing the resource of instruction at the vocational school, technical institution, and/or university.
Although the responses to the service area statements were overall very high, the lowest responses to statements in a specific services area should be reviewed to determine better ways to provide that service.

13. "Adequate support from OITP representatives for the process of providing services and/or resources" received a grand mean score of 5.05. The low mean score, 5.00, was reported in the service area of providing the resource of instruction at the vocational school, technical institution, and/or university. Although the responses to the service area statements were overall very high, the lowest responses to statements in a specific service area should be reviewed to determine better ways to provide that service.

14. "Was the paper work required for receiving services and/or resources reasonable" received an grand mean score of 4.71. Although the responses to the service area statements were overall very high, the lowest responses to statements in a specific service area should be reviewed to determine better ways to provide that service.

15. "Were the funds provided by OITP a major factor in providing training for your company" received a grand mean score of 4.13. Although the responses to the service
area statements were overall very high, the lowest responses to statements in a specific service area should be reviewed to determine better ways to provide that service.

16. "Were the grant funds paid to your company in a reasonable time" received a grand mean score of 4.78. Although the responses to the service area statements were overall very high, the lowest responses to statements in a specific service area should be reviewed to determine better ways to provide that service.

17. This researcher concluded that based on the data reported, the training coordinators did agree that for the specific service area statements, the services were useful to their companies. Three of the lowest mean scores for specific statement areas were reported for the services areas of: (1) Providing the resource of instruction at a vocational school, technical institution, and/or university--Service Area E, (2) providing the resource of obtaining instructor(s) for in-plant training through the vocational school, technical institution, and/or university--Service Area D, and (3) provide OITP grant funds--Service Area J. The low mean scores were reported for the specific statement types of: "funding obtained through OITP was a major factor in providing training".
Representatives of the Department of Development should review the funding policies to determine if funds should continue to be provided for these service areas or for training services in general.

18. Of the 18 specific statements that received a mean score of 5.00 or lower, 10 statements were in the service areas of (1) provide the resource of obtaining instructor(s) for in-plant training through the staff(s) of a vocational school, technical institution, and/or university, (2) provide the resource of instruction at a vocational school, technical institution, and/or university, and/or (3) provide the resource of the vocational school, technical institution, and/or university assisting in the development of training curriculum. Based on the reported data the training coordinators were reported to have the lowest level of agreement in these service areas. Representatives of the State Department of Education, Division of Vocational Education, and the Department of Development should review these service areas to improve these services and/or resources provided to the manufacturing industries.

19. This researcher recommends that the procedures, strategies, and instruments should be reviewed by the White House Committee on Technical Transfer, to explore
the possibility of implementing studies at a national level to obtain data which would assist the national government to better provide services to the manufacturing industries in the United States and to develop manpower policy related to the provision of training services.
APPENDIX A

Letter of Introduction to the Participants of the first Round of the 3 Round Delphi
James R. Venner  
Clampco Products Inc.  
143 Rainbow St.  
Wadsworth, Oh 44281

Dear Mr. Venner:

Providing comprehensive and currently relevant training services and resources is always a major goal of the Ohio Industrial Training Program (OITP). To achieve this goal we must be aware of future trends and needs of the manufacturing industry. You and your company have been selected from those companies who received a project grant from July 1, 1983 to December 31, 1985. We feel your position with your company and the fact that you have worked with our Medina-Summit-Portage Consortium representative on a training project, makes you an ideal person to assist us in our goal of providing comprehensive and currently relevant training services and resources to manufacturing companies in Ohio. We need and would greatly appreciate your help in this process.

We would like you to complete the enclosed survey which asks you to help us determine what training services and resources, which are not currently available through the Ohio Industrial Training Program (OITP) Consortium, will be needed in the future. Also a purpose of this study is for the responders of the companies surveyed to reach an agreement on which future training needs are most likely to require training services and resources through OITP. We will be using a Delphi technique, which requires you to respond to three rounds of this survey. The first round responses should be returned to us in the enclosed stamped, self-addressed envelope by February 14th.

Thank you in advance for your cooperation in this study, and enclosed is a stick of gum as a small token of our appreciation.

Sincerely,

John R. Venters, Manager  
Office of Industrial training

Sincerely,

Thomas R. Snyder, Researcher

ppp
Enclosures
APPENDIX B

First Round Delphi Instrument
TRAINING SERVICES NEEDED IN THE FUTURE
BY THE MANUFACTURING INDUSTRY IN OHIO
FROM THE OHIO INDUSTRIAL TRAINING PROGRAM

A State of Ohio Delphi Study

Northwest Career Center
2960 Cranston Drive
Dublin, Ohio 43017
Think about your training needs and the services provided by the Ohio Industrial Training program (OITP) and answer the following question as instructed below.

What training services, which are not currently available through the Ohio Industrial Training Program, will be needed in the future. Future training services are defined as services which may be needed in the next three years.

INSTRUCTIONS

1. Write your answers to the question on the next page.
2. Please list no fewer than two nor more than five services needed in the future.
3. For each service needed in the future, provide a brief example from your own experience that demonstrates the nature of the services needed.
4. The combination of the list of services needed in the future and examples will ensure that we do not misinterpret your responses.

THANKS FOR YOUR HELP!!!!!
<table>
<thead>
<tr>
<th>SERVICES NEEDED IN THE FUTURE</th>
<th>EXAMPLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Example:</td>
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<tr>
<td>2.</td>
<td>Example:</td>
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<tr>
<td>3.</td>
<td>Example:</td>
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<td>4.</td>
<td>Example:</td>
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<td>5.</td>
<td>Example:</td>
</tr>
</tbody>
</table>

Note: Please use back of this page for additional comments.
APPENDIX C

Follow-up Postcard to the Delphi
and Survey Participants
Thank you again for helping us to better provide the manufacturing industry in Ohio with useful training services and resources. Your assistance is very important in this process. If you have not sent back your response to our survey, please do so as soon as possible. We are looking forward to your response. If you have any questions about the survey or need another survey sent to you, please call or write to:

Tom Snyder
Northwest Career Center
2690 Cranston drive
Dublin, Ohio 43017
(614) 889-0710
APPENDIX D

Delphi Participants
K. HIRANO
BELLETECH CORP.
700 WEST LAKE AVENUE
BELLEFONTAINE, OHIO 43211

NICK CASE
BUD INDUSTRIES, INC.
4606 EAST 330TH STREET
MILLEDGEVILLE, OHIO 44094

MIKE MORRIS
DEERSFIELD MANUFACTURING CO.
400 4TH AVENUE
MASON, OHIO 45040

IVAN VINKOVICH
EMPIRE DETROIT STEEL CORP.
913 BOWMAN STREET
MANSFIELD, OH 44901

FRED MORITZ
FISHER BODY/GMC/MANSFIELD TOOL ROOM
2532 W. FOURTH ST. RD.
MANSFIELD, OH 44908

BRYAN JORDAN
FRITO-LAY INC./MOOSTER
903 MANSFIELD ROAD
MOOSTER, OH 44691

MARVA O'NEILL
FUJITEC AMERICA, INC.
401 FUJITEC DR.
LEBANON, OH 45036

RICK SCOVILLE
GENEVA RUBBER CO.
8449 BISHOP RD./PO BOX 270
GENEVA, OH 44041

FRANK R. HOUFILE
KENWORTH TRUCK CO.
63 KENWORTH DR. PO BOX 2345
CHILlicothe, OH 45601

DAVID GILL
MANCHESTER MANUFACTURING, INC.
315 E. 7TH ST. /PO BOX 68
MANSFIELD OH 44903

PHILIP JONES
MARLEY PUMP CO./HYDROMATIC PUMPS
1840 BANEY RD./PO BOX 317
ASHLAND OH 44805
JOHN MARKHAM  
NIPPERT CO.  
301 PITTSBURGH DR.  
DELARE OH 43015

VINCE SMOTHERS  
O. M. SCOTT & SONS, INC.  
14111 SCOTTSLAWN RD  
MARYSVILLE, OH 43040

JOHN FLATT  
PARKER-HANNIFAN/PIPE FITTING DIVISION  
715 N BECH ST  
KTON OH 45320

DAVID HAZARD  
ROCKWELL INTERNATIONAL CORP./COLUMBUS  
4300 EAST FIFTH AVE  
COLUMBUS, OH 43219

JOHN MC CORMICK, JR.  
STRATOFLEX, INC./MARION ROSE  
2074 MARION-ORENE CAMP ROAD  
MARION, OH 43302
APPENDIX E

OITP Advisory Committee
OITP ADVISORY COMMITTEE

Mr. Timothy Calderone, Director
District 3—East Ohio
Trumbull County Joint Vocational School
528 Educational Highway
Warren, Ohio 44483
(216) 847-0803

Mr. Curtis Tyler, Director
District 4—Erie Consortium
111 North West Street
P. O. Box 132
Bellevue, Ohio 44811
(419) 483-6421

Ms. Cindy Krawson, Director
TRACES Training Representative
District 16—TRACES
Guernsey Noble Career Center
57090 Vocational Road, Rt. 1
Sevastopol, Ohio 43780
(614) 665-2516
APPENDIX F

Letter of Introduction to the Participants of the Second Round of the 3 Round Delphi
March 31, 1980

John N. McCormick  
Employee Relations Mgr.  
Strategies, Inc.  
P.O. Box 122  
Green Camp, Ohio 43322

Dear Mr. McCormick:

Thank you for your response to round one of the Delphi survey. Your responses have been combined with those of twenty other companies who have been selected for this survey. These responses were edited and grouped into eighteen service areas which need to be supplied by the Ohio Industrial Training Program to manufacturers in the State of Ohio.

The purpose of this study is to reach an agreement on which training needs are already supplied by OITP will be needed in the future. Your response to the second round will be held in strict confidence. Please complete the enclosed survey and return it to us in the enclosed stamped, self-addressed envelope by April 11th. Thank you again for your cooperation in this study.

Sincerely,

John R. Ven ters, Manager  
Office of Industrial Training

 מאות

Enclosures

P.O. Box 1001, Columbus, Ohio 43201  614-469-2420
APPENDIX G

Second Round Delphi Instrument
TRAINING SERVICES NEEDED IN THE FUTURE
BY THE MANUFACTURING INDUSTRY IN OHIO
FROM THE OHIO INDUSTRIAL TRAINING PROGRAM

A State of Ohio Delphi Study - Round Two

Northwest Career Center
7960 Cranston Drive
Dublin, Ohio 43017
In round one of this survey you were asked to think about your training needs and the services provided by the Ohio Industrial Training Program (OITP) and list no fewer than two nor more than five training services. The list of services were to be services which are not currently available through OITP and ones that will be needed in the future.

Twenty companies have been surveyed and from that survey eighteen service areas have been identified for further study. In round two you will be asked to agree or disagree with the eighteen identified service areas as being needed in the future and to indicate your degree of certainty of your position. You may also support your position on each service area with comments.

As you consider each of the service areas, please do the following:

A. Check whether you agree or disagree that the future services listed need to be provided by OITP.

B. Using the following descriptions, circle the number which best describes the certainty of your answer.

<table>
<thead>
<tr>
<th>least certain</th>
<th>somewhat certain</th>
<th>certain</th>
<th>very certain</th>
<th>most certain</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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</tbody>
</table>

C. OPTIONAL - Use the space provided to support your position.

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**EXAMPLE**

**ISSUE:** Which species of animals makes good pets?

(check "agree" or "disagree" and circle your level of certainty.)

**Species 1. Dogs**

<table>
<thead>
<tr>
<th>AGREE</th>
<th>(level of certainty)</th>
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<tr>
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<td>1 2 3 4 5</td>
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<table>
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<tr>
<th>DISAGREE</th>
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**COMMENTS:**

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PLEASE TURN TO THE NEXT PAGE AND BEGIN
ISSUE: WHAT TRAINING SERVICES, WHICH ARE NOT CURRENTLY AVAILABLE THROUGH GITP, WILL BE NEEDED IN THE FUTURE? FUTURE TRAINING SERVICES ARE DEFINED AS SERVICES WHICH MAY BE NEEDED IN THE NEXT THREE YEARS. RECORD YOUR ANSWER FOR EACH SERVICE AREA BASED ON THIS ISSUE.

SERVICE 1. INDUSTRIAL TRAINING CENTER - A factory oriented center including such facilities as: cafeteria, lodging, specialized training equipment, support staff, etc.

<table>
<thead>
<tr>
<th>AGREE</th>
<th>(level of certainty)</th>
<th>DISAGREE</th>
<th>LEAST</th>
<th>MOST</th>
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<td>2 3 4 5</td>
<td></td>
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</table>

COMMENTS:

SERVICE 2. TEAM BUILDING TRAINING - Team building training such as: quality circles, group goal setting and problem solving, group process, participatory management, etc.

<table>
<thead>
<tr>
<th>AGREE</th>
<th>(level of certainty)</th>
<th>DISAGREE</th>
<th>LEAST</th>
<th>MOST</th>
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<tr>
<td>1</td>
<td>2 3 4 5</td>
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</table>

COMMENTS:

TURN TO THE NEXT PAGE AND CONTINUE
SERVICE 3. ECONOMICS TRAINING - Economics training which is related to the manufacturing economy, world competition in productivity, world-wide banking, etc.

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<table>
<thead>
<tr>
<th>AGREE</th>
<th>LEVEL OF CERTAINTY</th>
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<tr>
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<td>1 2 3 4 5</td>
</tr>
<tr>
<td>DISAGREE</td>
<td>LEAST MOST</td>
</tr>
</tbody>
</table>

COMMENTS:

SERVICE 4. PERSONNEL RESOURCE LIST - Personnel resource list to include instructors and consultants in such areas as: technical writing, development of instructional support materials, technical, occupational, and general employment related subjects, etc.

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<thead>
<tr>
<th>AGREE</th>
<th>LEVEL OF CERTAINTY</th>
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<td>1 2 3 4 5</td>
</tr>
<tr>
<td>DISAGREE</td>
<td>LEAST MOST</td>
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</table>

COMMENTS:

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SERVICE 5. MANAGEMENT DEVELOPMENT PROGRAMS - Management development programs to include such areas as: decision making, planning and conducting training, motivation techniques, computer aided production control, human relations, etc.

<table>
<thead>
<tr>
<th>Agree (level of certainty)</th>
<th>1 2 3 4 5</th>
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</thead>
<tbody>
<tr>
<td>Disagree</td>
<td>Least</td>
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<td></td>
<td>Most</td>
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</table>

COMMENTS:

SERVICE 6. TRAINING AIDS - Training aids to include such items as: video training programs, pre-developed overhead transparencies, computer programs, manuals, handouts, workbooks, etc.

<table>
<thead>
<tr>
<th>Agree (level of certainty)</th>
<th>1 2 3 4 5</th>
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<tbody>
<tr>
<td>Disagree</td>
<td>Least</td>
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<td>Most</td>
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</table>

COMMENTS:

TURN TO NEXT PAGE AND CONTINUE
SERVICE 7. FUNDING FOR PROJECT COORDINATION - Funding for such activities as: coordinating needs assessment, applying for grants, locating and employing resource consultants and instructors, obtaining instructional materials, obtaining audio/visual aids, supervising instruction, etc.

<table>
<thead>
<tr>
<th>AGREE</th>
<th>DISAGREE</th>
<th>(level of certainty)</th>
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<td>LEAST</td>
<td>MOST</td>
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COMMENTS:

SERVICE 8. FUNDING FOR RESEARCH AND DEVELOPMENT - Research and development designed at trying new products, designs, production techniques, etc. for improving production.

<table>
<thead>
<tr>
<th>AGREE</th>
<th>DISAGREE</th>
<th>(level of certainty)</th>
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<tbody>
<tr>
<td></td>
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<td>1 2 3 4 5</td>
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<td>LEAST</td>
<td>MOST</td>
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COMMENTS:

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### SERVICE 9. FUNDING FOR NON-CREDIT COLLEGE COURSES - Funding for courses such as: money management, recreational activities, speed reading, etc.

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<thead>
<tr>
<th>Level of Certainty</th>
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<th>3</th>
<th>4</th>
<th>5</th>
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<tbody>
<tr>
<td><strong>Agree</strong></td>
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</tr>
<tr>
<td><strong>Disagree</strong></td>
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**Comments:**

### SERVICE 10. INCREASED FUNDING - Increased funding to reimburse costs of instruction such as: increased rate per hour, reimbursement for planning and preparation time, etc.

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<tr>
<th>Level of Certainty</th>
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<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Agree</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Disagree</strong></td>
<td></td>
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</table>

**Comments:**

**Turn to next page and continue**
SERVICE 11. OCCUPATIONAL TRAINING PROGRAMS - Occupational type training programs to include such areas as: robotics, nc/cnc, cdm/cam, electronics, electrical maintenance and repair, tool and die making, cooling and refrigeration, blueprint reading, word processing, occupational mathematics, computers, and other new industrial and commercial technologies, etc.

<table>
<thead>
<tr>
<th>AGREE</th>
<th>(level of certainty)</th>
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<tr>
<th>DISAGREE</th>
<th>LEAST</th>
<th>MOST</th>
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COMMENTS:

SERVICE 12. SAFETY RELATED TRAINING - Safety related training such as: right-to-know programs, first aid, safety practices and procedures, etc.

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<th>AGREE</th>
<th>(level of certainty)</th>
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<tr>
<th>DISAGREE</th>
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<th>MOST</th>
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COMMENTS:

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SERVICE 13. NON-OCCUPATIONAL TRAINING PROGRAMS - Non-occupational specific training programs such as: quality control, SPS, advanced statistics, employee assistance, quality of work life, etc.

___ AGREE  [level of certainty]  1  2  3  4  5
___ DISAGREE LEAST MOST

COMMENTS:

SERVICE 14. INFORMATION ON FEDERAL/STATE FUNDING - Information on funding for training obtainable from federal, state, and/or local sources.

___ AGREE  [level of certainty]  1  2  3  4  5
___ DISAGREE LEAST MOST

COMMENTS:

TURN TO NEXT PAGE AND CONTINUE
SERVICE 16. INFORMATION ON OHIO INDUSTRIAL TRAINING PROGRAM SERVICES
- Information on services provided by OITF such as:
  resources and services, amount of funding, funding
categories, etc.

____ AGREE  (level of certainty)  1  2  3  4  5
____ DISAGREE LEAST MOST

COMMENTS:

SERVICE 16. DECREASED TIME FOR PROJECT APPROVAL - Decrease the time
of approval of project funding which would cut down the
time from identification of needs and development of a
plan to the training program implementation.

____ AGREE  (level of certainty)  1  2  3  4  5
____ DISAGREE LEAST MOST

COMMENTS:

TURN TO NEXT PAGE AND CONTINUE
SERVICE 17. FISCAL YEAR MATCH - The fiscal year of the funding agency should match the fiscal year used by industry.

___ AGREE (level of certainty) 1 2 3 4 5

___ DISAGREE LEAST MOST

COMMENTS:

SERVICE 18. NEEDS ASSESSMENT TESTING/TESTS - Needs assessment tests and testing to better and more accurately determine training needs.

___ AGREE (level of certainty) 1 2 3 4 5

___ DISAGREE LEAST MOST

COMMENTS:

NOTE - PLEASE USE THE NEXT PAGE FOR ANY ADDITIONAL COMMENTS

RETURN SURVEY IN SELF-ADDRESSED, STAMPED ENVELOPE BY APRIL 11TH
APPENDIX H

Letter of Introduction to the Participants
of the Third Round of the 3 Round Delphi
April 24, 1986

Mr. Ray Brown
Wire Assembly, Inc./Ducyrs
1893 East Mansfield St.
Ducyrs, OH 44830

Dear Mr. Brown:

Thank you for your response to round two of the Delphi survey. This final instrument gives you an opportunity to reconsider your positions after reviewing the responses and comments of selected representatives of other manufacturing companies participating in this study. You should find this instrument a bit shorter because during round two of the Delphi survey the industry representatives reached consensus on three service areas.

Your response to the final round will be held in strict confidence. Please complete the enclosed survey and return it to us in the enclosed stamped, self-addressed envelope by May 10, 1986. Thank you again for your cooperation in this study.

Sincerely,

John R. Venters, Manager
Office of Industrial Training

Enclosures
APPENDIX I

Third Round Delphi Instrument
TRAINING SERVICES NEEDED IN THE FUTURE BY THE MANUFACTURING INDUSTRY IN OHIO FROM THE OHIO INDUSTRIAL TRAINING PROGRAM

A State of Ohio Delphi Study - Final Round

Northwest Career Center
3800 Cramton Drive
Dublin, Ohio 43017
In round two of this survey you were asked to agree or disagree with eighteen service areas which are not currently available through OITP (Ohio Industrial Training Program) and that will be needed in the future. Next, you were to indicate your level of certainty of your answer. You were also given the option of adding comments to your responses. This final instrument gives you an opportunity to reconsider your positions after reviewing the responses and comments of representatives of other manufacturing companies participating in the study.

Because company representatives have reached consensus on some service areas, the following service areas do not require reevaluation in the instrument:

- Personnel Resource List
- Information on Ohio Industrial Training Program Services
- Decreased Time for Project Approval

Each service area for reevaluation contains several sections. Those sections are as follows:

- **Responses from Round Two of the Need for the Service** - This shows the percent of agreement and disagreement for each service area.

- **Comments from Round Two** - Here we have included your comments. Your comments have been quoted directly in most cases. Where we have needed to paraphrase we hope we have not altered your original meaning.

- **Notes from the Researcher** - Only some service areas contain notes from the researcher. These notes attempt to clarify confusing terms or cast the service area in a new light, etc. to help further refine the description of the service.

- **Your Position from Round Two** - Your position from round two is indicated by an “X”.

- **Your Present Position** - This section requires that you restate or revise your position by checking “agree” or “disagree” and circle the degree of certainty. You may also choose to support your position with comments.
ISSUE: WHY TRAINING SERVICES, WHICH ARE NOT CURRENTLY AVAILABLE THROUGH OITP, WILL BE NEEDED IN THE FUTURE? FUTURE TRAINING SERVICES ARE DEFINED AS SERVICES WHICH MAY BE NEEDED IN THE NEXT THREE YEARS.

SERVICE 1. INDUSTRIAL TRAINING CENTER - A factory oriented center including such facilities as: cafeteria, lodging, specialized training equipment, support staff, etc.

RESPONSES FROM ROUND TWO FOR THE NEED FOR THIS SERVICE

AGREE ========= 71.8%

DISAGREE ===== 28.8%

COMMENTS FROM ROUND TWO

- Need training center to develop skills in areas where there continues to be shortages of qualified applicants. Examples: tool making, maintenance, machine set-up, etc.
- People need to be trained in their own plant within their own working environment and surrounded by their own co-workers and supervisors.
- Industrial training centers should have an industrial atmosphere to acculturate prospective employees to the world of work.
- I think this should be approached the way D.I.E. Center was in Mansfield and tie it into an existing technical college.
- Why do we have vocational schools? To deliver this training. There is no need to duplicate state services.
- In our industry, it is more common to have on the job training. The company already has equipment and staff.
- Must be able to respond to needs quickly and have industrial background orientation of entire staff (non-academic)

NOTES FROM THE RESEARCHER

Comments represent support for both "Agree" and "Disagree" responses.

YOUR POSITION FROM ROUND TWO

____ AGREE

____ DISAGREE

YOUR PRESENT POSITION (Restate or Revise)

(check "agree" or "disagree" and circle your level of certainty.)

____ AGREE (level of certainty)

1 2 3 4 5

____ DISAGREE LEAST MOST

COMMENTS (optional):
ISSUE: WHAT TRAINING SERVICES, WHICH ARE NOT CURRENTLY AVAILABLE THROUGH OITP, WILL BE NEEDED IN THE FUTURE? FUTURE TRAINING SERVICES ARE DEFINED AS SERVICES WHICH MAY BE NEEDED IN THE NEXT THREE YEARS.

SERVICE 2. TEAM BUILDING TRAINING - Team building training such as: quality circles, group goal setting and problem solving, group process, participatory management, etc.

RESPONSES FROM ROUND TWO FOR THE NEED FOR THIS SERVICE.

<table>
<thead>
<tr>
<th>AGREE</th>
<th>DISAGREE</th>
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<tbody>
<tr>
<td>78.6%</td>
<td>21.4%</td>
</tr>
</tbody>
</table>

COMMENTS FROM ROUND TWO:

- Important part of training program. The only concern I have is that team building means different things to different people; participatory management is not accepted in all companies.
- You need trained leaders to work with the group that will have to function as a team. This can be done on or off site. Facilitator training is separate as someone is left to continue working with the group.
- Training should be production oriented. "Team Building" is an excellent vehicle, but not something which should be offered by OITP.
- This concept will only work from the top down. It has not its greatest success in smaller businesses or plants working from scratch. Old management does not buy into these concepts very readily.
- There are numerous consultants who can do this. Current funding will cover if it has an economic rationale. Support the use of private sector supplies of these services. Do not increase the size of government.
- Most employees are interested in pay check only and to spend much time would just be an additional cost.
- Team building is of little value unless it is a process of addressing specific problems in a given industry.

NOTES FROM THE RESEARCHER:

Comments represent support for both "Agree" and "Disagree" responses.

YOUR POSITION FROM ROUND TWO

<table>
<thead>
<tr>
<th>AGREE</th>
<th>DISAGREE</th>
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YOUR PRESENT POSITION (Restate or Revise)

(check "agree" or "disagree" and circle your level of certainty.)

<table>
<thead>
<tr>
<th>AGREE</th>
<th>DISAGREE</th>
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COMMENTS (Optional):
ISSUE: WHAT TRAINING SERVICES, WHICH ARE NOT CURRENTLY AVAILABLE THROUGH OITP, WILL BE NEEDED IN THE FUTURE? FUTURE TRAINING SERVICES ARE DEFINED AS SERVICES WHICH MAY BE NEEDED IN THE NEXT THREE YEARS.

SERVICE 3: ECONOMICS TRAINING - Economics training which is related to the manufacturing economy, world competition in productivity, world-wide banking, etc.

RESPONSES FROM ROUND TWO FOR THE NEED FOR THIS SERVICE

AGREE: ****************** 78.6%
DISAGREE: ***** 21.4%

COMMENTS FROM ROUND TWO

- A real training need for 99% of the employees anywhere. Here again, how the training material is presented concerns me; needs to be practical.
- Most floor people don't understand world competition.
- This could be beneficial, if the information is properly utilised.
- Not OITP responsibility to provide training. Could fund an annual conference.
- I feel most small business managers need training and assistance, but more personal, one to one in their area.

NOTES FROM THE RESEARCHER

Comments represent support for both "Agree" and "Disagree" responses.

YOUR POSITION FROM ROUND TWO

___ AGREE
___ DISAGREE

YOUR PRESENT POSITION (Restate or Revise)

(check "agree" or "disagree" and circle your level of certainty.)

<table>
<thead>
<tr>
<th>Level of Certainty</th>
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<th>2</th>
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<tr>
<td>AGREE</td>
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<tr>
<td>DISAGREE</td>
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</table>

COMMENTS (Optional):
ISSUE: WHAT TRAINING SERVICES, WHICH ARE NOT CURRENTLY AVAILABLE THROUGH GITP, WILL BE NEEDED IN THE FUTURE? FUTURE TRAINING SERVICES ARE DEFINED AS SERVICES WHICH MAY BE NEEDED IN THE NEXT THREE YEARS.

SERVICE 4. PERSONNEL RESOURCE LIST - Personnel resource list to include instructors and consultants in such areas as: technical writing, development of instructional support materials, technical, occupational, and general employment related subjects, etc.

RESPONSES FROM ROUND TWO FOR THE NEED FOR THIS SERVICE

AGREE ........................ 100%

DISAGREE 0%

COMMENTS FROM ROUND TWO

(HOME)

NOTES FROM THE RESEARCHER

You and all other representatives responded "Agree"
ISSUE: WHAT TRAINING SERVICES, WHICH ARE NOT CURRENTLY AVAILABLE THROUGH GIP, WILL BE NEEDED IN THE FUTURE? FUTURE TRAINING SERVICES ARE DEFINED AS SERVICES WHICH MAY BE NEEDED IN THE NEXT THREE YEARS.

SERVICE B. MANAGEMENT DEVELOPMENT PROGRAMS - Management development programs to include such areas as: decision making, planning and conducting training, motivation techniques, computer aided production control, human relations, etc.

RESPONSES FROM ROUND TWO FOR THE NEED FOR THIS SERVICE

AGREE **************** 71.8%
DISAGREE ******** 28.2%

COMMENTS FROM ROUND TWO

- Too many programs present management theory. Once a person has been exposed to the theory he/she needs more practical how-to, one-on-one training -- they end up learning by trial and error.
- For management development courses to be effective they have to be in-house with local management committed to follow through.
- Management development programs are very beneficial. They teach staff to be effective and productive which permits a company to grow. This always results in more jobs.
- Most large companies have programs of this nature in place.
- Not GIP responsibility to provide training. It would expand the cost of administering the program. Can use existing fund to pay for this.
- Talking only of myself, many times I run into problems and must make some decisions without anyone to ask advice or assistance.

NOTES FROM THE RESEARCHER

Comments represent support for both "Agree" and "Disagree" responses.

YOUR POSITION FROM ROUND TWO

____ AGREE

____ DISAGREE

YOUR PRESENT POSITION (Restate or Revise)

(check "agree" or "disagree" and circle your level of certainty.)

____ AGREE (level of certainty) 1 2 3 4 5

____ DISAGREE LEAST 5 MOST

COMMENTS (Optional):
ISSUE: WHAT TRAINING SERVICES, WHICH ARE NOT CURRENTLY AVAILABLE THROUGH CIVTP, WILL BE NEEDED IN THE FUTURE? FUTURE TRAINING SERVICES ARE DEFINED AS SERVICES WHICH MAY BE NEEDED IN THE NEXT THREE YEARS.

SERVICE 6. TRAINING AIDS - Training aids to include such items as: video training programs, pre-developed overhead transparencies, computer programs, manuals, handouts, workbooks, etc.

RESPONSES FROM ROUND TWO FOR THE NEED FOR THIS SERVICE.

AGREE ============== 71.6%
DISAGREE ========= 28.4%

COMMENTS FROM ROUND TWO.

- Good for standard programs.
- You need a local resource to help people make up audio visual aids for a specific purpose -- train the trainer one-to-one.
- Training aids are nice items to have, but will not necessarily increase employment.
- Most of the items coming out of a school system are too generic for technical training.
- Resource bank or list of what companies have and let us contact each other or borrow. Make us a network.
- Having the proper tools to work with can sometimes make the difference between success or failure.
- This would be beneficial (especially videotape resources) if it was oriented to specific business/industry needs.

NOTES FROM THE RESEARCHER

Comments represent support for both "Agree" and "Disagree" responses.

YOUR POSITION FROM ROUND TWO

____ AGREE
____ DISAGREE

YOUR PRESENT POSITION (Re-state or Revise)

(check "agree" or "disagree" and circle your level of certainty.)

____ AGREE   (level of certainty)  1 2 3 4 5
____ DISAGREE LEAST       MOST

COMMENTS (Optional):
ISSUE: WHAT TRAINING SERVICES, WHICH ARE NOT CURRENTLY AVAILABLE THROUGH OITP, WILL BE NEEDED IN THE FUTURE? FUTURE TRAINING SERVICES ARE DEFINED AS SERVICES WHICH MAY BE NEEDED IN THE NEXT THREE YEARS.

SERVICE 7. FUNDING FOR PROJECT COORDINATION - Funding for such activities as: coordinating needs assessment, applying for grants, locating and employing resource consultants and instructors, obtaining instructional materials, obtaining audio/visual aids, supervising instruction, etc.

RESPONSES FROM ROUND TWO FOR THE NEED FOR THIS SERVICE

AGREE =============== 85.7%

DISAGREE = 14.3%

COMMENTS FROM ROUND TWO

- Crucial to getting industry support.
- Industry has a hard time defining its training needs. It needs one-on-one help with alternatives. Unfortunately the counselor can favor pet resources which do not fit the real need of the company.
- Funding for project coordination would be a good thing to have, but I don't feel that OITP should do it.
- As I stated previously, we all need assistance and most small businesses just cannot afford it on their own.

NOTES FROM THE RESEARCHER

Comments represent support for both "Agree" and "Disagree" responses.

YOUR POSITION FROM ROUND TWO

____ AGREE

____ DISAGREE

YOUR PRESENT POSITION (Restate or Revise)

(check "agree" or "disagree" and circle your level of certainty.)

____ AGREE (level of certainty)

least          1

____ DISAGREE

least          5

COMMENTS (Optional):
ISSUE: WHAT TRAINING SERVICES, WHICH ARE NOT CURRENTLY AVAILABLE THROUGH OITP, WILL BE NEEDED IN THE FUTURE? FUTURE TRAINING SERVICES ARE DEFINED AS SERVICES WHICH MAY BE NEEDED IN THE NEXT THREE YEARS.

SERVICE D. FUNDING FOR RESEARCH AND DEVELOPMENT - Research and development designed at trying new products, designs, production techniques, etc. for improving production.

RESPONSES FROM ROUND TWO FOR THE NEED FOR THIS SERVICE

AGREE ----------------- 71.3%
DISAGREE ------ 28.7%

COMMENTS FROM ROUND TWO

- Necessary, but not as important as previously mentioned programs.
- Industry is afraid of letting a college help with R&D because of trade secrets.
- This type of activity could very easily lead to increased productivity and more jobs.
- This is industry's own responsibility.
- This is education. We do not need welfare for private industry. This is the cost of doing business.
- In our business, it is a constant change and having development funds, is one of the most important factors.
- This should be handled by individual industries primarily.

NOTES FROM THE RESEARCHER

Comments represent support for both "Agree" and "Disagree" responses.

YOUR POSITION FROM ROUND TWO

____ AGREE
____ DISAGREE

YOUR PRESENT POSITION (Restate or Revise)

(check "agree" or "disagree" and circle your level of certainty.)

____ AGREE (level of certainty)
1 2 3 4 5

____ DISAGREE LEAST MOST

COMMENTS (Option):
ISSUE: What training services, which are not currently available through GITF, will be needed in the future? Future training services are defined as services which may be needed in the next three years.

SERVICE G. Funding for non-credit college courses - Funding for courses such as: money management, recreational activities, speed reading, etc.

RESPONSES FROM ROUND TWO FOR THE NEED FOR THIS SERVICE

AGREE ========= 26.8%
DISAGREE =========== 71.2%

COMMENTS FROM ROUND TWO

- Necessary, but not as important as previously mentioned programs.
- Self-enrichment is the individual's responsibility. However, low cost improvement programs could get more people to do something.
- These are all good courses, but I don't feel that they should be covered by GITF.
- These are not important to the survival or success of industry. Do not abuse taxpayer's money. These are currently available through local high schools for minimal cost.
- I do not see need for this for our industry.
- These are already available in most communities.

NOTES FROM THE RESEARCHER

Comments represent support for both "Agree" and "Disagree" responses.

YOUR POSITION FROM ROUND TWO

___ AGREE
___ DISAGREE

YOUR PRESENT POSITION (Restate or Revise)

(check "agree" or "disagree" and circle your level of certainty.)

___ AGREE (level of certainty) 1 2 3 4 5
___ DISAGREE LEAST MOST

COMMENTS (Optional):
ISSUE: What training services, which are not currently available through GITP, will be needed in the future? Future training services are defined as services which may be needed in the next three years.

SERVICE 10. INCREASED FUNDING - Increased funding to reimburse costs of instruction such as: increased rate per hour, reimbursement for planning and preparation time, etc.

RESPONSES FROM ROUND TWO FOR THE NEED FOR THIS SERVICE

AGREE  **********  66.2%
DISAGREE ******* 33.8%

COMMENTS FROM ROUND TWO

- Not sure, obviously with increased funding you would get greater industrial support. However, current levels seem to be adequate. Overfunding seems to be wasteful to me.
- There are ten hours of preparation for each original instructional hour. Current funding does not consider this.
- Funding should be to assist training and the initial costs should only be covered.
- As stated before, professional help many times, is out of reach to small business because of cost.
- Present levels are adequate.

NOTES FROM THE RESEARCHER

Comments represent support for both "Agree" and "Disagree" responses.

YOUR POSITION FROM ROUND TWO

___ AGREE

___ DISAGREE

YOUR PRESENT POSITION (Restate or Revise)

(check "agree" or "disagree" and circle your level of certainty.)

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COMMENTS (Option):
SERVICE II. OCCUPATIONAL TRAINING PROGRAMS - Occupational type training programs to include such areas as robotics, automation, electronics, electrical maintenance and repair, tool and die making, welding and refrigeration, blueprint reading, word processing, occupational mathematics, computers, and other new industrial and commercial technologies, etc.

RESPONSE FROM ROUND TWO FOR THE NEED FOR THIS SERVICE

AGREE

DISAGREE = 1.28

COMMENTS FROM ROUND TWO:

- Most important and helpful to industry.
- This type of training is very much needed to remain competitive.
- I do not see it as a JIT function to deliver training. There are enough programs available at vocational schools to bring instructors in.
- This may help the youth staying out of school find work but will not help businesses like ours.
- Must be able to respond to needs quickly and have industrial background orientation of entire staff (non-technical). The employee must be involved in the design of the program.

NOTES FROM THE RESEARCHER:

Comments represent support for both "Agree" and "Disagree" responses.

YOUR PREVIOUS RESPONSE:

AGREE

DISAGREE

YOUR PRESENT POSITION (Retest or Revise)

(check "agree" or "disagree" and circle your level of certainty)

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COMMENTS (Optional):
ISSUE: WHAT TRAINING SERVICES, WHICH ARE NOT CURRENTLY AVAILABLE THROUGH OITP, WILL BE NEEDED IN THE FUTURE? FUTURE TRAINING SERVICES ARE DEFINED AS SERVICES WHICH MAY BE NEEDED IN THE NEXT THREE YEARS.

SERVICE 13. SAFETY RELATED TRAINING - Safety related training such as: right-to-know programs, first aid, safety practices and procedures, etc.

RESPONSES FROM ROUND TWO FOR THE NEED FOR THIS SERVICE

AGREE ============== 78.5%

DISAGREE ========= 21.5%

COMMENTS FROM ROUND TWO

- Needed, but could/should be handled by industrial commission of Ohio and/or others.
- Everyone wants direction on "right to know" now. The industrial commission can't handle all the requests on writing and implementing employee programs that meet OSHA requirements.
- These are very worthwhile programs, but companies should be doing this already.
- Plenty already available. Some might be tied into the program in #13.

NOTES FROM THE RESEARCHER

Comments represent support for both "Agree" and "Disagree" responses.

YOUR POSITION FROM ROUND TWO

____ AGREE

____ DISAGREE

YOUR PRESENT POSITION (Restate or Revise)

(check "agree" or "disagree" and circle your level of certainty.)

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COMMENTS (Option):
ISSUE: WHAT TRAINING SERVICES, WHICH ARE NOT CURRENTLY AVAILABLE THROUGH OITP, WILL BE NEEDED IN THE FUTURE? FUTURE TRAINING SERVICES ARE DEFINED AS SERVICES WHICH MAY BE NEEDED IN THE NEXT THREE YEARS.

SERVICE 19. NON-OCCUPATIONAL TRAINING PROGRAMS - Non-occupational specific training programs such as quality control, GPS, advanced statistics, employee assistance, quality of work life, etc.

RESPONSES FROM ROUND TWO FOR THE NEED FOR THIS SERVICE

AGREE =========== 78.5%

DISAGREE = 21.5%

COMMENTS FROM ROUND TWO

- Needed, but seems to fit into other areas of training previously mentioned.
- There is a market for reps from area companies coming in to get a course to help them improve their in-house programs.
- OITP should only cover programs that relate to occupational training.
- Our efforts need to depend on the creation of jobs. The rest will take care of itself.
- Plenty already available. Some might be tied into the programs in #11.

NOTES FROM THE RESEARCHER

Comments represent support for both "Agree" and "Disagree" responses.

YOUR POSITION FROM ROUND TWO

____ AGREE

____ DISAGREE

YOUR PRESENT POSITION (Restate or Revise)

(check "agree" or "disagree" and circle your level of certainty.)

____ AGREE (level of certainty)

1 2 3 4 5

____ DISAGREE LEAST MOST

COMMENTS (Optional):
'ISSUE: WHAT TRAINING SERVICES, WHICH ARE NOT CURRENTLY AVAILABLE THROUGH OITP, WILL BE NEEDED IN THE FUTURE? FUTURE TRAINING SERVICES ARE DEFINED AS SERVICES WHICH MAY BE NEEDED IN THE NEXT THREE YEARS.

SERVICE 14. INFORMATION ON FEDERAL/STATE FUNDING - Information after funding for training obtainable from federal, state, and/or local sources.

RESPONSES FROM ROUND TWO FOR THE NEED FOR THIS SERVICE

AGREE  ------------------  92.8%
DISAGREE = 7.2%

COMMENTS FROM ROUND TWO

- Someone needs to help industry understand how to go about qualifying and eliminate the distrust that exists for dealing with the federal/state governement.
- Current programs are not publicized enough. You have to research to find the right person to ask what's available.
- More people should be made aware of these programs.
- This is most important if the information may be obtained without an such red tape that the businessperson becomes discouraged.
- This might help in some situations.

NOTE FROM THE RESEARCHER

(NONE)

YOUR POSITION FROM ROUND TWO

_____ AGREE
_____ DISAGREE

YOUR PRESENT POSITION (Restate or Revise)

(check "agree" or "disagree" and circle your level of certainty.)

______________________________  ______________________________
AGREE  (level of certainty)  1  2  3  4  5
DISAGREE  LEAST  MOST

COMMENTS (Option):
ISSUE: WHAT TRAINING SERVICES, WHICH ARE NOT CURRENTLY AVAILABLE THROUGH OITP, WILL
BE NEEDED IN THE FUTURE? FUTURE TRAINING SERVICES ARE DEFINED AS SERVICES WHICH MAY
BE NEEDED IN THE NEXT THREE YEARS.

SERVICE 19. INFORMATION ON OHIO INDUSTRIAL TRAINING PROGRAM SERVICES -
Information on services provided by OITP such as: resources and services, amount of funding, funding categories, etc.

RESPONSE FROM ROUND TWO FOR THE NEED FOR THIS SERVICE

AGREE ============== 100%
DISAGREE 0%

COMMENTS FROM ROUND TWO

(HOME)

NOTES FROM THE RESEARCHER

(HOME)

YOUR POSITION FROM ROUND TWO

You and all other representatives responded "AGREE"

ISSUE: WHAT TRAINING SERVICES, WHICH ARE NOT CURRENTLY AVAILABLE THROUGH OITP, WILL
BE NEEDED IN THE FUTURE? FUTURE TRAINING SERVICES ARE DEFINED AS SERVICES WHICH MAY
BE NEEDED IN THE NEXT THREE YEARS.

SERVICE 19. DECREASED TIME FOR PROJECT APPROVAL - Decrease the time of
approval of project funding which would cut down the time from
identification of needs and development of a plan to the training
program implementation.

RESPONSE FROM ROUND TWO FOR THE NEED FOR THIS SERVICE

AGREE ============== 100%
DISAGREE 0%

COMMENTS FROM ROUND TWO

(HOME)

NOTES FROM THE RESEARCHER

(HOME)

YOUR POSITION FROM ROUND TWO

You and all other representatives responded "AGREE"
ISSUE: WHAT TRAINING SERVICES WHICH ARE NOT CURRENTLY AVAILABLE THROUGH OITP, WILL BE NEEDED IN THE FUTURE? FUTURE TRAINING SERVICES ARE DEFINED AS SERVICES WHICH MAY BE NEEDED IN THE NEXT THREE YEARS.

SERVICE 17. FISCAL YEAR MISMATCH - The fiscal year of the funding agency should match the fiscal year used by industry.

RESPONSES FROM ROUND TWO FOR THE NEED FOR THIS SERVICE

AGREE ========= 61.5%
DISAGREE ========= 38.5%

COMMENTS FROM ROUND TWO

- Helpful to industry budgeting and planning.
- The funding should be on the user fiscal year or a calendar year.
- Another irritant is that the same topic on one grant is another changes in number of titles based on the clerk who types it.
- It is so much easier to function on the same timetable.

NOTES FROM THE RESEARCHER

(NONE)

YOUR POSITION FROM ROUND TWO

____ AGREE
____ DISAGREE

YOUR PRESENT POSITION (Restate or Revise)

(check "agree" or "disagree" and circle your level of certainty.)

____ AGREE  (level of certainty)
____ DISAGREE  LEAST  MOST

COMMENTS (Option):
ISSUE: WHAT TRAINING SERVICES, WHICH ARE NOT CURRENTLY AVAILABLE THROUGH GITYP, WILL BE NEEDED IN THE FUTURE? FUTURE TRAINING SERVICES ARE DEFINED AS SERVICES WHICH MAY BE NEEDED IN THE NEXT THREE YEARS.

SERVICE 19. NEEDS ASSESSMENT TESTING/TESTS - Needs assessment tests and testing to better and more accurately determine training needs.

RESPONSE FROM ROUND TWO FOR THE NEED FOR THIS SERVICE

AGREE =========== 53.8%

DISAGREE =========== 46.2%

COMMENTS FROM ROUND TWO

- Essential to the development of quality training programs. Take the guess work out of it.
- Industry in general is afraid of any testing because of discrimination charges.
- Astute employers should know what their needs are.
- This goes back to #10. Make a decision and go for it, don't waste valuable time.
- This is already available through the Bureau of Employment.

NOTES FROM THE RESEARCHER

Comments represent support for both "Agree" and "Disagree" responses.

YOUR POSITION FROM ROUND TWO

____ AGREE

____ DISAGREE

YOUR PRESENT POSITION (Restate or Revise)

(check "agree" or "disagree" and circle your level of certainty.)

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<th>____ AGREE</th>
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<td>____ DISAGREE</td>
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<td>LEAST</td>
<td>1</td>
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<td>MOST</td>
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COMMENTS (Optional):
PLEASE PRIORITIZE THE EIGHTEEN SERVICE AREAS FROM #1 TO #18 WITH #1 BEING THE SERVICE AREA WHICH SHOULD BE PROVIDED BY OITP AS A FIRST PRIORITY AND #18 BEING THE SERVICE AREA WHICH SHOULD BE PROVIDED BY OITP AS A LAST PRIORITY.

___ INDUSTRIAL TRAINING CENTER
___ TEAM BUILDING TRAINING
___ ECONOMIC TRAINING
___ PERSONNEL RESOURCE LIST
___ MANAGEMENT DEVELOPMENT PROGRAMS
___ TRAINING AIDS
___ FUNDING FOR PROJECT COORDINATION
___ FUNDING FOR RESEARCH AND DEVELOPMENT
___ FUNDING FOR NON-CREDIT COLLEGE COURSES
___ INCREASED FUNDING PER INSTRUCTIONAL HOUR & PLANNING
___ OCCUPATIONAL TRAINING PROGRAMS
___ SAFETY AND RIGHT-TO-KNOW PROGRAMS
___ NON-OCCUPATIONAL TRAINING PROGRAMS
___ INFORMATION ON LOCAL, STATE & FEDERAL FUNDING
___ INFORMATION ON OITP SERVICES
___ DECREASE TIME FOR PROJECT APPROVAL
___ OITP FISCAL YEAR FUNDING DATES TO MATCH INDUSTRY
___ NEEDS ASSESSMENT TESTING AND TESTS

NOTE - PLEASE USE THE NEXT PAGE FOR ANY ADDITIONAL COMMENTS

RETURN SURVEY IN SELF-ADDRESSED, STAMPED ENVELOPE BY MAY 10, 1986
APPENDIX J

Survey Instrument
A SURVEY OF THE MANUFACTURING INDUSTRY IN OHIO
CONCERNING THE DELIVERY, BY STATE AGENCIES,
OF USEFUL TRAINING SERVICES AND RESOURCES

A State of Ohio Study

Northwest Career Center
8860 Cranston Drive
Dublin, Ohio 43017
This study is being conducted in order for the Ohio Industrial Training Program (OITP) to better meet the training needs of the manufacturing industry in Ohio. Circle the response which corresponds the closest to your true feelings about each question or statement.

The delivery of training services and resources has been divided into ten service areas. Each page of this survey represents a different service to be reviewed. Each service has four parts. The first part asks the question: WAS THE SERVICE AND/OR RESOURCE AVAILABLE TO YOUR COMPANY THROUGH THE OHIO INDUSTRIAL TRAINING PROGRAM (OITP)? Please circle YES or NO to these questions.

The second part asks the question: WAS THE SERVICE AND/OR RESOURCE NEEDED BY YOUR COMPANY? Please circle YES or NO to these questions. If you circle NO, move to next page.

The third part asks the question: WAS THE SERVICE AND/OR RESOURCE PROVIDED TO YOUR COMPANY THROUGH THE OHIO INDUSTRIAL TRAINING PROGRAM (OITP)? Please circle YES or NO to these questions. If you circle NO, move to next page.

If you circled YES to part three you should answer part four. Please respond to the statements in part four by circling the response which corresponds the closest to your true feelings about each statement.

SA = Strongly Agree
A = Agree
AS = Agree Slightly

DB = Disagree Slightly
D = Disagree
SD = Strongly Disagree

EXAMPLE: DOGS ARE THE IDEAL PET. (SA) A AS DB D SD
This person strongly agrees with the statement and so indicated by circling "SA" (Strongly Agree).
BEGIN HERE:

SERVICE - PROVIDE THE SERVICE AND/OR RESOURCES FOR ASSISTING IN THE ASSESSMENT OF EMPLOYEE TRAINING NEEDS

(circle yes or no)

1. Was the service available to your company through GITP?
   NO  YES

2. Was the service needed by your company?
   NO ——> If no, move to next page
   YES

3. Was the service and/or resource provided to your company through GITP?
   NO ——> If no, move to next page
   YES

<table>
<thead>
<tr>
<th>SA</th>
<th>Strongly Agree</th>
<th>DB</th>
<th>Disagree Slightly</th>
<th>A</th>
<th>Agree</th>
<th>D</th>
<th>Disagree</th>
<th>AS</th>
<th>Agree Slightly</th>
<th>SD</th>
<th>Strongly Disagree</th>
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If yes, respond to below

LEVEL OF AGREEMENT (Circle your responses)

LEVEL OF AGREEMENT (Circle your responses)

The service and/or resource provided by the GITP representative of assisting in the assessment of employee training needs was useful to your company.

The GITP representative was knowledgeable in the area of assessing employee training needs and/or of available resources to assist company personnel in the assessment of employee training needs.

The GITP representative did not spend enough time in assisting company personnel in obtaining needed resources for assisting in the assessment of employee training needs.

The GITP representative did not provide resources which adequately assisted in the assessment of employee training needs.

COMMENTS:

TURN TO NEXT PAGE AND CONTINUE
SERVICE - ASSIST AND/OR PROVIDE RESOURCES IN DEVELOPMENT OF COMPANY TRAINING PLAN

(circle no or yes)

1. Was the service available to your company through OITP?
   - NO
   - YES

2. Was the service needed by your company?
   - NO
   - YES
   (arrow to next page)

3. Was the service provided to your company through OITP?
   - NO
   - YES
   (arrow to next page)

SA = Strongly Agree  DS = Disagree Slightly
A = Agree  D = Disagree
AS = Agree Slightly  SD = Strongly Disagree

If yes, respond to below.

The service and/or resource provided by the OITP representative in assisting in the development of a company training plan was useful to your company.

LEVEL OF AGREEMENT (circle your response)

SA  A  AS  DS  D  SD

The OITP representative was not knowledgeable in the process of the development of a company training plan.

SA  A  AS  DS  D  SD

The OITP representative was readily available to assist in the development of a company training plan.

SA  A  AS  DS  D  SD

The process of developing a company training plan received adequate support from the OITP representative.

SA  A  AS  DS  D  SD

COMMENTS:

TURN TO NEXT PAGE AND CONTINUE
SERVICE - ASSIST IN THE COMPLETION OF AN OITP GRANT APPLICATION

(circle no or yes)

1. Was the service available to your company through OITP? YES

2. Was the service needed by your company? NO → if no, move to next page

3. Was the service provided to your company through OITP? NO → if no, move to next page

<table>
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<tr>
<th>Level of Agreement</th>
<th>SA</th>
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<th>AS</th>
<th>DS</th>
<th>D</th>
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<tr>
<td>The service provided by the OITP representative of assisting in completing the application for obtaining an OITP grant was useful to your company.</td>
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<td>The process of determining the cost of the training plan to obtain information needed for applying for OITP grant funds was not adequately supported by the OITP representative.</td>
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<tr>
<td>The process of completing the OITP grant application was not adequately communicated to company personnel by the OITP representative.</td>
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<td>The application paperwork for obtaining an OITP grant was not unreasonable for the type of project and funds received.</td>
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COMMENTS:

TURN TO NEXT PAGE AND CONTINUE
SERVICE - PROVIDE THE RESOURCES FOR OBTAINING INSTRUCTOR(S) FOR IN-PLANT TRAINING THROUGH THE STAFF(S) OF A VOCATIONAL SCHOOL, TECHNICAL INSTITUTION AND/OR UNIVERSITY

(circle no or yes)

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<td>1. Was the service available to your company through GITP?</td>
<td>NO YES</td>
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| 2. Was the service needed by your company? | NO YES  
|                     | NO → IF no, move to next page |
| 3. Was the service provided to your company through GITP? | NO YES  
|                     | NO → IF no, move to next page |

SA = Strongly Agree  
AS = Agree Slightly  
D = Disagree  
DS = Disagree Slightly  
SD = Strongly Disagree

The service provided by the GITP representative of obtaining instructor(s) for in-plant training through the staff of a vocational school, technical institution and/or university was useful to your company.

The GITP representative was not knowledgeable of sources of instructors for the planned training areas.

The resource of instructor(s), which was provided by the GITP representative, supplied the quality of instruction needed to achieve the company's training goals.

The procedure for utilizing instructor(s) from a vocational school, technical institute and/or university for in-plant training, was adequately communicated by the GITP representative.

The paperwork was reasonable for obtaining funding to support the instructional cost.

The funding obtained through the GITP was not a major factor in providing training for your company.

The process of receiving instructor(s) from a vocational school, technical institute and/or university received adequate support from the GITP representative.

COMMENTS:

TURN TO THE NEXT PAGE AND CONTINUE
### SERVICE - PROVIDE THE RESOURCE OF INSTRUCTION AT A VOCATIONAL SCHOOL, TECHNICAL INSTITUTION AND/OR UNIVERSITY

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<tr>
<td>1. Was the service available to your company through OITP?</td>
</tr>
<tr>
<td>NO</td>
</tr>
<tr>
<td>2. Was the service needed by your company?</td>
</tr>
<tr>
<td>NO ——&gt; If no, move to next page</td>
</tr>
<tr>
<td>YES</td>
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<tr>
<td>3. Was the service area provided to your company through OITP?</td>
</tr>
<tr>
<td>NO ——&gt; If no, move to next page</td>
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<tr>
<td>YES</td>
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<tr>
<th>LEVEL OF AGREEMENT</th>
<th>(circle your response)</th>
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<tbody>
<tr>
<td>SA = Strongly Agree</td>
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</tr>
<tr>
<td>AS = Agree Slightly</td>
<td>SD = Strongly Disagree</td>
</tr>
</tbody>
</table>

The resource provided by the OITP representative of receiving instruction at a vocational school, technical institution and/or university was useful to your company.

The process of receiving instruction at a vocational school, technical institute and/or university was not adequately communicated to company personnel by the OITP representative.

The instruction received at the vocational school, technical institution and/or university was not adequate to meet company training needs.

The OITP representative was not knowledgeable of instructional resources at vocational schools, technical institutions and/or university which would meet company needs.

The paperwork was reasonable for obtaining funds to support the instructional cost.

The financial support obtained by receiving instruction at a vocational school, technical institution and/or university was not a major factor in providing training for your company.

The process of receiving instruction at a vocational school, technical institution and/or university did not received adequate on-going support from the OITP representative.

**COMMENTS:**

TURN TO THE NEXT PAGE AND CONTINUE


### SERVICE - PROVIDE THE RESOURCE OF THE VOCATIONAL SCHOOL, TECHNICAL INSTITUTION AND/OR UNIVERSITY IN ASSISTING IN THE DEVELOPMENT OF TRAINING CURRICULUM

<table>
<thead>
<tr>
<th>Question</th>
<th>Level of Agreement</th>
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<tbody>
<tr>
<td>1. Was the service available to your company through GITP?</td>
<td>(circle yes or no)</td>
</tr>
<tr>
<td>2. Was the service needed by your company?</td>
<td>(circle yes or no)</td>
</tr>
<tr>
<td>3. Was the service provided to your company through GITP?</td>
<td>(circle yes or no)</td>
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**LEVEL OF AGREEMENT** (circle your response)

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<th>DS = Disagree</th>
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</table>

The resource provided by the GITP representative of the staff of a vocational school, technical institute and/or university assisting company personnel in the development of training curriculum was useful to your company.

The resource provided by the GITP representative of the staff of a vocational school, technical institute and/or university assisting in the development of the training curriculum was not adequate to meet company needs.

The GITP representative was not knowledgeable of resources which the staff of a vocational school, technical institute and/or university could provide as assistance in the development of curriculum needed for your company's training program.

The process of receiving assistance in the development of training curriculum received adequate support from the GITP representative.

The process of receiving assistance in the development of curriculum was adequately communicated by the GITP representative.

The funds obtained through the GITP were a major factor in the development of training curriculum needed for your company's training program.

The paperwork was not unreasonable for obtaining funds to support the development of training curriculum needed for your company's training program.

**COMMENTS:**

TURN TO NEXT PAGE AND CONTINUE
SERVICE - PROVIDE THE RESOURCE OF TRAINING MATERIALS (SUCH AS TEXTBOOKS, MANUALS, SUPPLIES, SOFTWARE, ETC.) THROUGH VOCATIONAL SCHOOLS, TECHNICAL INSTITUTES AND/OR UNIVERSITIES

(circle no or yes)

1. Was the service available to your company through OITP?  
   NO  
   YES

2. Was the service needed by your company?  
   NO  
   YES

3. Was the service provided to your company through OITP?  
   NO  
   YES

   SA = Strongly Agree  
   D = Disagree Slightly

   A = Agree  
   D = Disagree

   AS = Agree Slightly  
   SD = Strongly Disagree

   If yes, respond to below

   LEVEL OF AGREEMENT  
   (circle your response)

   SA A AS DS D SD

The service provided by the OITP representative of utilising vocational schools, technical institute and/or university to assist company personnel with obtaining training materials was useful to your company.

The OITP representative was knowledgeable of available resources through vocational schools, technical institutes and/or universities to assist in the process of obtaining training materials.

The resources identified by the OITP representative to assist company personnel in obtaining training materials was adequate to meet your company's needs.

The procedure for utilising vocational and/or technical school personnel in obtaining training materials was adequately communicated by the OITP representative.

The process of utilising vocational and/or technical school personnel in obtaining training materials did not receive adequate support.

COMMENTS:

TURN TO NEXT PAGE AND CONTINUE
SERVICE - PROVIDE ASSISTANCE TO COMPANY PERSONNEL IN UTILIZING FEDERAL, STATE AND/OR COMMUNITY AGENCY RESOURCES (SERVICES NOT TO INCLUDE VOCATIONAL SCHOOL, TECHNICAL INSTITUTION AND/OR UNIVERSITY SERVICES)

(circle no or yes)

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<table>
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<td>NO</td>
</tr>
<tr>
<td>2. Was the service needed by your company?</td>
<td>NO → IF NO, MOVE YES TO NEXT PAGE</td>
</tr>
<tr>
<td>3. Was the service provided to your company through OITP?</td>
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If yes, respond to below

LEVEL OF AGREEMENT (circle your response)

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The service provided by the OITP representative of providing assistance to company personnel in utilizing federal, state and/or community agency resources was useful to your company.

The OITP representative did not provide, federal, state and/or community agency resources which adequately met the needs identified by company personnel.

The OITP representative was not knowledgeable of available federal, state and/or community agency resources which could meet the needs identified by company personnel.

The procedure for utilizing resources of federal, state and/or community agencies was adequately communicated by the OITP representative.

COMMENTS:

TURN TO NEXT PAGE AND CONTINUE
**SERVICE - PROVIDE ASSISTANCE TO COMPANY PERSONNEL IN LOCATING TRAINING CONSULTANT SERVICES (NOT TO INCLUDE VOCATIONAL, TECHNICAL AND/OR UNIVERSITY SERVICES)**

(circle na or yes)

1. Was the service available to your company through OITP?  
   - NO
   - YES

2. Was the service needed by your company?  
   - NO, move to next page
   - YES

3. Was the service provided to your company through OITP?  
   - NO, move to next page
   - YES

<table>
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The service of the OITP representative in assisting company personnel in locating training consultant services was useful to your company.

The OITP representative spent the time necessary in assisting company personnel in locating needed training consultant services.

The OITP representative was not knowledgeable of training consultant resources needed by your company.

The OITP representative did not provide resources which provided adequate training consultant services.

**LEVEL OF AGREEMENT**  
(circle your response)

<table>
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**COMMENTS:**

TURN TO NEXT PAGE AND CONTINUE
SERVICE - PROVIDING OITP GRANT FUNDS

(Circle no or yes)

1. Was the service available to your company through OITP? NO YES

2. Was the service needed by your company? NO → If no, move YES to next page

3. Was the service provided to your company through OITP? NO → If no, move YES to next page

SA = Strongly Agree DB = Disagree Slightly
A = Agree D = Disagree
AS = Agree Slightly DD = Strongly Disagree

The service of OITP of providing grant funds was useful to your company.

LEVEL OF AGREEMENT
(circle your response)

The funds obtained through OITP grants was paid in a reasonable time to your company.

SA A AS DS D SD

The funds provided by OITP for training grants were not a major factor in providing instructional training for your company.

SA A AS DS D SD

The paperwork for obtaining payment of OITP grant funds was unreasonable.

SA A AS DS D SD

The OITP representative did not provide adequate on-going support in initiating and expediting grant fund payments to your company.

SA A AS DS D SD

The procedure for receiving OITP grant funds was not adequately communicated by the OITP representative.

SA A AS DS D SD

COMMENTS:

NOTE - PLEASE USE THE NEXT PAGE FOR ANY ADDITIONAL COMMENTS

RETURN SURVEY IN SELF-ADDRESSED ENVELOPE
RECORD ANY ADDITIONAL COMMENTS ON THIS PAGE

THANK YOU AGAIN FOR YOUR HELP!
APPENDIX K

Introduction Letter to the

Training Coordinators to the Survey Instrument
April 18, 1980

Mr. Vince Brothers, Associate Relations
O. H. Scott & Sons, Inc.
14111 Scottslawn Road
Marysville, OH 43040

Dear Mr. Brothers:

Providing useful training services and resources to the manufacturing industry in Ohio is always a major goal of the Ohio Industrial Training Program (OITP). To achieve this goal we must become aware of how successful we have been in the past in providing these services. You and your company have been selected from those companies who received a project grant during the period from July 1, 1982 to December 31, 1983. We feel your position with your company and the fact that you have worked with our Mid-Ohio consortium representative(s) on a training project makes you an ideal person to assist us in our goal of providing useful training services and resources to manufacturing companies in Ohio. We need and would greatly appreciate your help in this process.

We would like you to complete the enclosed survey which asks you to help us determine what training services and resources were provided and how useful they were to your company. We need to know which training services and resources were not available through the Ohio Industrial Training Program (OITP) and also what training services were available but were not needed by your company. The purpose of this study is to provide better training services to the manufacturing industries in Ohio. You and your company’s identity will be held in strict confidentiality and will only be known by the researcher for the purpose of organizing the data. This survey should be returned to us in the enclosed stamped, self-addressed envelope by May 31, 1984.

Thank you in advance for your cooperation in this study, and enclosed is a stick of gum as a small token of our appreciation.

Sincerely,

John R. Venter, Manager
Office of Industrial Training

Thomas R. Snyder, Researcher

enclosures

P.O. Box 1001, Columbus, Ohio 43286-0101 (614) 466-2480
APPENDIX L

Formula for Estimating Sample Size

for the Second Strategy Survey
ESTIMATING SAMPLE SIZE
(CATEGORICAL VARIABLES)

\[ n_0 = \frac{t \cdot pq}{d^2} \]

d = Acceptable Margin of Error (.05)
t = Risk of Getting "unlucky" sample (2)
p = Estimated Proportion p(.20) q(.80)

\[ n_0 = \frac{(2)^2(\cdot20)(\cdot80)}{(\cdot05)} \]

\[ n_0 = 256 \]

\[ n_0 = \frac{256}{420} = .60 \]

Since \( n_0 \) is greater than .05, used finite population correction

\[ n = \frac{n_0}{1+n_0} = \frac{256}{1+256} = \frac{160}{420} \]
APPENDIX M

Members of the Field Test Committee
FIELD TEST ADVISORY COMMITTEE

Mrs. Linda Moloney - Training/Development Coordinator
Fulfillment Corporation of America
205 West Center Street
Marion, OH 43302
(614) 383-5231

Mr. John Markham, Manager - Employee Relations
The Nippert Company
801 Pittsburgh Drive
Delaware, OH 43015
(614) 363-1981

Mr. John N. McCormick, Jr. - Employee Relations Mgr.
Stratoflex, Inc.
P. O. Box 182
Green Camp, OH 43322
(614) 528-2616

Mr. Vince Smothers, Associate Relations
O. M. Scott & Sons, Inc.
14111 Scottslawn Road
Marysville, OH 43040
(513) 644-0011
APPENDIX N

Results of Round 1--Delphi
CODE NUMBER: 081
M1: TECHNICAL CONSULTATION
E1: EXPERTS TO CALL UPON FOR SMALL OR MEDIUM SIZE COMPANIES TO EVALUATE EFFECTIVE ??? TECHNICAL PROCESSES.
E2: MORE ASSISTANCE WITH PROVIDING TECHNICAL WRITERS TO HELP DEVELOP TRAINING MANUALS.
N3: DEVELOPMENT OF ORIENTATION FILMS AND VIDEO TRAINING.
E5:

CODE NUMBER: 100
M1: ADDING MACHINE
E1: DESIGN, SET-UP AND OPERATION
N2: PRODUCTION CONTROL & MANUFACTURING SCHEDULING
E2: COMPUTER AIDED PLANNING AND ORGANIZATION TECHNIQUES FOR EQUIPMENT, MATERIALS, AND PERSONNEL UTILIZATION.
N3: TRAIN THE TRAINER
E3: DEVELOP MANAGEMENT SUPERVISORS CAPABILITIES IN PLANNING, ORGANIZING & CONDUCTING TRAINING PROGRAMS.
E4: IDENTIFY SKILLED TRADES AREAS WHERE SHORTAGES OF QUALIFIED APPLICANTS EXIST.
E5: DEVELOP TRAINING PROGRAM(S) FOR THEIR INITIAL AND ONGOING DEVELOPMENT.
E6: SKILLS IDENTIFICATION PROGRAM
E7: PROVIDE BATTERY OF TEST TO PIN POINT SKILLS /INTERESTS POSSESSED BY EMPLOYEES. USE TO MATCH EMPLOYEES SKILLS/INTEREST TO COMPANY NEEDS.

CODE NUMBER: 138
M1: BETTER PR ON GIFT TO LET INDUSTRY KNOW ITS AVAILABLE ON HOW TO APPLY
E1: WHEN WE HAD TRAINING NEEDS TO PROTECT JOBS & TO CREATE JOBS WE STUMLED INTO THE GIFT BY CASUAL CONVERSATIONS WITH OTHER INDUSTRIES IN THE AREA. WE'S DOUGUSS THAT LOCAL CHAMBERS OF COMMERCE HAVE DESCRIPTIVE BROCHURES & CONTACT NAMES.
E2: STATE FISCAL YEARS DON'T CORRESPOND TO INDUSTRY FISCAL YEARS. PAPERWORK IS EASY, BUT COPIOUS.
E3: THE LOCAL FISCAL AGENT ADMINISTRATOR WORKING ONE ON ONE WITH THE COMPANY IS THE BEST VEHICLE TO EXPLAIN & TO STREAMLINE PAPERWORK. IT'S THE 2ND YEAR OF A 3 YR. GRANT BEFORE COMPANIES ARE USED TO THE SYSTEM. THERE IS A CHANCE FOR FUTURE E6 CONT.I OF GRANT FUNDS BECAUSE COMPANIES ARE NOT USED TO THE SYSTEM. AS AN EXAMPLE OUR GRANT HAD SEVERAL TOPICS CARRIED OVER TO A 2ND YEAR. THE STATE REMEMBERED THE TOPICS, SO YOU PLAN WITH TWO LINE ITEMS.
E5:
CODE NUMBER: 144
M1: WE NEED A FACILITY WHERE WE CAN TAKE ASSOCIATE OFF SITE FOR TRAINING THE FACILITY NEEDS TO BE FACTORY ORIENTED. NEEDS LODGING, A CAFETERIA.
E1: MOST TRAINING PROGRAMS ARE NOT AS EFFECTIVE BECAUSE THEY ARE NOT RELATED TO INDUSTRY ENOUGH
R2: THE BIGGEST PROBLEM WE HAVE IN THIS COUNTRY IS OUR INABILITY TO WORK TOGETHER AS ONE CO. MOST OF THE COS. DON'T & THIS IS TREMENDOUSLY DETERMINAL IN WORLD WIDE MARKET. WE MUST RETRAIN PEOPLE & TEACH THE IMPORTANCE OF TEAM WORK.
E2:
E3: HOURLY ASSOCIATE, MUST KNOW MORE ABOUT WORLD WIDE ECONOMICS & THE CHANGING WORLD WIDE MARKET PLACE. UNLESS PEOPLE CAN TRULY UNDERSTAND WHAT IS HAPPENING WE WILL CONTINUE TO LOSE INDUSTRY IN THIS COUNTRY & ESPEC. THIS STATE. EG 1982 RECEES.
E3:
R4: NEED A LIST OF INSTRUCTORS AVAILABLE TO TEACH VARIOUS PROGRAMS ON SITE.
E4: 1. QUALITY CIRCLE PROGRAMS 2. TEAM BUILDING 3. QUALITY CONTROL TRAINING. ETC.
E6:
E6:

CODE NUMBER: 145
M1: VCR VIDEO TRAINING
E1: HOURLY EMPLOYEES TAKING A VIDEO COURSE ON HOW TO READ VARIOUS MEASURING TOOLS SUCH AS A RULE, MICROMETER AND VERNIERS.
E2: MANAGEMENT DEVELOPMENT PROGRAM.
E3: MID MANAGERS TAKING COURSES TO HELP THEM BETTER MANAGE FOR INCREASED PRODUCTIVITY.
E3:
E4:
E4:
E6:
E6:

CODE NUMBER: 171
M1: COMPUTER TRAINING
E1: COMPUTER SYSTEM IS NOT BEING UTILIZED TO ITS FULLEST EXTENT DUE TO LACK OF UNDERSTANDING BY MANY OF THE VARIOUS DEPARTMENTS WHO NEED THIS INFORMATION.
E2: TOOL AND DIE MAKER TRAINING
E3: QUALIFIED PEOPLE ARE RETIRING AND OUR YOUNGER TRAINEES ARE ONLY GETTING ON THE JOB TRAINING - NO TECHNICAL TRAINING.
E3:
E4:
E4:
E6:
E6:
CODE NUMBER: 134

M1: FUNDING FOR NON-CREDIT COLLEGE COURSES.
E3: WORD PROCESSING COURSE: IBM PC TRAINING COURSE.
N2: INCREASE IN DOLLAR AMOUNTS FOR TRAINING.
E2: TOTAL FUNDING FOR INSTRUCTOR HOURS.
N3: CUSTOMIZED TRAINING CENTER TO ACCOMMODATE LOCAL INDUSTRIAL TRAINING NEEDS THROUGH MCTO AND MANSFIELD OSU.
E3: TRAINING CENTER ON-CAMPUS FOR VARIOUS INDUSTRIAL-TYPE TRAINING COURSES, SUCH AS CRANE OPERATION, MACHINE TRADES, ETC.
M4:
E4:
N5:
E5:

CODE NUMBER: 175

N1: SUPPORT SERVICES
E1: TRAINING FOR SERVICE GROUPS WHO’S MAIN FUNCTION IS SUPPORT OF THE NEW INDUSTRIAL AND COMMERCIAL TECHNOLOGY.
M2: PRACTICAL APPLICATION OF COMPUTER CONTROL.
E2: TRAINING ON AN INFORMATION BASIS DISPLAYING THE NEW TECHNOLOGY OF A TOOL, NOT A DISPLACEMENT.
E3:
M4:
E4:
N5:

CODE NUMBER: 176

M1: COOLING AND REFRIGERATION
E1: I WANT HANDS-ON MAINTENANCE TRAINING AND AS LITTLE TECHNICAL TERMINOLOGY AS POSSIBLE.
N2: ELECTRONIC MAINTENANCE SPECIFICALLY DIRECTED TOWARD MACHINE CONTROL UNITS AND BACKGROUND COMPUTERS USED ON CNC EQUIP.
E2: DIAGNOSTICS OF PROBLEMS THAT OCCUR IN THE COMPUTERS. GLITCHES, SOFTWARE SHORTS, ETC.
N3: EXPAND HYDRAULICS COURSES TO COVER HYDRAUSTATICS.
E3: MOST NEW EQUIPMENT HAS A NON-CONTACT BEARING SURFACE ACHIEVED BY A HYDRAUSTATIC WAY SYSTEM.
N4: A FLEXIBLE NO CNC TRAINING PROGRAM THAT GROWS WITH THE COMMUNITY NEEDS.
E4: AS MORE AND MORE INDUSTRY GETS INVOLVED WITH CNC, THE SKILL LEVEL OF OPERATORS WILL HAVE TO INCREASE.
N5: CAD/CAM TRAINING BEYOND THE BASICS
E5: THE SAME REASONS AS ABOVE. THE ENTRY LEVEL EMPLOYEE WILL NEED GREATER SKILLS.
CODE NUMBER: 178
H1: PROGRAMABLE CONTROLER; TROUBLE SHOOTING, REPAIR, OPERATION
E1: CURRENT AND FUTURE MACHINES ARE NOW COMPUTER ASSISTED. WE NEED TO IMPROVE
OUR UNDERSTANDING AND EXPERTISE ON REPAIR AND TROUBLE SHOOTING.
E2: ADVANCED STATISTICS AND EXPERIMENTAL DESIGN. NEXT STEP AFTER SPC
E3:
E4:
E5: ELECTRONIC TROUBLE SHOOTING AND USE OF TEST EQUIPMENT
E6: ADDITIONAL TRAINING THAT WILL ALLOW APPLICATION ON THE JOB OF BASIC
E7: ELECTRICAL TRAINING LEARNING
E8: ROBATIC OPERATION, MAINTENANCE TROUBLE SHOOTING
E9: BASIC OPERATION, BASIC MAINTENANCE AND THEORY OF OPERATION.

CODE NUMBER: 179
H1: MACHINING BLUEPRINT READING TRAINING
E1:
E2: MATH SKILLS TRAINING
E3:
E4: PROVIDE EDUCATION REGARDING VARIOUS STATE FUNDED PROGRAMS WHICH ARE
AVAILABLE TO INDUSTRY.
E5:
E6:

CODE NUMBER: 180
H1: CONTINUED EMPHASIS NEEDS TO BE PLACED ON STATISTICAL QUALITY CONTROL DUE TO
THE INCREASING QUALITY DEMANDS OF THE AUTOMOTIVE AND OTHER INDUSTRIES.
E1:
E2:
E3:
E4:
E5:
**CODE NUMBER: 181**
E1: RESOURCE BANK OF TRAINING PROVIDERS
E1: IF I NEED A COURSE PRESENTED ON GEOMETRICAL DIMENSIONING & TOLERANCING, IF
E1: WOULD LIKE TO CALL & OBTAIN THE NAME OF THE BEST TRAINER IN THE STATE ON THAT
E1: SUBJECT.
E2: TECHNICAL ASSISTANCE CONSULTANTS FOR IMPLEMENTATION OF A GIVEN CHANGE, FOR
E2: EXAMPLE: JUST-IN-TIME.
E1: CLASSROOM TRAINING IS COVERED, BUT THE CONSULTANT TO COME IN AND WORK WITH
E1: MONT. IN IMPLEMENTING CHANGE OR AUDITING A SYSTEM IS NOT TO MY KNOWLEDGE
E1: COVERED. NOW THAT I UNDERSTAND IT, SOMEONE TO PROCESS THE GROUP AS IT PLANS TO
E1: IMPLEMENT
E3: (E2 CONT.) THE CONCEPT – WHO EVALUATES CURRENT AND HELPS THE GROUP DECIDE
E1: ON FUTURE.
E4: M6: COLLEGE PROFESSORS ARE NOT ALWAYS THE BEST TRAINERS OR KNOW THE MOST ABOUT
E4: APPLICATION – RESOURCE BANK SHOULD INCLUDE REPUTABLE CONSULTANTS, NOT JUST OHIO
E4: COLLEGES.
E5: E6:

**CODE NUMBER: 183**
E1: FUNDING FOR INSTRUCTOR
E1: PERSONS HIRED ASSUMED JOBS NOT RELATED TO PREV. WORK EXPERIENCE. TIME
E1: ALLOTTED FOR INSTRUCTION SHOULD BE BASED ON TIME NEEDED TO TRAIN, KEEP RECORDS,
E1: APPLY FOR TAX RETURNS, ETC. & NOT JUST ACTUAL INSTRUCTIONAL HRS.
E2: TRAINING FOR MACHINE OPERATORS.
E2: THE COMPENSATION FOR THE TRAINING SHOULDN'T BE LIMITED TO LOW INCOME PERSONS
E3: ADDITIONAL TRAINING
E3: ASSISTANCE NEEDED ON NEW PRODUCTS & DESIGNS TO GAIN ADDITIONAL PRODUCTION.
E4: GREATEST PROBLEM IS TIME.
E5: E6:

**CODE NUMBER: 186**
E1: TO DATE, WE HAVE NOT IDENTIFIED ANY NEEDS THAT HAVE NOT BEEN AVAILABLE
E1: THROUGH CITT.
E1:
E2:
E3:
E4:
E5:
E6:
E7:
CODE NUMBER: 186
M1: SUPERVISORY TRAINING IN DECISION-MAKING.
   E1: SUPERVISORS NEED TO BE TRAINED IN MAKING SYSTEMATIC AND LOGICAL DECISIONS
CONCERNING PROBLEMS OR SITUATIONS IN THEIR DEPARTMENTS.
M2: COMMUNICATION SKILLS FOR ALL EMPLOYEES.
E2: EFFECTIVE COMMUNICATION BETWEEN FOREMEN AND PLANT PERSONNEL IS LACKING.
M3: MOTIVATION.
E3:
M4: HUMAN RELATIONS.
E4:
M5:
E5:

CODE NUMBER: 188
M1: ELECTRONICS
E1: CONTROLLERS FOR CNC EQUIPMENT.
M2: ROBOTICS
E2: SERVING AND MAINTAINING ROBOTS
M3:
E3:
M4:
E4:
M5:
E5:

CODE NUMBER: 190
M1:
E1:
M2:
E2:
M3:
E3:
M4:
E4:
M5:
E6:
CODE NUMBER: 191

M1: VIDEOTAPE PRESENTATIONS OF TECHNICAL SUBJECTS.
E1: BASIC BLUEPRINT READING VIDEOTAPE MODULES.
E2: BASIC QUALITY CONTROL TRAINING PROGRAM.
E3: RIGHT-TO-SHOW TRAINING MATERIALS.
E4: HAZARDOUS MATERIAL TRAINING TO MEET OSHA REQUIREMENTS.
E5: A PROGRAM TO UPGRADE CONVENTIONAL MILL OPERATORS TO NC/CNC MILL OPERATORS.
E6: INTRODUCTION TO MC MACHINING.
M2: VIDEOTAPE LIBRARY OR SOURCE CATALOGS WHERE THEY CAN BE BORROWED/COPIED.
M3: SOME MANUFACTURING PROCESSES VIDEOTAPE.

CODE NUMBER: 197

M1: TRAINING IN MULTI-TRADE & CRAFT AREAS OF OUR HOURLY CRAFT EMPLOYEES.
E1: WE WANT TO ESTABLISH TWO BASIC JOBS: ELECTRICAL MAINTENANCE MAN, MECHANICAL MAINTENANCE MAN.
M2: TRAINING OF EMPLOYEES AT OUR NEW CONTINUOUS CASTER.
E2: WE RECENTLY BUILT & OPENED A NEW CONTINUOUS CASTER.
M3: SUPERVISORY TRAINING COURSES.
E3: WE WOULD HOPE TO TRAIN OUR SUPERVISORS IN BOTH TECHNICAL & HUMAN RESOURCE TYPE SKILLS.
M4:
M5:
E6:

CODE NUMBER: 199

M1: EMPLOYEE ASSISTANCE TRAINING.
E1: THERE APPEARS TO BE A GROWING NEED TO SUPPLY TRAINING ASSISTANCE IN THE DEVELOPMENT AND ONGOING MAINTENANCE OF EMPLOYEE ASSISTANCE PROGRAMS. (TROUBLED EMPLOYEES DUE ALCOHOL, MARITAL, FINANCIAL, ETC PROBLEMS.)
M2: ASSISTANCE IN TRAINING AID PURCHASES (OVERHEADS, ETC.)
E2: ONE OBJECTIVE IN RECEIVING AID FROM THE STATE IS TO STRUCTURE ONGOING TRAINING PROGRAMS TO CONTINUE THE IMPROVEMENT PROCESS. MARION'S TRAIN AIDS WOULD NEED THE ONGOING STRUCTURE.
M3:
M4:
E5:
E6:
CODE NUMBER: E41
M1: QUALITY OF WORK LIFE FACILITATORS
E1: WOULD LIKE TO IMPLEMENT INVOLVEMENT PROGRAM; NEED SERVICES TO TRAIN THE
TRAINER.
M2: TEAMBUILDING PROGRAMS
E2: ORGANIZATIONAL DEVELOPMENT PROGRAMS - SUPV. & MORE.
M3: PROGRAMS DESIGNED TO HANDLE CHANGE WITHIN AN ORGANIZATION
E3: TOOLS SUPV. CAN USE TO MAKE "CHANGE" DESIRABLE. PERSONNEL AS WELL AS PROCESS
CHANGES.
M4:
E4:
M5:
E5:
APPENDIX 0

Results of Round 2—Delphi
Table 10

Service Area 1—Round 2 Responses

SERVICE AREA: INDUSTRIAL TRAINING CENTER—A factory oriented center including such facilities as cafeteria, lodging, specialized training equipment, support staff, etc.

Participants who responded to service area: 14
Participants who agreed: 11 (78.6%)  
Participants who disagreed: 3 (21.4%)

Transformation of certainty scores chart

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| MEAN:      | 10.29 | STANDARD DEVIATION: 4.25

Note. Dash represents data from questions not responded to by the participants.
Table 11

Service Area 2—Round 2 Responses

SERVICE AREA: TEAM BUILDING TRAINING—Team building training such as quality circles, group goal setting and problem solving, group process, participatory management, etc.

Participants who responded to service area: 15

Participants who agreed: 13 (86.7%)
Participants who disagreed: 02 (13.3%)

Transformation of certainty scores chart

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MEAN: 13.00  STANDARD DEVIATION: 4.00

Note. Dash represents data from questions not responded to by the participants.
Table 12

Service Area 3—Round 2 Responses

SERVICE AREA: ECONOMICS TRAINING—Economics training which is related to the manufacturing economy, world competition in productivity, world-wide banking, etc.

Participants who responded to service area: 14

Participants who agreed: 13 (92.9%)
Participants who disagreed: 01 (07.1%)

Transformation of certainty scores chart

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MEAN: 12.43   STANDARD DEVIATION: 3.13

Note. Dash represents data from questions not responded to by the participants.
Table 13

Service Area 4—Round 2 Responses

SERVICE AREA: PERSONNEL RESOURCE LIST—Personnel resource list to include instructors and consultants in such areas as technical writing, development of instructional support materials, technical, occupational, and general employment related subjects, etc.

Participants who responded to service area: 16
Participants who agreed: 15 (93.7%)
Participants who disagreed: 1 (6.3%)

Transformation of certainty scores chart

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MEAN: 12.13   STANDARD DEVIATION: 2.92

Note. Dash represents data from questions not responded to by the participants.
Table 14

Service Area 6—Round 2 Responses

SERVICE AREA: MANAGEMENT DEVELOPMENT PROGRAMS—Management development programs to include such areas as decision making, planning and conducting training, motivation techniques, computer aided production control, human relations, etc.

Participants who responded to service area: 15

Participants who agreed: 13 (86.7%)
Participants who disagreed: 2 (13.3%)

Transformation of certainty scores chart

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MEAN: 11.80  STANDARD DEVIATION: 4.63

Note. Dash represents data from questions not responded to by the participants.
Table 15

Service Area 6—Round 2 Responses

SERVICE AREA: TRAINING AIDS—Training aids to include such items as video training programs, pre-developed overhead transparencies, computer programs, manuals, handouts, workbooks, etc.

Participants who responded to service area: 13
Participants who agreed: 10 (61.2%)
Participants who disagreed: 3 (18.8%)

Transformation of certainty scores chart

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MEAN: 10.69  STANDARD DEVIATION: 4.38

Note. Dash represents data from questions not responded to by the participants.
Table 16

Service Area 7—Round 2 Responses

SERVICE AREA: FUNDING FOR PROJECT COORDINATION—Funding for such activities as coordinating needs assessment, applying for grants, locating and employing resource consultants and instructors, obtaining instructional materials, obtaining audio/visual aids, supervising instruction, etc.

Participants who responded to service area: 15

Participants who agreed: 12 (80.0%)
Participants who disagreed: 3 (20.0%)

Transformation of certainty scores chart

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Mean: 12.40  Standard Deviation: 3.87

Note. Dash represents data from questions not responded to by the participants.
Table 17

Service Area B—Round 2 Responses

SERVICE AREA: FUNDING FOR RESEARCH AND DEVELOPMENT—Research and development designed at trying new products, designs, production techniques, etc. for improving production.

Participants who responded to service area: 15

Participants who agreed: 13 (86.7%)
Participants who disagreed: 2 (13.3%)

Transformation of certainty scores chart

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Mean: 11.40   Standard Deviation: 3.52

Note. Dash represents data from questions not responded to by the participants.
Table 19: Service Area 9—Round 2 Responses

SERVICE AREA: FUNDING FOR NON-CREDIT COLLEGE COURSES—Funding for courses such as money management, recreational activities, speed reading, etc.

Participants who responded to service area: 14
Participants who agreed: 3 (21.4%)
Participants who disagreed: 11 (78.6%)

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**MEAN:** 5.50 **STANDARD DEVIATION:** 3.37

*Note.* Dash represents data from questions not responded to by the participants.
Table 19

Service Area 10--Round 2 Responses

SERVICE AREA: INCREASED FUNDING--Increased funding to reimburse costs of instruction such as increased rate per hour, reimbursement for planning and preparation time, etc.

Participants who responded to service area: 16
Participants who agreed: 10 (62.5%)
Participants who disagreed: 6 (37.5%)

Transformation of certainty scores chart

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MEAN: 9.81   STANDARD DEVIATION: 6.21

Note. Dash represents data from questions not responded to by the participants.
Table 20

**Service Area 11—Round 2 Responses**

**SERVICE AREA:** OCCUPATIONAL TRAINING PROGRAMS—Occupational type training programs to include such areas as robotics, nc/cnc, cad/cam, electronics, electrical maintenance and repair, tool and die making, cooling and refrigeration, blueprint reading, word processing, occupational mathematics, computers, and other new industrial and commercial technologies, etc.

Participants who responded to service area: 15

Participants who agreed: 15 (100.0%)
Participants who disagreed: 0 (00.0%)

**Transformation of certainty scores chart**

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**Mean:** 13.80  **Standard Deviation:** 2.40

**Note:** Dash represents data from questions not responded to by the participants.
Table 21

Service Area 12—Round 2 Responses

SERVICE AREA: SAFETY RELATED TRAINING—Safety related training such as right-to-know programs, first aid, safety practices and procedures, etc.

Participants who responded to service area: 15

Participants who agreed: 13 (86.7%)
Participants who disagreed: 2 (13.3%)

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17  100.0

MEAN: 12.27   STANDARD DEVIATION: 3.62

Note. Dash represents data from questions not responded to by the participants.
Table 22

Service Area 13—Round 2 Responses

SERVICE AREA: NON-OCCUPATIONAL TRAINING
PROGRAMS—Non-occupational specific training programs such as: quality control, SPS, advanced statistics, employee assistance, quality of work life, etc.

Participants who responded to service area: 14

Participants who agreed: 13 (92.9%)
Participants who disagreed: 1 (07.1%)

Transformation of certainty scores chart

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MEAN: 11.71 STANDARD DEVIATION: 2.43

Note. Dash represents data from questions not responded to by the participants.
Table 23  

Service Area 14--Round 2 Responses

SERVICE AREA: INFORMATION ON FEDERAL/STATE FUNDING—Information on funding for training obtainable from federal, state, and/or local sources.

Participants who responded to service area: 16
Participants who agreed: 16 (100.0%)
Participants who disagreed: 0 (00.0%)

Transformation of certainty scores chart

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MEAN: 12.63  STANDARD DEVIATION: 2.25

Note. Dash represents data from questions not responded to by the participants.
Table 24

**Service Area 15—Round 2 Responses**

SERVICE AREA: INFORMATION ON OHIO INDUSTRIAL TRAINING PROGRAM SERVICES—Information on services provided by OITP such as resources and services, amount of funding, funding categories, etc.

Participants who responded to service area: 15

Participants who agreed: 15 (100.0%)
Participants who disagreed: 0 (00.0%)

Transformation of certainty scores chart

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**Note.** Dash represents data from questions not responded to by the participants.
Table 25

Service Area 16--Round 2 Responses

SERVICE AREA: DECREASED TIME FOR PROJECT APPROVAL--Decrease the time of approval of project funding, which would cut down the time from identification of needs and development of a plan to the training program implementation.

Participants who responded to service area: 16

Participants who agreed: 15 (100.0%)
Participants who disagreed: 0 (00.0%)

Transformation of certainty scores chart

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MEAN: 12.87    STANDARD DEVIATION: 2.23

Note. Dash represents data from questions not responded to by the participants.
Table 26

Service Area 17—Round 2 Responses

SERVICE AREA: FISCAL YEAR MATCH--The fiscal year of the funding agency should match the fiscal year used by industry.

Participants who responded to service area: 15

Participants who agreed: 10 (66.7%)
Participants who disagreed: 5 (33.3%)

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MEAN: 9.67
STANDARD DEVIATION: 5.08

Note: Dash represents data from questions not responded to by the participants.
Table 27

Service Area 18--Round 2 Responses

SERVICE AREA: NEEDS ASSESSMENT TESTING/TESTS--Needs assessment tests and testing to better and more accurately determine training needs.

Participants who responded to service area: 14

Participants who agreed: 10 (71.4%)
Participants who disagreed: 4 (28.6%)

Transformation of certainty scores chart

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17 100.0

MEAN: 10.6  STANDARD DEVIATION: 4.59

Note. Dash represents data from questions not responded to by the participants.
APPENDIX P

Results of Round 3—Delphi
Table 28

Service Area 1—Round 3 Responses

SERVICE AREA: INDUSTRIAL TRAINING CENTER--A factory-oriented center including such facilities as cafeteria, lodging, specialized training equipment, support staff, etc.

Participants who responded to service area: 17
Participants who agreed: 10 (58.8%)
Participants who disagreed: 7 (41.2%)

Transformation of certainty scores chart

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MEAN: 8.77  STANDARD DEVIATION: 5.63

Note. Dash represents data from questions not responded to by the participants.
Table 29

Service Area 2—Round 3 Responses

SERVICE AREA: TEAM BUILDING TRAINING—Team building training such as quality circles, group goal setting and problem solving, group process, participatory management, etc.

Participants who responded to service area: 17
Participants who agreed: 14 (82.4%)
Participants who disagreed: 3 (17.6%)

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MEAN: 11.65 STANDARD DEVIATION: 3.59

Note. Dash represents data from questions not responded to by the participants.
Table 30

Service Area 3—Round 3 Responses

SERVICE AREA: ECONOMICS TRAINING—Economics training which is related to the manufacturing economy, world competition in productivity, world-wide banking, etc.

Participants who responded to service area: 17
Participants who agreed: 15 (88.2%)
Participants who disagreed: 2 (11.8%)

Transformation of certainty scores chart

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MEAN: 11.59  STANDARD DEVIATION: 3.52

Note. Dash represents data from questions not responded to by the participants.
Table 31

Service Area 4--Round 3 Responses

SERVICE AREA: PERSONNEL RESOURCE LIST--Personnel resource list to include instructors and consultants in such areas as technical writing, development of instructional support materials, technical, occupational, and general employment related subjects, etc.

Participants who responded to service area: 16
Participants who agreed: 15 (93.7%)
Participants who disagreed: 1 (06.3%)

Transformation of certainty scores chart

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MEAN: 12.13         STANDARD DEVIATION: 2.92

Note. Dash represents data from questions not responded to by the participants.
SERVICE AREA: MANAGEMENT DEVELOPMENT PROGRAMS—Management development programs to include such areas as decision making, planning and conducting training, motivation techniques, computer aided production control, human relations, etc.

Participants who responded to service area: 17
Participants who agreed: 14 (82.4%)
Participants who disagreed: 3 (17.6%)

Transformation of certainty scores chart

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MEAN: 10.71 STANDARD DEVIATION: 5.05

Note. Dash represents data from questions not responded to by the participants.
Table 33

Service Area 6—Round 3 Responses

SERVICE AREA: TRAINING AIDS—Training aids to include such items as video training programs, pre-developed overhead transparencies, computer programs, manuals, handouts, workbooks, etc.

Participants who responded to service area: 17
Participants who agreed: 14 (82.4%)
Participants who disagreed: 3 (17.6%)

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**MEAN: 11.18** \ **STANDARD DEVIATION: 3.50**

*Note. Dash represents data from questions not responded to by the participants.*
Table 34

Service Area 7—Round 3 Responses

SERVICE AREA: FUNDING FOR PROJECT COORDINATION—Funding for such activities as coordinating needs assessment, applying for grants, locating and employing resource consultants and instructors, obtaining instructional materials, obtaining audio/visual aids, supervising instruction, etc.

Participants who responded to service area: 17
Participants who agreed: 15 (88.2%)
Participants who disagreed: 2 (11.8%)

Transformation of certainty scores chart

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| 17    | 100.0       |

Mean: 12.00
Standard Deviation: 3.59

Note. Dash represents data from questions not responded to by the participants.
Table 35

Service Area 8—Round 3 Responses

SERVICE AREA: FUNDING FOR RESEARCH AND DEVELOPMENT—Research and development designed at trying new products, designs, production techniques, etc. for improving production.

Participants who responded to service area: 17
Participants who agreed: 10 (58.8%)
Participants who disagreed: 7 (41.2%)

Transformation of certainty scores chart

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17 100.0

MEAN: 8.41 STANDARD DEVIATION: 4.96

Note. Dash represents data from questions not responded to by the participants.
Table 36

Service Area 9—Round 3 Responses

SERVICE AREA: FUNDING FOR NON-CREDIT COLLEGE COURSES—Funding for courses such as money management, recreational activities, speed reading, etc.

Participants who responded to service area: 17
Participants who agreed: 4 (23.5%)  
Participants who disagreed: 13 (76.5%)

Transformation of certainty scores chart

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MEAN: 3.94   STANDARD DEVIATION: 4.37

Note. Dash represents data from questions not responded to by the participants.
Table 37

Service Area 10—Round 3 Responses

SERVICE AREA: INCREASED FUNDING—Increased funding to reimburse costs of instruction such as increased rate per hour, reimbursement for planning and preparation time, etc.

Participants who responded to service area: 17
Participants who agreed: 10 (58.8%)
Participants who disagreed: 7 (41.2%)

Transformation of certainty scores chart

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17  100.0

MEAN: 9.12  STANDARD DEVIATION: 4.92

Note. Dash represents data from questions not responded to by the participants.
Table 38

Service Area 11—Round 3 Responses

SERVICE AREA: OCCUPATIONAL TRAINING PROGRAMS—Occupational type training programs to include such areas as robotics, nc/cnc, cad/cam, electronics, electrical maintenance and repair, tool and die making, cooling and refrigeration, blueprint reading, word processing, occupational mathematics, computers, and other new industrial and commercial technologies, etc.

Participants who responded to service area: 16
Participants who agreed: 16 (94.10%)
Participants who disagreed: 1 (6.9%)

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**Transformation of certainty scores chart**

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**MEAN: 14.24  STANDARD DEVIATION: 3.33**

Note. Dash represents data from questions not responded to by the participants.
Table 39

Service Area 12--Round 3 Responses

SERVICE AREA: SAFETY RELATED TRAINING--Safety related training such as right-to-know programs, first aid, safety practices and procedures, etc.

Participants who responded to service area: 17
Participants who agreed: 13 (76.5%)
Participants who disagreed: 4 (23.5%)

Transformation of certainty scores chart

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17 100.0

MEAN: 10.82  STANDARD DEVIATION: 4.71

Note. Dash represents data from questions not responded to by the participants.
Table 40

Service Area 13—Round 3 Responses

SERVICE AREA: NON-OCCUPATIONAL TRAINING
PROGRAMS—Non-occupational specific training programs such as: quality control, SPS, advanced statistics, employee assistance, quality of work life, etc.

Participants who responded to service area: 17
Participants who agreed: 13 (76.5%)
Participants who disagreed: 4 (23.5%)

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MEAN: 10.53   STANDARD DEVIATION: 5.27

Note. Dash represents data from questions not responded to by the participants.
Service Area 14—Round 3 Responses

SERVICE AREA: INFORMATION ON FEDERAL/STATE FUNDING—Information on funding for training obtainable from federal, state, and/or local sources.

Participants who responded to service area: 17
Participants who agreed: 17 (100.0%)
Participants who disagreed: 0 (00.0%)

Transformation of certainty scores chart

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MEAN: 14.82  STANDARD DEVIATION: 1.70

Note. Dash represents data from questions not responded to by the participants.
Table 42

Service Area 15—Round 3 Responses

SERVICE AREA: INFORMATION ON OHIO INDUSTRIAL TRAINING PROGRAM SERVICES—Information on services provided by OITP such as resources and services, amount of funding, funding categories, etc.

Participants who responded to service area: 15
Participants who agreed: 15 (100.0%)
Participants who disagreed: 0 (00.0%)

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MEAN: 12.93  STANDARD DEVIATION: 2.43

Note. Dash represents data from questions not responded to by the participants.
Table 43

Service Area 16--Round 3 Responses

SERVICE AREA: DECREASED TIME FOR PROJECT APPROVAL--Decrease the time of approval of project funding, which would cut down the time from identification of needs and development of a plan to the training program implementation.

Participants who responded to service area: 15
Participants who agreed: 15 (100.0%)
Participants who disagreed: 0 (00.0%)

Transformation of certainty scores chart

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MEAN: 12.87 STANDARD DEVIATION: 2.23

Note. Dash represents data from questions not responded to by the participants.
Service Area 17--Round 3 Responses

SERVICE AREA: FISCAL YEAR MATCH--The fiscal year of the funding agency should match the fiscal year used by industry.

Participants who responded to service area: 17
Participants who agreed: 11 (64.7%)
Participants who disagreed: 6 (35.3%)

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Mean: 9.18  Standard Deviation: 5.20

Note. Dash represents data from questions not responded to by the participants.
Table 45

Service Area 18—Round 3 Responses

SERVICE AREA: NEEDS ASSESSMENT TESTING/TESTS—Needs assessment tests and testing to better and more accurately determine training needs.

Participants who responded to service area: 17
Participants who agreed: 11 (64.7%)
Participants who disagreed: 6 (35.3%)

Transformation of certainty scores chart

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MEAN: 9.12   STANDARD DEVIATION: 5.58

Note. Dash represents data from questions not responded to by the participants.
APPENDIX Q

Survey Participants—Returned on Time

271
CONTACT PERSON: PERRY LAYTON
COMPANY NAME: ABEX CORP./DELAWARE
ADDRESS: 425 SOUTH SANDUSKY STREET
ADDRESS: DELAWARE, OH 43015
COMPANY PRODUCT: HYDRAULIC PUMPS, MOTORS AND VALVES

CONTACT PERSON: THOMAS R. WILSON
COMPANY NAME: ANCHOR SWAN
ADDRESS: BEAL AVENUE, P.O. BOX 311
ADDRESS: BUCYRUS, OHIO 44820
COMPANY PRODUCT: MFGS. GARDEN, AUTOMOTIVE & INDUSTRIAL HOSE, ETC.

CONTACT PERSON: PAT STILES
COMPANY NAME: ARROW MOLDED PLASTICS
ADDRESS: 800 CLINTON STREET
ADDRESS: CIRCLEVILLE, OH 43113
COMPANY PRODUCT: CUSTOM INJECTION MOLDED PLASTICS

CONTACT PERSON: BRUCE W. CLEMENTS
COMPANY NAME: ASC, INC.
ADDRESS: BAILEY ROAD-YOUNGSTOWN COMMERCE PARK
ADDRESS: NORTH JACKSON, OH
COMPANY PRODUCT: AUTO SPECIAL VEHICLE ASSEMBLY & CONVERSION

CONTACT PERSON: JOE GABRIEL
COMPANY NAME: AT&T NETWORK SYSTEMS
ADDRESS: 4200 EAST BROAD STREET
ADDRESS: COLUMBUS, OH 43213
COMPANY PRODUCT: NETWORK SYSTEMS, COMPONENTS, SOFTWARE FOR TELECOM.

CONTACT PERSON: DR. KENNETH LEWIS
COMPANY NAME: ATHENS CHEESEBARN
ADDRESS: PO BOX 870
ADDRESS: ATHENS, OH 45701
COMPANY PRODUCT: NATURAL, CHEESES
CONTACT PERSON: DAVID WITTMER
COMPANY NAME: AUTOMATIC PARTS, INC.
ADDRESS: P.O. BOX 1908 433 SPRINGHILL STREET
ADDRESS: MANSFIELD, OHIO 44901-1806
COMPANY PRODUCT: PRECISION SCREW MACHINE PRODUCTS

CONTACT PERSON: OIL EDMOND
COMPANY NAME: BABCOCK & WILCOX/TUBULAR PRODUCTS DIV./ALLIANCE
ADDRESS: 640 EAST KEYSTONE STREET
ADDRESS: ALLIANCE, OHIO 44601
COMPANY PRODUCT: WELDED TUBE OPERATION

CONTACT PERSON: WILLIAM BUTLER
COMPANY NAME: BINNEY CASTINGS CO.
ADDRESS: 2745 AVONDALE AVENUE
ADDRESS: TOLEDO, OH 43607
COMPANY PRODUCT: GLASS MOULDS AND CAST IRON

CONTACT PERSON: MIKE BAKOWSKY
COMPANY NAME: BUCKEYE RUBBER PRODUCTS, INC.
ADDRESS: 637-87 NORTH JACKSON STREET
ADDRESS: LIMA, OH 45805
COMPANY PRODUCT: INDUSTRIAL RUBBER PRODUCTS

CONTACT PERSON: CHESTER SPINKS
COMPANY NAME: CAPITAL DIE TOOL & MACHINING CO.
ADDRESS: 1058 BEARBORN DRIVE
ADDRESS: COLUMBUS, OH 43085
COMPANY PRODUCT: TOOL AND DIE CONTRACT MACHINERY

CONTACT PERSON: JOHN E. GREEN
COMPANY NAME: CARDINAL INDUSTRIES, INC.
ADDRESS: 6400 EAST BROAD STREET
ADDRESS: REYNOLDSBURG, OH 43068
COMPANY PRODUCT: BLDG COMPONENT MFG/NODULARS
CONTACT PERSON: RANDY KING
COMPANY NAME: CHRYSLER CORP./VAN WERT
ADDRESS: 1180 NEAR ROAD
ADDRESS: VAN WERT, OHIO 45891
COMPANY PRODUCT: MANUFACTURES COMPONENTS FOR APPLIANCES, AUTOS, ETC.

CONTACT PERSON: WILLIAM LOPPENJAMBS
COMPANY NAME: CINCINNATI ELECTRONICS CORP.
ADDRESS: 2430 GLENDALE-WILFORD ROAD
ADDRESS: CINCINNATI, OHIO 45241
COMPANY PRODUCT: MILITARY ELECTRONIC EQUIPMENT

CONTACT PERSON: BRUCE ERNEY
COMPANY NAME: CLOPAY CORP.
ADDRESS: 101 MILLER ROAD
ADDRESS: RUSSIA, OHIO 45360
COMPANY PRODUCT:

CONTACT PERSON: ALAN CHRISTOPHER
COMPANY NAME: COLUMBUS INDUSTRIES, INC.
ADDRESS: 2535 ST. RT. 75N., PO BOX 287
ADDRESS: ASHVILLE, OH 45303
COMPANY PRODUCT: AIR FILTERING

CONTACT PERSON: RANDALL A. GIBBONS
COMPANY NAME: CORNING GLASS WORKS, INC.
ADDRESS: P.O. BOX 90
ADDRESS: GREENVILLE, OHIO 45331
COMPANY PRODUCT: MANUFACTURE OF SPECIALTY GLASS

CONTACT PERSON: TIM KIRCHNER
COMPANY NAME: COSHOCTON FOODS
ADDRESS: 1950 SOUTH SECOND STREET
ADDRESS: COSHOCTON, OHIO 43812
COMPANY PRODUCT: BACON
CONTACT PERSON: DAVID YOUNG
COMPANY NAME: DAE INDUSTRIES, INC.
ADDRESS: SPRUCE & GREENWOOD STREETS
ADDRESS: BELLEFONTAINE, OHIO 45811
COMPANY PRODUCT: HIGH PRECISION AUTO & DIESEL ENGINE COMPONENTS

CONTACT PERSON: JAMES FISHER
COMPANY NAME: DAYTON STEEL SERVICES, INC.
ADDRESS: 3911 DAYTON PAK DRIVE
ADDRESS: DAYTON, OHIO 45414
COMPANY PRODUCT: STEEL PROCESSOR

CONTACT PERSON: THOMAS NOWICKI
COMPANY NAME: DAYTON WALTHER CORP.
ADDRESS: PO BOX 330
ADDRESS: PAYETTE, OH 43521
COMPANY PRODUCT: PRECISION HEAVY MACHINES FOR AUTO INDUSTRY

CONTACT PERSON: JACK BUTLER
COMPANY NAME: DEFIANCE CENTRAL FOUNDRY DIV./OMC
ADDRESS: ROUTE 281
ADDRESS: DEFIANCE, OHIO 43512
COMPANY PRODUCT: AUTOMOTIVE COMPONENTS

CONTACT PERSON: MS. LINDA BAKER
COMPANY NAME: DERBY MANUFACTURING
ADDRESS: 1876 DAYTON PIKE
ADDRESS: GREENVILLE, OHIO 45331
COMPANY PRODUCT:

CONTACT PERSON: WILLIAM J. MAXWELL
COMPANY NAME: DURIRON COMPANY, INC.
ADDRESS: 425 N. FINDLAY ST./PO BOX 1146
ADDRESS: DAYTON, OHIO 45401
COMPANY PRODUCT: CENTRIFUGAL PUMPS
CONTACT PERSON: J.O. ROBILLARD
COMPANY NAME: EATON CORP. FORGE DIVISION
ADDRESS: 1950 MARION ADDOSTA ROAD
ADDRESS: MARION ON 43302
COMPANY PRODUCT: FORGINGS AND AXLE SHAFTS FOR TRUCK & CONSTRUCTION

CONTACT PERSON: STEVE WILLIAMS
COMPANY NAME: ENGINETICS CORP.
ADDRESS: 4000 LISA DRIVE
ADDRESS: TIPP CITY, ON 45376
COMPANY PRODUCT: AEROSPACE COMPONENTS

CONTACT PERSON: DON RING
COMPANY NAME: FISHER BODY/ONC/ELYRIA
ADDRESS: PO BOX 4025
ADDRESS: ELYRIA, OH 44035
COMPANY PRODUCT: AUTOMOTIVE HARDWARE, PLASTIC AND FOAM PRODUCTS

CONTACT PERSON: JOHN FEIGHTNER
COMPANY NAME: FISHER BODY/ONC/COLUMBUS
ADDRESS: 2000 GEORGESVILLE ROAD
ADDRESS: COLUMBUS ON 43228
COMPANY PRODUCT: AUTO BODY PARTS

CONTACT PERSON: BILL MAKUCH
COMPANY NAME: FORD MOTOR CO./CLEVELAND
ADDRESS: PO BOX 9900
ADDRESS: CLEVELAND ON 44142
COMPANY PRODUCT: AUTO BODIES

CONTACT PERSON: PHILLIP M. ZAVRACKY
COMPANY NAME: FORMAN TOOL AND MFG. CO., INC.
ADDRESS: 1003 THIRD STREET
ADDRESS: FAIRPORT HARBOR, OHIO 44077
COMPANY PRODUCT: TOOLS, DIES, FIXTURING, GAGING, ETC.
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<td>ROBERT E. OILDBR8</td>
<td>Q &amp; B MANUFACTURING COMPANY</td>
<td>100 ADAMS STREET</td>
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<td>STAMPINGS AND TOOL AND DIE</td>
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<td>A.E. COOK</td>
<td>G.A. GRAY CO.</td>
<td>3611 WOODBURN AVE.</td>
<td>CINCINNATI, OH 45207</td>
<td>METAL CUTTING MACHINE TOOLS, BORING MILLS</td>
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<td>TERRY L. WEDDELE</td>
<td>ELASTIC CO.</td>
<td>4100 E. ERIE ST.</td>
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<td>THERMOSET INJECTION MOLDING</td>
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<td>FRED BAILEY</td>
<td>GOOD YEAR TIRE AND RUBBER CO./ST.NARYS</td>
<td>PO BOX 586</td>
<td>ST.NARYS, OH 43086</td>
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<td>GOOD YEAR TIRE AND RUBBER CO./LOGAN</td>
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CONTACT PERSON: SKIP HOLMES  
COMPANY NAME: GOOD YEAR TIRE AND RUBBER CO./JACKSON  
ADDRESS 1: 1020 E. MAIN ST.  
ADDRESS 2: JACKSON, OH 45640  
COMPANY PRODUCT: FIBERGLASS-REINFORCED PLASTIC

CONTACT PERSON: TIM SHROVER  
COMPANY NAME: HARRISON RADIATOR/GMC  
ADDRESS 1: 300 TAYLOR STREET, PO BOX 934  
ADDRESS 2: DAYTON, OH 45461  
COMPANY PRODUCT: MFGS. AUTOMOTIVE PARTS

CONTACT PERSON: EDWARD ZANER  
COMPANY NAME: HARVEY HUBBELL, INC.  
ADDRESS 1: 50 EDWARDS ST  
ADDRESS 2: MADISON, OH 44067  
COMPANY PRODUCT: HEAVY-DUTY EQUIPMENT TO MONITOR MOTORS/MINING MAT.

CONTACT PERSON: H.R. WILLIAMS  
COMPANY NAME: HI-STAT  
ADDRESS 1: 345 SOUTH MILL STREET  
ADDRESS 2: LEXINGTON, OH 43037

CONTACT PERSON: TRENTON G. BELL  
COMPANY NAME: HOBART BROTHERS COMPANY  
ADDRESS 1: HOBART SQUARE  
ADDRESS 2: TROY, OHIO 45373  
COMPANY PRODUCT: WELDING SYSTEMS/BATTERY CHARGERS/AIRCRAFT SYSTEMS

CONTACT PERSON: JAMES MIRTH  
COMPANY NAME: HOLLANDER INDUSTRIES CORP.  
ADDRESS 1: 219 KELLY AVENUE  
ADDRESS 2: DAYTON, OHIO 45404
CONTACT PERSON: FRED LIDWIG
COMPANY NAME: IMPERIAL CLEVITE
ADDRESS: 1760 BEARING ROAD
ADDRESS: BRIDGEPORT, OHIO 43912
COMPANY PRODUCT: STAMPING/MACHINING COMBUSTION ENGINE BEARINGS

CONTACT PERSON: LARRY KERR
COMPANY NAME: INTERNATIONAL FOILS, INC.
ADDRESS: 2081 NC CREA ST
ADDRESS: ALLIANCE OH 44601
COMPANY PRODUCT: LIGHT GAUGE MATERIALS

CONTACT PERSON: GERALD F. CAMERON
COMPANY NAME: ITT NIGGIE MFG. CO./ARCHBOLD
ADDRESS: LUDBILL ROAD
ADDRESS: ARCHBOLD, OHIO 43502
COMPANY PRODUCT: STEEL TUBING FOR THE AUTOMOTIVE INDUSTRY

CONTACT PERSON: ED SIEBEN
COMPANY NAME: ITT POWER SYSTEMS INC.
ADDRESS: PO BOX 888
ADDRESS: GALION, OH 44833
COMPANY PRODUCT:

CONTACT PERSON: DONALD STRANBER
COMPANY NAME: JACKSON CORP.
ADDRESS: 818 SOUTH BENNETT AVE.
ADDRESS: JACKSON, OH 45640
COMPANY PRODUCT: PLASTIC PARTS/CUSTOM INJECTION MOLDING PROCESS

CONTACT PERSON: ROGER KLINGLER
COMPANY NAME: KELSEY-HAYES CO./MT. VERNON
ADDRESS: BLACKJACK ROAD, ROUTE 4
ADDRESS: MT. VERNON, OH 43050
COMPANY PRODUCT:
CONTACT PERSON: DENNIS SABOL  
COMPANY NAME: KENNAMETAL, INC.  
ADDRESS: 3430 SOLON ROAD  
ADDRESS: SOLON OH 44139  
COMPANY PRODUCT: CUTTING TOOLS & RELATED EQUIPMENT

CONTACT PERSON: NATALIE O'SULLIVAN  
COMPANY NAME: KINSTMCO, INC.  
ADDRESS: KINSMAN ROAD  
ADDRESS: NEPBURY, OH 44068  
COMPANY PRODUCT:

CONTACT PERSON: MARK B. MATHISEN  
COMPANY NAME: LUDLOW PACKAGING  
ADDRESS: MADISON STREET  
ADDRESS: MT. VERNON, OH 43050  
COMPANY PRODUCT: NFOS. FLEX. PACKAGING MATERIALS/NURSERY/DRUGS, ETC.

CONTACT PERSON: LEO JORDAN  
COMPANY NAME: LYTON, INC.  
ADDRESS: 3870 IMAGE DR.  
ADDRESS: DAYTON, OH 45414  
COMPANY PRODUCT: CONTRACT ELECTRONIC MANUFACTURING

CONTACT PERSON: DIAN ANZIVINO  
COMPANY NAME: MODERN WINDOW AND AWNING CO.  
ADDRESS: 360 FEDERAL PLAZA EAST  
ADDRESS: YOUNGSTON ON 44503  
COMPANY PRODUCT: NFOS. STORM DOORS AND WINDOWS

CONTACT PERSON: HOWARD MOORE  
COMPANY NAME: MONARCH MARKING SYSTEMS  
ADDRESS: PO BOX 608  
ADDRESS: DAYTON OH 45401  
COMPANY PRODUCT: TICKETS, TAGS, LABELS
CONTACT PERSON: DAVE SCHEINFURTH
COMPANY NAME: NEW DEPARTURE HYATT BEARINGS/GMC
ADDRESS: 2800 BAYES AVE.
ADDRESS: SANDUSKY OH 44870
COMPANY PRODUCT: AUTOMOBILE BEARINGS

CONTACT PERSON: KEN WELCH
COMPANY NAME: NORTHEAST BOX CO.
ADDRESS: PO BOX 269, 1726 GRISWOLD RD.
ADDRESS: ASHTABULA, OH 44004
COMPANY PRODUCT: CORRUGATED BOXES

CONTACT PERSON: CARL DIXON
COMPANY NAME: OCCIDENTAL CHEMICAL CORP. DURUX
ADDRESS: 13717 S.R. 68 SOUTH PO BOX 266
ADDRESS: KENTON, OH 43326
COMPANY PRODUCT: PHENOLIC MOLDING COMPOUNDS AND RESINS

CONTACT PERSON: ALAN H. BLOSSER
COMPANY NAME: OWENS-CORNING FIBERGLASS/TOLEDO
ADDRESS: FIBERGLASS TOWER T/S
ADDRESS: TOLEDO OH 43699
COMPANY PRODUCT: FIBERGLASS PRODUCTS/AUTO INDUSTRY

CONTACT PERSON: DAVID MARSHALL
COMPANY NAME: OWENS-ILLINOIS, INC/COLUMBUS
ADDRESS: 711 SOUTHWOOD AVE
ADDRESS: COLUMBUS OH 43207
COMPANY PRODUCT: GLASS ENCLOSURES FOR TV PICTURE TUBES

CONTACT PERSON: ANTHONY JASINSKI
COMPANY NAME: PACKARD ELECTRIC/GMC/RAVENNA
ADDRESS: 5245 S. PROSPECT
ADDRESS: RAVENNA OH 44266
COMPANY PRODUCT: AUTOMOTIVE POLYMERS
CONTACT PERSON: JOHN BADOBECK
COMPANY NAME: FILLID CO.
ADDRESS: 303 CHURCH ST
ADDRESS: SHANTON, OH 48558
COMPANY PRODUCT: GENERAL MACHINING/TRACTOR, TRUCK, OFF-ROAD O.E.M.

CONTACT PERSON: PAUL MANLEY
COMPANY NAME: PIONEER/LETTS INDUSTRIES, INC.
ADDRESS: PO BOX 918, INDUSTIAL AVE.
ADDRESS: PIONEER, OHIO 45884
COMPANY PRODUCT: STEEL-FORGED PRODUCTS

CONTACT PERSON: JOHN LINKHAM
COMPANY NAME: PLASTICOLORS, INC.
ADDRESS: 2600 MICHIGAN AVE., PO BOX 818
ADDRESS: ASHTABULA, OH 44004
COMPANY PRODUCT: MFG. PASTE PIGMENT DISPERSIONS

CONTACT PERSON: N. DON
COMPANY NAME: POLYMER RAYMOND, INC.
ADDRESS: 10730 SOUTH MADISON ROAD
ADDRESS: MIDDLEFIELD, OH 44062
COMPANY PRODUCT: MOLDED/EXTRUDED RUBBER PRODUCTS/EXTRUDED PLASTICS

CONTACT PERSON: DAVID KLEKNER
COMPANY NAME: REPUBLIC STEEL CORP./UNION DRAWN
ADDRESS: 265 WETMORE AVE., SE
ADDRESS: MASSILLON, OH 44646
COMPANY PRODUCT: COLD FINISHED BARS

CONTACT PERSON: W.N. HARRIS
COMPANY NAME: REPUBLIC STEEL CORP./MARCHING VALLEY
ADDRESS: 1050 PINE AVE., G.W.
ADDRESS: WARRREN, OH 44481
COMPANY PRODUCT: PLAIN CARBON FLAT ROLLED SHEET AND STRIP STEEL
CONTACT PERSON: RICHARD E. STILGENBAUER
COMPANY NAME: SANDUSKY PLASTICS, INC.
ADDRESS: 400 BROADWAY
ADDRESS: SANDUSKY, OH 44870
COMPANY PRODUCT: POLYSTYRENE CONTAINERS

CONTACT PERSON: LARRY SAY
COMPANY NAME: SHARON TUBE CO.
ADDRESS: 1000 HUNTER ST.
ADDRESS: NILES, OH 44446

CONTACT PERSON: ROBERT WILLOUGHBY
COMPANY NAME: STOLLE CORP.
ADDRESS: 1001 MICHIGAN ST
ADDRESS: SIDNEY, OH 45365

CONTACT PERSON: DONALD SPANGLER
COMPANY NAME: SUPERIOR DIE, TOOL & MACHINE CO.
ADDRESS: 1438 PARSONS AVE
ADDRESS: COLUMBUS, OH 43207
COMPANY PRODUCT: TOOL, DIES, JIGS, GAUGES, FIXTURES & SPEC. MACH.

CONTACT PERSON: DANIEL PORTMAN
COMPANY NAME: TECH-FORMS INDUSTRIES
ADDRESS: 15 E. SMILY AVE
ADDRESS: SHELBY, OH 44876
COMPANY PRODUCT: TUBULAR EXHAUST SYSTEMS FOR AUTOS/LIGHT TRUCKS

CONTACT PERSON: MICHAEL SHOWDEN
COMPANY NAME: TELEDYNE MONARCH RUBBER CORP.
ADDRESS: 10 LINCOLN PARK
ADDRESS: HARTVILLE, OH 44632
COMPANY PRODUCT: RUBBER/METAL ASSEMBLIES/AUTO INDUSTRY
CONTACT PERSON: REASON D. SHEPPARD
COMPANY NAME: THERMAL ENERGY TRANSFER CORP.
ADDRESS : 1200 U.S. ROUTE 41, NORTH
ADDRESS : DELAWARE, OH 43015
COMPANY PRODUCT :

CONTACT PERSON: J.J. ANDERSON
COMPANY NAME: TRANSUE & WILLIAMS
ADDRESS : 882 WEST ELY STREET
ADDRESS : ALLIANCE OH 44601
COMPANY PRODUCT : MANUFACTURES STEEL FORGINGS

CONTACT PERSON: EDWARD C. SWALLO
COMPANY NAME: TRUE SHAPES, INC.
ADDRESS : 4150 FOREST HEIGHTS DR
ADDRESS : STOW OH 44224
COMPANY PRODUCT : SHAPED WIRE PRODUCTS FOR OPTICAL INDUSTRY

CONTACT PERSON: DREW FRECKA
COMPANY NAME: ULTRA-TECH PLASTICS, INC.
ADDRESS : 40 S. AIRPORT RD.
ADDRESS : MANSFIELD OH 44903
COMPANY PRODUCT : BLOWN FILMS PLASTICS

CONTACT PERSON: D.J. TESTON
COMPANY NAME: UNION CARBIDE/LINDE/L-TEC
ADDRESS : PO BOX 710
ADDRESS : ASHTABULA OH 44004
COMPANY PRODUCT : WELDING WIRE

CONTACT PERSON: ELGIN VAN METER
COMPANY NAME: VALLEY CITY STEEL CO
ADDRESS : STEEL DRIVE
ADDRESS : VALLEY CITY, OH 44140
COMPANY PRODUCT : STEEL PICKLING, SLITTING AND ROLLING
CONTACT PERSON: LYNN MC ANINCE  
COMPANY NAME: VOLVO WHITE TRUCK CORP.  
ADDRESS : 1345 N. MAIN ST./PO BOX 903  
ADDRESS : ORRVILLE, OH 44667  
COMPANY PRODUCT : STEEL AND ALUMINUM TRUCK CABS

CONTACT PERSON: CHARLES NC KEE  
COMPANY NAME: WEAR-EVER ALUMINUM, INC.  
ADDRESS : 1080 EASTERN AVE.  
ADDRESS : CHILlicothe, OH 45601  
COMPANY PRODUCT : ALUMINUM COOKWARE/SMALL ELECTRICAL APPLIANCES

CONTACT PERSON: ARNOLD MORRIS  
COMPANY NAME: WEATHERBEE COATS, INC.  
ADDRESS : 101 E. FEDERAL ST.  
ADDRESS : YOUNGSTOWN OH 44503  
COMPANY PRODUCT : GARMENTS

CONTACT PERSON: JACK GUESS  
COMPANY NAME: WHITE ENGINEER, INC.  
ADDRESS : 101 11TH STREET, E.E.  
ADDRESS : CANTON OH 44705  
COMPANY PRODUCT : MFG.GASOLINE & DIESEL ENGINES FOR COMM./MILITARY

CONTACT PERSON: DON YODER  
COMPANY NAME: YODER INDUSTRIES  
ADDRESS : 2820 NEEDMORE ROAD  
ADDRESS : DAYTON, OH 45414  
COMPANY PRODUCT : 
APPENDIX R

Survey Participants--Late Returns
CONTACT PERSON: ROBERT SAVAGE
COMPANY NAME: ACCURACY CORP.
ADDRESS: 650 ACKERMAN ROAD
ADDRESS: COLUMBUS, OH 43208
COMPANY PRODUCT: COMPUTER APPLICATIONS/PROCESS AUTOMATION FOR MFG.

CONTACT PERSON: SEYMOUR B. STEIN
COMPANY NAME: ADVANCED TECHNOLOGY CORP.
ADDRESS: 631 FACTORY ROW
ADDRESS: GENEVA, OH 44041
COMPANY PRODUCT: AUTO PARTS, MEDICAL DIAGNOSTIC & TREATMENT EQUIP.

CONTACT PERSON: MARTHA KEITH
COMPANY NAME: AMERICAN ELECTRIC PRODUCTS CO.
ADDRESS: 653 LIDA
ADDRESS: MANSFIELD, OH 44903
COMPANY PRODUCT: PRECISION SCREW MACHINE PRODUCTS

CONTACT PERSON: MAN BAKER
COMPANY NAME: BERKELEY-SMALL MANUFACTURING CO.
ADDRESS: 300 LAKE DRIVE
ADDRESS: MEDINA, OHIO 44256
COMPANY PRODUCT: INDOOR AND OUTDOOR NEWSPAPER RACKS

CONTACT PERSON: ROBERT BERNING
COMPANY NAME: BRYAN CUSTOM PLASTICS, INC.
ADDRESS: 306 S. UNION PO BOX 966
ADDRESS: BRYAN, OH 43506
COMPANY PRODUCT: INJECTION MOLDING/PAINTING/FINISHING/ASSEMBLY

CONTACT PERSON: WILLIAM FRENCH
COMPANY NAME: CHARDON METAL PRODUCTS CO.
ADDRESS: 800 FIFTH AVENUE
ADDRESS: CHARDON, OHIO 44024
COMPANY PRODUCT: TURN MACHINE PARTS & FABRICATED TUBE PARTS/BRAKES
CONTACT PERSON: ALAN JOHNSON
COMPANY NAME: CHARDON RUBBER CO.
ADDRESS: 373 WASHINGTON STREET
ADDRESS: CHARDON, OH 44024
COMPANY PRODUCT: MOLDED & EXTRUDED RUBBER & PLASTIC PARTS

CONTACT PERSON: LYNAN H. GOFF
COMPANY NAME: CHASE BAG CO.
ADDRESS: 1802 NEBRASKA AVE, PO BOX 887
ADDRESS: TOLEDO, OH 43607
COMPANY PRODUCT: MULTIWALL BAGS FOR CHEMICAL, FOOD, BUILDING PRODS.

CONTACT PERSON: A. J. SCHOLL
COMPANY NAME: CHRYSLER PLASTIC PRODUCTS
ADDRESS: 3130 WEST MONROE STREET
ADDRESS: SANDUSKY, OHIO 44870
COMPANY PRODUCT: VINYL PRODUCTS

CONTACT PERSON: MARK THOMPSON
COMPANY NAME: COPPERMELD/OHIO STEEL TUBE CO.
ADDRESS: 131 VERNON ROAD
ADDRESS: SHELBY, OHIO 44875
COMPANY PRODUCT: STEEL TUBING

CONTACT PERSON: JOHN RIMONY
COMPANY NAME: D-CON COMPANY INC.
ADDRESS: 13155 FISHER AVE, N.E.
ADDRESS: ALLIANCE ON 44601
COMPANY PRODUCT: HOUSEHOLD PRODUCTS (RODENTICIDE) COMPOSITE CANS

CONTACT PERSON: ROBERT A WANNER
COMPANY NAME: D.L. AULD CO.
ADDRESS: 1809 NORTH 5TH STREET
ADDRESS: COLUMBUS, OHIO 43201
COMPANY PRODUCT: DECORATIVE EMBLEMS/WNAMEPLATES PRIMARILY FOR AUTO
CONTACT PERSON: LEE BROWNELL
COMPANY NAME: DELCO PRODUCTS/GMC
ADDRESS : 2000 FORER BLVD./PO BOX 1042
ADDRESS : DAYTON, OHIO 45401
COMPANY PRODUCT : AUTOMOTIVE COMPONENTS

CONTACT PERSON: EARL WILSON
COMPANY NAME: DOVER CORP.
ADDRESS : 5000 BROTHERTON ROAD
ADDRESS : CINCINNATI, OH 45209
COMPANY PRODUCT : MFG. OF COMMERCIAL AND RESIDENTIAL ELEVATORS

CONTACT PERSON: HARRY PRINCE
COMPANY NAME: DREW SHOE CORP.
ADDRESS : 282 QUARRY ROAD
ADDRESS : LANCASTER, OHIO 45130
COMPANY PRODUCT : WOMEN'S SHOES

CONTACT PERSON: GEORGE CAMPBELL
COMPANY NAME: EATON CORP. FASTENER DIVISION
ADDRESS : 240 FOURTH STREET
ADDRESS : MASSILLON OH 44646
COMPANY PRODUCT : SPRING STEEL PRODUCTS

CONTACT PERSON: DAVE BALLANTYNE
COMPANY NAME: ELKEN METALS CO.
ADDRESS : P.O. BOX 40
ADDRESS : ASHTABULA, OH 44004
COMPANY PRODUCT :

CONTACT PERSON: JAMES YOKOUN
COMPANY NAME: ELTECH SYSTEMS, INC.
ADDRESS : 470 CENTER STREET
ADDRESS : CHARDON OH 44024
COMPANY PRODUCT : ELECTROCHEMICAL TECHNOLOGY AND PRODUCTS
CONTACT PERSON: ALBERT HUSEGO
COMPANY NAME: EMCO WHEATON, INC.
ADDRESS: P.O. BOX 688, CRAWFORDLAIN BLVD.
ADDRESS: CONNEAUT, OH 44020-0680
COMPANY PRODUCT:

CONTACT PERSON: LINDA BAKER
COMPANY NAME: ERNIE GREEN INDUSTRIES
ADDRESS: 600 ALBERT RD.
ADDRESS: BROOKVILLE, OH 45309
COMPANY PRODUCT: AUTOMOTIVE COMPONENTS

CONTACT PERSON: BILL REMINGTON
COMPANY NAME: F. E. MYERS CO.
ADDRESS: 400 ORANGE ST.
ADDRESS: ASHLAND, OHIO 44805
COMPANY PRODUCT: INDUSTRIAL PUMPS AND SPRAYERS

CONTACT PERSON: ROBERT JONES
COMPANY NAME: FISHER BODY/ONC/EUCLID
ADDRESS: 300001 EUCLID AVE
ADDRESS: EUCLID, OH 44117
COMPANY PRODUCT: AUTOMOBILE INTERIOR TRIM PARTS

CONTACT PERSON: DENNIS JETTER
COMPANY NAME: FORT RECOVERY INDUSTRIES, INC.
ADDRESS: 2440 STATE ROUTE 49
ADDRESS: FORT RECOVERY, OH 45946
COMPANY PRODUCT: PLUMBING PARTS, PLASTIC CONTAINERS

CONTACT PERSON: DONALD L. BOWMAN
COMPANY NAME: G F FURNITURE SYSTEMS, INC.
ADDRESS: 229 E. DENNICK AVE
ADDRESS: YOUNGSTOWN, OH 44501
COMPANY PRODUCT: OFFICE FURNITURE
CONTACT PERSON: JACk ARCur
COMPANY NAME: GOOD YEAR TIRE AND RUBBER CO./MARYSVILLE
ADDRESS : 13601 INDUSTRIAL PARKWAY
ADDRESS : MARYSVILLE, OH 43040-9500
COMPANY PRODUCT : CONVEYOR BELTING, TANK LINING, RUBBER ROOFING PRO.

CONTACT PERSON: JOHN T. RONAN
COMPANY NAME: INTERNATIONAL HARVESTER CO./COLUMBUS
ADDRESS : 900 MANOR PARK DRIVE
ADDRESS : COLUMBUS, OH 43212
COMPANY PRODUCT : FIBERGLASS PARTS FOR TRUCKS AND AUTOS

CONTACT PERSON: LARRY B. JENKINS
COMPANY NAME: KTH PARTS INDUSTRIES, INC.
ADDRESS : 1111 NORTH ST. RT. 335
ADDRESS : ST. PARIS, OHIO 43072
COMPANY PRODUCT : STEEL AUTO PARTS

CONTACT PERSON: PHILIP JONES
COMPANY NAME: MARLEY PUMP CO./HYDROMATIC PUMPS
ADDRESS : 1840 BANKE RD.
ADDRESS : P.O. BOX 337 44803
COMPANY PRODUCT :

CONTACT PERSON: BARBARA DRAKE
COMPANY NAME: MODINE MANUFACTURING CO
ADDRESS : 416 BIERLEY AVE
ADDRESS : PEMBERVILLE, OH 43440
COMPANY PRODUCT : HEAVY DUTY BOLTED RADIATORS

CONTACT PERSON: ROBERT RITCHIE
COMPANY NAME: NATIONAL ALUMINUM CORP.
ADDRESS : MOBLE INDUSTRIAL PK. RT 4
ADDRESS : CALDWELL, OH 43724
COMPANY PRODUCT : LAMINATED ALUMINUM FOIL
CONTACT PERSON: HIROYUKI KONO
COMPANY NAME: REATON AUTO PRODUCTS MANUFACTURING, INC.
ADDRESS: 970 S. FRANKLIN ST
ADDRESS: EATON OH 45320
COMPANY PRODUCT: AUTO COMPONENTS

CONTACT PERSON: BARBARA ROBERTSON (NOT THERE NOW)
COMPANY NAME: OWENS-ILLINOIS/CLOSURE DIVISION
ADDRESS: 1550 TOMAHAWK DRIVE
ADDRESS: WAUKEE IA 50169
COMPANY PRODUCT: PLASTIC PUMP TYPE TOOTHPASTE DISPENSERS

CONTACT PERSON: ROBERT PIZZURRO
COMPANY NAME: PARKER-HANNIFIN/PARPLEX OPERATIONS/RAVENNA
ADDRESS: 1360 NORTH FREEDOM ST.
ADDRESS: RAVENNA OH 44866
COMPANY PRODUCT: THERMOPLASTIC ROSE

CONTACT PERSON: J. K. OELSLAGER
COMPANY NAME: PARKER-HANNIFIN/FILTER DIVISION
ADDRESS: 16810 FULTON CO. RD. 88
ADDRESS: METARORA OH 43040
COMPANY PRODUCT: HYDRAULIC/LUB OIL FILTERS

CONTACT PERSON: GARY LAYMAN
COMPANY NAME: PAB-TIX USA, INC.
ADDRESS: 810 B. RIVERVIEW
ADDRESS: MIAMISBURG OH 45342
COMPANY PRODUCT: PLASTIC INJECTION MOLDING/PRODUCT ASSEMBLY

CONTACT PERSON: J. R. TAYLOR
COMPANY NAME: PIERRAIGHT AIRLINES
ADDRESS: DAYTON INTERNATIONAL AIRPORT
ADDRESS: VANDALIA OH 45379
COMPANY PRODUCT: AIRPLANE TRANSPORTATION
CONTACT PERSON: DOUGLAS LITTICK
COMPANY NAME: PIQUA ENGINEERING
ADDRESS: PO BOX 606
ADDRESS: PIQUA OH 45356
COMPANY PRODUCT: ELECTRONICS AEROSPACE PRODUCTS

CONTACT PERSON: MARJORIE J. STEPPENSEN
COMPANY NAME: POLYSAR, INC./RESINS DIVISION
ADDRESS: PO BOX 6119
ADDRESS: AKRON, OH 44310
COMPANY PRODUCT: POLYSTYRENE RESINS

CONTACT PERSON: J. SHAW
COMPANY NAME: PROFESSIONAL HEATING AND AIR CONDITIONING CORP.
ADDRESS: 7303 VINE ST.
ADDRESS: CINCINNATI OH 45216
COMPANY PRODUCT: WELDING FABRICATION AND SHEET METAL PRODUCTS

CONTACT PERSON: TED BLOCK
COMPANY NAME: PROJECTS UNLIMITED, INC.
ADDRESS: 3680 WYKE RD.
ADDRESS: DAYTON OH 45414
COMPANY PRODUCT: WIRING HARNESS/RELAYS/PRINTED CIRCUIT BOARDS

CONTACT PERSON: DICK WHEELER
COMPANY NAME: R & J MACHINE, INC.
ADDRESS: PO BOX 486/OLD US 50
ADDRESS: SOUTH POINT OH 45280
COMPANY PRODUCT: HYDRAULIC MANIFOLDS

CONTACT PERSON: HANS WAGNER
COMPANY NAME: RITTAL CORP.
ADDRESS: PO BOX 1284/1900 E. LEFFEL LANE
ADDRESS: SPRINGFIELD, OH 45505
COMPANY PRODUCT: METAL CONTAINERS
CONTACT PERSON: JEROME D. BENNETT
COMPANY NAME: RNI CO.
ADDRESS: PO BOX 400
ADDRESS: ASHTABULA, OH 44004
COMPANY PRODUCT: TITANIUM METAL

CONTACT PERSON: ROBERT SCHNIPPMICK
COMPANY NAME: SCHLEGEL WEST UNITY, INC.
ADDRESS: 914 DEFIANCE ST
ADDRESS: WEST UNITY, OH 43570
COMPANY PRODUCT: DOOR AND TRUCK LID SEALS FOR ORIGINAL EQUIPMENT

CONTACT PERSON: TIMOTHY DE RAN
COMPANY NAME: SHELLER-GLOBE CORP.
ADDRESS: 447 E. WALNUT ST.
ADDRESS: MAUSSON, OH 43547
COMPANY PRODUCT: METAL STAMPINGS/FABRICATIONS/ASSEMBLIES

CONTACT PERSON: JAMES C. FANELLO
COMPANY NAME: SHEILICH CORP.
ADDRESS: PO BOX 2037 402 5TH AV
ADDRESS: MANSFIELD OH 44905
COMPANY PRODUCT: METAL STAMPINGS

CONTACT PERSON: MARY KNOTH
COMPANY NAME: TAPE TECH, INC.
ADDRESS: 4880 WADSWORTH RD
ADDRESS: DAYTON OH 45414
COMPANY PRODUCT:

CONTACT PERSON: VINOD GUPTA
COMPANY NAME: TECHNOCAST, INC.
ADDRESS: 1106 N MAIN ST
ADDRESS: ORRVILLE OH 44667
COMPANY PRODUCT: METAL CASTINGS
CONTACT PERSON: ROBERT J. BARTON
COMPANY NAME: TELEDYNE, OHIO STEEL
ADDRESS: PO BOX F FOURTH ST
ADDRESS: LIMA OH 45802
COMPANY PRODUCT: CAST IRON AND STEEL ROLLS

CONTACT PERSON: JEROME F. PERRONE
COMPANY NAME: TRW/MOTOR DIVISION
ADDRESS: 1784 STANLEY AV
ADDRESS: DAYTON OH 45406
COMPANY PRODUCT: SUB-FRACTIONAL HORSE-POWER MOTORS, ETC.

CONTACT PERSON: THOMAS A. IVY
COMPANY NAME: TWIN PANE CORP.
ADDRESS: WEST UNITY INDUSTRIAL PK.
ADDRESS: WEST UNITY, OH 43570
COMPANY PRODUCT: DOUBLE PANED INSULATED GLASS

CONTACT PERSON: CHESTER CARPENTIER
COMPANY NAME: XTEK, INC.
ADDRESS: 811 TOWNSHIP AVE.
ADDRESS: CINCINNATI, OH 45216
COMPANY PRODUCT: HARDENED STEEL GEARS/MECHANICAL DRIVES, ETC.
LIST OF REFERENCES


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Training and economic development: the impact of industry-specific training on business and the economy of New York State. Albany, N.Y.: The University of the State of New York, The State Education Department, Office of Occupational and Continuing Education.

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