
APPENDIX D:

Promising Practices in Workforce Development: A National Scan



BALL STATE
UNIVERSITY.

*Coordinated by Ball State University
with funding provided by Central
Indiana Corporate Partnership*

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INDIANA MANUFACTURING EDUCATION AND TRAINING INITIATIVE

*Promising Practices in Workforce
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Promising Practices in Workforce Development: A National Scan¹

This report presents the results of an analysis of about three hundred education and training programs, workforce development organizations, and services in education institutions from across the country. By no means is it our intention to present information on all of these programs or to produce an inventory of such a wide variety of programs and services. Good programs come and go; inventories pass out of date as soon as they are distributed. Our report does summarize the key observations from our reviews and offers examples of practices that we believe contribute to successful education and training services. These are practices we believe the Central Indiana Corporate Partnership, should consider as elements of programs that produce outstanding results and as guideposts in the design of new programs in Indiana. The data collection procedures and criteria we used to analyze the programs and identify key features are presented below.

Introduction

As part of the research into the Central Indiana workforce development system, the project team also carried out a “scan” of interesting and well regarded manufacturing focused employment and training programs around the county. In this part of the project, the goal was two-fold. Our first goal was to identify discrete promising practices among employment and training programs and organizations that would offer relevance to our recommendations to the Central Indiana Corporate Partnership. In pursuit of this goal we sought to identify key factors that seemed to underlie or support the success of education and training services. By identifying them, we expected to make critical observations and recommendations about incorporating their key elements into our recommendations.

This is quite different than identifying and recommending adoption of a whole program or a very specific programmatic approach. The development of successful programs almost always includes idiosyncratic elements supporting success, which cannot be duplicated readily, as well as elements from which we can take important and replicable lessons. Idiosyncratic success tends to involve reliance on strong and committed leadership (as a driving force of success) or special interests from fund providers (willing to maintain and nurture a programmatic effort). Important transferable lessons tend to come from fundamental operating structures or innovative designs that show imagination and effective responses to specific conditions. In this scan, we concentrate upon the latter fundamental structures, transferable features common to successful programs.

¹ A majority of the research and data collection was conducted by Michael Sable, FutureWorks, Arlington, Massachusetts.

Our interest in these success factors is to identify and highlight practices within each that support the effective and innovative delivery of education and training services. It is well beyond the scope of this project to *evaluate* programs on these (or any other) factors as we have had no means of independently assessing program claims or developing data on quantified measures for each of these factors. We have been interested in looking at these factors as a way of guiding our attention to some program elements that have relevance for the implementation of recommendations to our client.

The second major goal of the scan is to illuminate the national education and training environment and the leading directions of programs and organizations in the field. The employment and training field is quite diverse; many varieties of programs and services are offered. In particular, employment and training programs vary by target markets or populations and leadership. For example, federal employment and training policy and program funding have, for many years, been driven by the goal of helping disadvantaged individuals enter the labor market and find jobs. The targets (and thus the service design) for programs within the federal system have been *eligible* individuals and their needs. In contrast, other programs may focus on the needs of an industry and offer training in skills required by jobs in a company to individuals regardless of their personal needs or population characteristics; among these, the factors driving the design of the program are the characteristics of need within an industry or labor market.

We developed four categories of programs in order to make more sense of this variety. These categories—*categorical, partnerships, industry/employer sponsored, and brokerage*-- distinguish different types of programs by what we feel are fundamentally determining characteristics; to a large degree funding stream, target populations and governance/ownership define these categories. These four classifications comprise different ways and reasons education and training services are delivered to people and to companies. The categories are defined in the table below:

Table 1

Classifications of Education and Training Programs

<p>Categorical</p>	<p><i>Major features of categorical programs are their emphases on enrolling and training individuals based on eligibility criteria as defined by the principal funding source such as: disadvantaged status, dislocated worker, economic status, or age (youth or older workers). Programs are generally operated under contract between a funding source and training provider and services are generally free to eligible participants. Employers may or may not be involved in the design or delivery of training. Training providers are also usually involved in job placement.</i></p>
<p>Partnerships</p>	<p><i>Partnership programs often are operated by training providers and involve employers (and often a single company) as key stakeholders in the design and delivery of training. Training may be designed for incumbent workers or new workers at a specific location or industry. Programs are often funded by a combination of public and private funds but mainly rely on public funding mechanisms. The training is often designed for specific skills and delivered within a limited period.</i></p>
<p>Industry/ Employer Sponsored</p>	<p><i>Key feature of industry-sponsored programs is the creation of an organization often initiated by a group of private stakeholders. Usually a goal of the stakeholders is to develop and sustain a training organization beyond a specific outcome or funding period. Industry/Employer programs are often consortia, organized with a business led structure and governance. May or may not represent a specific industry and can, for example, be regionally defined. Consortia often have staff employed by the consortia members. They are often organized and supported by multiple funding mechanisms (usually involving multiple funding sources).</i></p>
<p>Brokerage/ Intermediaries</p>	<p><i>Brokerage programs operate as intermediaries bringing providers and consumers together to meet skill development needs within a company or group of companies. Brokers may or may not be employed by industry or government, but a key feature is their independence from a specific training program or organization and the formal mandate to “find” assistance for employers in curricula design, obtaining funding for training and identifying training providers. Training is one of the services a broker might offer to a company; some brokers provide general assistance to companies including training services.</i></p>

In classifying the programs, research staff also reviewed the program descriptions relative to eight factors of relevance. Based on the information and description of the program we decided whether or not to gather additional information about the program and conduct interviews with program personnel. The factors of relevance helped us

make the decision that some programs merited more in-depth analysis because of some outstanding feature or innovative approach to an identified need. These factors are:

- **Scale**. The program serves large enough numbers of people (relative to its target market) to make a difference.
- **Longevity**. The program has been in operation long enough to demonstrate its ability to survive, to deliver services over time, to generate a reliable revenue stream, and to demonstrate sustained involvement of target markets.
- **Governance**. There are clear leadership roles for constituencies.
- **Types of training**. The program has a well-defined set of services that could include generic skills training (e.g. basic skills) to more specific types of technical training.
- **Scope**. The program provides training and education targeted to an industry or region.
- **Funding**. The program has developed sufficient funding to maintain itself over time.
- **Innovation**. The program has been recognized for innovation or demonstrated innovative approaches to occupational training and education.
- **Impact**. The program can demonstrate effectiveness in meeting needs expressed by its constituencies.

The final step in the scan was to gather additional in-depth information on some programs and to present information on some of these programs in more depth. We gathered this information through reviewing additional published material and through telephone interviews with key personnel.

Our report is organized by the four categories and we discuss interesting program features in each of the categories. From the distance of summary description most employment and training services look pretty much the same, especially programs which are subject to requirements of national funding sources like WIA programs. Rather than repetitive descriptions of detail, use of the four categories allow us to focus on their unique and innovative features. These points reflect our observations on some of the key directions and features of different kinds of education and training programs.

Before addressing specific programs, we first want to present some global observations. We see new directions and movement in the organization of education and training programs for career skills in each type of program we examined whether they are designed for disadvantaged populations or for skill upgrades. The most compelling programs found, which combined a number of relevant factors, are programs in the industry-sponsored classifications. These combine strong industry leadership, organization designed for longevity, strategy, and depth of training offerings in a specific

industry sector or region. Loosely called “skill alliances or regional skill alliances” we find they have much to offer as models for workforce development strategies in Indiana.

We are recommending that CICP and leaders in Central Indiana look carefully at New Century Careers in Pittsburgh. It is an industry-led, regional skill alliance that represents many of the features we find particularly compelling. However, despite our interest in this program we are not recommending wholesale adoption of a “model”; what we are recommending is the platform of a skills alliance that will support a framework specific to the opportunities in Central Indiana.

Our major findings and observations about the programs and organizations we reviewed are as follows.

First, across all types of programs, service providers are placing an increasing emphasis on the economic development roles of workforce education. This links training services more closely to the health and direction of local employment demand. Even in programs that focus on entry-level positions and disadvantaged populations, attention is paid to the strategic support education and training programs provide to local economies. Programs develop strategies that target high growth employment areas; some define training ladders for career development within targeted sectors. In Berkeley, California new programs are targeting bio-technology industries and information technologies to train dislocated workers and low-income people to enter these fields not only because there are jobs available but also because these industries have been targeted by the economic development community and local leaders as a key economic sector. In Springfield, Massachusetts the Hampden County Regional Employment Board is closely aligned with local job retention and business attraction efforts and coordinates training services for growing sectors such as information technology, communications service centers and healthcare.

Second, while the type of program has a large impact on the nature and extent of participation, all programs stress close coordination with employers and industry representatives. Employer involvement is now a standard operating procedure. Partnerships of employers and training organizations, for example, stress the involvement of small numbers of employers. In general, the providers own the program and define the operation and structure of the partnership. The context of many descriptions of partnerships with employers is in an environment of responsiveness and understanding of employer needs. Training providers take initiative in forming partnerships with employers and will recruit employers into them. A number of organizations representing the WIA systems (National Alliance of Business) and community colleges have published guides on building partnerships with employers. These stress ways to “listen” to employer needs for trained workers and getting to know partner companies as sites for placement of trained workers or for delivery of courses.

These features of employer involvement in education and training programs are particularly important and are fast becoming a universal feature of almost any program, especially those located in community colleges that recruit employers as participants in grant funded projects. However, as with any universal, there is variation in the extent of employer participation ranging from membership on a partnership advisory group in only a review and comment capacity to direct involvement in program design and governance of an organization. The latter is more often found in industry-sponsored programs.

Industry sponsored programs place the content, control and structure of delivery within the purview of the employer group. Leadership resides in the industry representatives and, where the groups have independent staff, staffing is responsible to the industry leadership. Providers in essence become the partners and in this case are in a subsidiary role to employer group decision-making.

Third, in partnership or industry-sponsored programs a key element is the definition of a strategic focus for the training. By strategic focus we mean more than a targeted industry sector and refer to the underlying rationale for developing a training service, the context in which programs are situated, and a strategy for delivery. When articulated clearly these features tend to attract the participation of employers either as partners or leaders. Both partnership programs and employer-sponsored programs stress a strategic rationale for the training program as well as a strategy for the content and delivery of services. Employers are more likely to devote time and resources to an organization or a program whose goals and objectives are clearly enough defined so they understand how it will meet their specific needs and contribute to larger goals of a shared strategy.

This rationale can reflect either a pre-existing analysis of a local economy or economic sector or are the result of a specific strategic analysis of the needs of a local industry and the workforce. New Century Careers, for example, was formed after metalworking firm managers in the Pittsburgh area expressed strong concerns about shortages of skilled workers and the need to supply both new skilled workers and train the existing workforce. Studies of the industry showing the strength of the metalworking sector and the paucity of available training resources galvanized support from broad sections of the business and political community and led to the New Century Careers organization.

In contrast, the Wisconsin Regional Training Partnership was initiated as the result of studies showing job loss in key sectors of manufacturing and potential impacts on communities of blue-collar workers. The analysis was taken up by trade unions, employers, and community groups, which led to the formation of the Partnership whose initial focus was training for existing manufacturing jobs and job retention.

Fourth, comprehensive delivery strategies are a distinguishing feature of industry-sponsored programs. Industry sponsored programs tend to focus on broader sets of job skills and career skills than other programs. The organizations they create develop educational pathways related to career skills and skill development around occupations. Perhaps this is because these programs tend to revolve around technical occupations in advanced technical fields such as biotech, electronics, information technology, health or metal trades, or in higher wages jobs specific technical skills. Perhaps it is because employers feel that an investment of time and energy should result in long term and comprehensive results; but whatever the reason these industry-sponsored programs tend to have a more comprehensive strategy toward the delivery of training than any other type of service we reviewed.

Closely related to delivery strategy is another major difference we found between partnership type programs and employer-sponsored programs. Industry led or industry sponsored programs will often coordinate more than one service provider. Partnership programs tend to have one provider organization—such as a community college-- as the operating entity and multiple employer partners. Industry sponsored programs will involve multiple provider partners who collaborate on service delivery or contribute

pieces of a more comprehensive set of services. When more than one provider is involved in services they are coordinated by the staff of the program. Providers are identified by a variety of means ranging from a qualification and bidding process to a preferred provider that is a key partner of a training collaboration. This kind of coordination gives the industry group considerable independence from relying on a single provider and gives considerable leverage over providers. Moreover, it lends creditability to the training effort when employers and workers learn that the ‘best’ provider has been selected to give training in a particular area.

Finally, this kind of training coordination lends itself to structuring career pathways and job ladders. The needs of the workforce in any given occupation can range from basic skills and literacy to advanced technical education. Few providers on their own have the complete capabilities or inclination to integrate all the required services. However, multiple providers who can be organized and scheduled can in fact deliver services as needed to one or more companies. The existence of an entity that can plan and coordinate different services that are related to a single strategy is a very powerful tool for employers.

Fifth, we found a large difference in the outlook toward longevity among programs. Sustainability and longevity of program operation are two of the most difficult areas for education and training providers. No one likes to suggest that a successful program will disappear after a year or two of operation but many do. We found, for example, a number of programs referenced as outstanding models that had gone out of existence at the end of their grant period. This has significant impact on the kinds of services programs are able to offer. Aside from the public infrastructure for federally funded training services, most training programs and projects have a limited time frame that usually depends on length of grants. Many grants—federal and private—are annual allocations or two year grants; these always have specific outcomes attached such as numbers of individuals trained, placed in jobs, employers served, or measures related to increases in job performance.

When these programs are designed, the curriculum development processes and organizational tasks (of recruiting partners or gaining employer involvement) are truncated because most grants require funds to be targeted to services and not to development, organization or “overhead”. Regardless of the intentions of the provider or partners grant guidelines tend to minimize building organizational depth that could help sustain a project beyond the end of the grant. Moreover, these projects offer training in components that can be completed within the timeframe of the grant funding in order to demonstrate that outcomes were achieved. The design for the grant funds, then, tends to discourage definition of career education programs in favor of more discretely defined courses or program that complete within a specific time period.

Sixth, we found that employer-sponsored programs tend to place more time in development. Organization and strategy are more articulated. New Century Careers in Pittsburgh, for example spent two years in development stages of defining mission, curricula, delivery strategies and organization. The Software Council in Boston spent well over a year defining an educational program to train analysts and entry-level programmers. Because the organization is more articulated, industry sponsored programs place a greater emphasis on sustaining the service and/or organization beyond a specific grant period.

Seventh, our findings concerning brokering are more difficult to render succinctly. Few programs we observed were “pure” training brokering; in fact no organization we found did only brokering for training. We found that brokering is very common within partnership programs and industry sponsored programs; these generally employ brokers as project staff for specific funded activities or as staff in organizations. The characteristics are generally the same—many work as representatives of specific institutions and services. State education and training programs, such as the One-stop system, staff are often account representatives and some of these exclusively work with employers to broker training and employment services. Brokers around the country play much the same roles that they do inside Indiana and the vocabulary of trust, relationship building and service is the same.

However, we found one important difference among brokers of various programs. Brokers in the industry sponsored programs tended to represent the “strategy” of the program more than brokers who represented broader organizational interests of selling services or those who worked in projects. In the latter case, the brokers were often responsible for simply meeting targets (numbers served, volume goals, etc.).

Categorical Programs

For decades, the federal government has developed and supported policies to provide job skills training to individuals. These have taken the form of various legislative titles such as CETA, JTPA, Titles II and III, and more recently the Workforce Investment Act. Over the years, each state has developed a statewide infrastructure to administer the allocation of training funds; to develop services according to local needs assessments, and to deliver employment and training services.

Regardless of the particular incarnation of the federal employment and training program, federal job training programs target disadvantaged individuals who may benefit from skill training and assistance to enter the labor market. The federal effort defined the types of people eligible for education and employment assistance. To receive funding, states were required to develop programs that demonstrated services to these populations. This system, still largely in place although experiencing considerable change, defines the essence of the categorical program approach to job training: the service is designed around the needs of an individual's characteristics and the barriers which prevent an individual from entering the labor market.

In the late 1990's, Congress reorganized its support for employment and training programs to create the Workforce Investment Act. After a period of implementation, the impact of the act's changes in service delivery and targets are taking effect. Effects can be seen in the creation of "one-stop" service centers that house and offer a variety of employment and employment-related services, more of a "customer focus", more intensive use of technology such as databases and computerized job listings, and rapidly growing use of on-line services. Louisiana has created a "virtual one-stop" online service center to offer services and create linkages between employers, career seekers and training providers. Minnesota has created the Internet System for Education and Employment Knowledge (ISEEK) that provides information in five main areas: career planning, education and training, class listings, employment listings, and business information. The information is interactive and cross-referenced. The system is now beginning to access distance learning through Minnesota's Virtual University.

Most notably the WIA institutionalized a trend begun earlier: it facilitated the WIB's governance, policy apparatus and programmatic operations to become much more involved in working directly with employers. Earlier, employers were considered as little more than sites for job placement; program goals. Services and program design were driven by population characteristics and funding requirements. Now, the emphasis is on involving employers in the definition of needs and tailoring training programs to specific industries where employment opportunities are plentiful or where restructuring demands retraining of the local workforce. The California Future Workforce Development Project uses state employment and training funds to target firms in the manufacturing heavy area around Fremont in electronics, metals, and plastics. The Corporation for Manufacturing Excellence (a part of the Manufacturing Extension Program) leads the project. This project conducts needs assessments, job profiles of occupations, and designs skill upgrade services. The goals are to both assist manufacturers in these industries currently and develop educational services for the future workforce. Again in California, a series of educational programs in Biotechnology have spread across the

state and revolve around a curricula tailored to local companies in life sciences and biotechnology.

In addition, some states have provided local WIBs and operating programs with technical assistance both as part of WIA implementation as well as a method of quality improvement for state workforce development services. North Carolina's Department of Commerce has formed the Workforce Development Institute that offers training and technical assistance to the staff of one-stop centers and workforce development programs. Its offerings are based on "best practices" and include leadership issue forums, coordination of implementation, clearing house for curriculum, training for direct-services staff and certification of workforce development professionals. North Carolina is now the only state that offers such a certifications program. In Florida, the state's implementation of WIA has centralized policy and program development at the state level in Workforce Florida, Inc. that is responsible for developing initiatives to target eligible populations and economic development needs. Program implementation is distributed across 200 one-stop career centers. Centralization helps assure coherence of public policies toward education and training as well as consistency of services in the one-stop centers.

In addition, in most states WIBs are encouraged to be entrepreneurial in developing new services and seeking additional funds to augment the allocation of federal and state dollars. In the Hampden County Regional Employment Board (Massachusetts) well over half the budget for training program operation comes from grants and contracts in addition to federal and state allocations. All grant-funded projects in the Hampden County Regional Employment Board concentrate on cluster-based training programs in manufacturing, information technology, and health care. The North Valley Job Training Consortium (NOVA) is a consortium of seven Silicon Valley cities; it reports a budget of \$12 million of which only \$2 million is WIA allocations. NOVA offers services in career upgrades and retraining.

WIB new programs often involve partnership with employers and focus on occupational training specific to the needs of their partners. One-stop centers now often employ account representatives who focus on specific companies or clusters to provide employment services and "broker" training that either companies need or for new hires. In the greater Hartford area, for example, all front line staff in CTWorks, of the Capital Region Workforce Development Board, are called account representatives who are versed in "business cycles, corporate cultures, wages and benefits, hiring practices and staffing needs of these key industries...in information technology, manufacturing and customer service industries."

Industry/Education Partnerships

Willy's Sutton's famous dictum that he robbed banks because that's where the money was could be easily applied to the rise of industry/education partnerships. Education and training organizations sought partnerships with employers because that's where jobs were. Publicly funded job training programs had come under criticism in the 1980's for not paying attention to the qualifications required by real jobs and real employers in designing job training programs. Similarly, community colleges and educational institutions received criticism that occupational courses did not meet the real world requirements of employers and delivery was poor. Soon colleges and training programs began seeking partners in the private sector to: advise them on curricula and job skills requirements, to participate in the design and delivery methods of training, and to provide both students (trainees) and job opportunities. *Public/private partnerships* became a common term within the employment and training community. Many public funding mechanisms for training programs require demonstration of specific commitments by private sector partners in the grant application.

Often, these partnerships work extremely well.² They provide training programs and training organizations with what they need (and more, for private sector partners are often contributors to the costs of operating programs) in terms of inputs and potential placements. Private sector partners often provide a rich depth of experience for students as well as educators and training providers. And, benefits flow to the participating companies as well. They gain better access to trained people with a skill set approved or defined by the partner employers.

These partnerships can become institutionalized and some are long-lived. For example, Austin, Texas created the Capital Area Training Foundation as a partnership between the City of Austin and the Greater Austin Chamber of Commerce. Now, the partnership is housed within the Greater Austin Chamber and serves as the education and workforce arm of the Chamber. The Foundation identified 13 economic clusters ranging from Automotive to Semiconductors and coordinates programs in workforce development in the clusters.

Employers often proved to be excellent partners by contributing substantial time and resources to programs and this enhanced the quality of services. In Berkeley, California a partnership in Biotechnology education and training linked Bayer Pharmaceuticals and twenty other pharmaceutical or biotech companies with area high schools, and local community colleges in programs to train new entrants into biotechnology firms. Bayer alone contributed \$1.4 million toward program start-up and implementation of Berkeley Biotechnology Education, Inc. The program primarily targets high school students and adults in community college programs. Since its inception, this model has spread across California and involves many companies, educational organizations, and agencies.

² A different reaction, about the same time, to the frustration by employers with education and training was the formation of corporate universities where a company or group of companies established a formal educational program, developed facilities, and hired faculty. Motorola University was one of the best known and most extensive of these. Though admired for their comprehensiveness and quality, these proved to be very expensive and many were unable to survive corporate restructuring and cost reductions. Some corporate universities, including Motorola, now rely on partnerships with educational providers for delivery and administration.

The structure of partnerships has several common features:

- Partnerships are often focused on a single employer or single industry: partnerships in biotechnology, electronics, healthcare, and high-end manufacturing are common.
- Partnerships tend to focus on industries in which employers are experiencing a labor shortage or anticipate shortages due to rapid sector growth. Healthcare partnerships help this industry meet shortages of semi-skilled and skilled technical personnel. For example, the Extended Care Career Ladder Initiative in eastern Massachusetts is a partnership between nursing homes and home-based care agencies with local community colleges and private training providers. This project, now beginning its third year, recruits new employees and trains incumbent workers in skills in long-term care. Biotechnology (laboratory training) programs were introduced to ease an anticipated shortage of personnel in a period of explosive growth in areas of high concentrations of these firms in the Northeast and West. In the late 1990's, a similar expected boom in Information Technology led to industry partnerships in many community colleges across the country's manufacturing regions.
- The governance of partnerships tends to rest with an educational provider or college. Grants or funding received to operate the partnership are generally received and administered by the provider; the role of the employer partners is thus often advisory only (i.e. not fiduciary and non-governmental).
- Staffs that are responsible for program operation are generally employed by other organizations (such as schools or providers) that control funds.
- Partnerships are often grant driven. Evidence of partnerships are often required by fund providers and last as long as funding is maintained. Once funding ceases, the partnership is terminated with the program or the partnership becomes inactive.
- Some partnerships have all the features above but are initiated by corporations, industry groups or trade associations. Here the industry partner will seek a partnership with an institution that is willing to collaborate and, often, who is willing to accept a well-delineated set of requirements for curricula and delivery. A partnership between what was NYNEX (now Verizon) and Springfield (Massachusetts) Technical Community College provided ongoing training to Verizon employees and new hires. The curricula for this program was defined by Verizon and delivered by the community college faculty; this project has lasted for over five years and now has its own freestanding building near the college campus. These types of partnerships tend to have substantially more involvement and responsibility on the part of the industry group although they are not administered or governed by the private partner. Moreover, these tend to live longer than specific grant periods because of the commitment of the private sector partners. Oklahoma City Community College, for example, has maintained training centers in partnership with AC Delco (certified technicians) and Bridgestone/Firestone (ASE certification and associates degrees) for many years.

There are many outstanding partnerships in the employment and training field among those operated by community colleges. Again, some of the programs in community

colleges and some agencies are institutionalized within the delivery structure of the colleges. In Kentucky, the Kentucky Community College and Technical College System Foundation is composed of education and business leaders who set policy and some funding priorities for workforce development within the college system. The community and technical college system maintains a host of employer educational services ranging from traditional contract training for incumbent workers to a mobile training unit sponsored by Kentucky Tech. Partnerships have been institutionalized in Kentucky's Bluegrass State Skills Corporation (BSSC) (patterned after the Bay State Skills Corporation of Massachusetts), a public/private corporation that provides funding and services in worker training for Kentucky companies. BSSC focuses on developing customized training for individual company partners.

Sometimes partnerships beget new partnerships. In 1981, North Carolina's legislature created the North Carolina Biotechnology Center as a private, non-profit economic development organization. While its basic purpose was to promote development of biotech within North Carolina, it soon developed an extensive education and training component built around partnerships with industry and education. The Center carries out an active educational program in K-12 settings promoting careers in biotech manufacturing. In response to continuing job growth in the state's biotech, the Center created a new partnership with industry, community colleges, and the Center to create a curriculum for adult education in biotech. The curriculum is designed for entry-level workers and can be delivered in partner company sites to new hires.

One of the oldest institutionalized training partnerships between employers and education in the country is the Center for Accelerated Technology in South Carolina. Begun in 1961 as a training center for new manufacturing firms growing in and moving into the state, it now is a customized training service vendor for companies across the state. Since its beginning, the Center has trained 200,000 workers and in 2001 provided courses and training to 7,600 people in 100 companies about half of which were new companies forming in the state. The Center not only provides customized training but can also grant degrees (associates) through Central Carolina Technical College.

Industry/Employer Sponsored Programs

Industry and employer (including labor) sponsored programs have a long history in the United States. Although no summary studies or histories of these programs has been done yet, their roots run deep in technical/occupational education ranging from nursing programs (carried out by hospitals) to industrial apprenticeships. Some of the longest lived such programs are apprenticeship training programs run by joint labor-management agreements and trade union-based apprenticeship programs largely, at this point, in the building trades.

Although not included within the scope of this study, in some ways apprenticeship programs capture the essence of the category of industry sponsored programs: *the industry or industry group controls nearly all aspects of the organization and delivery of training from the curricula, to eligibility of trainees, to the administration of the delivery.* Until the 1970's, many large manufacturing companies ran apprenticeship programs in skilled trades. Employees applied for and were accepted into four or five year training programs that offered both on-the-job training and a classroom-based curriculum. The Bureau of Apprenticeship Training, a federal office, regulated apprenticeship training at many companies and developed curriculum. This was close to a national system of technical credentials. Apprenticeship was a major pathway for many workers into well paid skilled careers. Often, these were highly regarded programs whose quality and effectiveness could hardly be equaled by any other technical education program. Nearly all of these industrial apprenticeship programs were dismantled in the late-1970's and early-1980's.

Now, within the more general occupational education and training field, industry sponsored programs are also rooted, like some partnership programs, in the gap between the perceived needs of an industry for trained people and the ability of an existing educational system to meet those needs. Unlike partnerships, which are operated and controlled by a provider or educational institution, the industry-sponsored program is privately or independently operated. In the early 1970's, for example, the National Tooling and Machining Association used Department of Labor funding to set up and operate about 20 machinist-training centers around the country. Often these were housed in their facilities, and the trade association owned (under federal guidelines) all the training equipment. The programs employed faculty and administrative personnel. Part of the impetus in forming these schools was an ongoing shortage of machinists and disappointment in occupational education at either vocational schools or community colleges. Only about five of these schools remain in operation today in the Los Angeles area, Buffalo, New York and Akron, Ohio.

Although their roots are deep, contemporary industry sponsored programs now take a variety of forms and represent a slow growing trend within the education and training field. In part, high startup and operating costs discourage a faster spread of this form of organization. However, where industry or regional industry sponsored programs have been successfully established there is clear evidence of their impact and effectiveness.

The features of these programs present compelling arguments that the effort involved in creating them and the costs of maintaining them are worthwhile in terms of impact and their ability to represent an industry's or a regional interest in developing a skilled work force. The capacity to focus on a *strategic vision*, interrelating the health of an industry

and workforce knowledge, is a hallmark of these programs. Secondly, these programs and organizations seem able to more directly express the needs of employers and the workforce -- for skills and services that are useful -- than their close counterparts in educational partnerships. The predominant voice of the industry and workforce and their ability to marshal resources from a variety of sources are other features, which distinguish industry-sponsored programs from other kinds of partnerships.

Industry sponsored programs today are diverse ranging from narrowly defined occupational programs for a company (as in corporate universities) to regional organizations supported by a large number of companies and others. They, however, like partnerships share some common features:

- Industry sponsored programs almost always have an explicit commitment by stakeholders toward a long-lived structure that creates and provides an infrastructure for delivering occupational skills training and other services.
- Goals are to develop and sustain an *organization*, almost always a not-for-profit, beyond a specific outcome or funding period.
- Today, industry-sponsored programs are often consortia representing a specific industry or companies within a region.
- Industry sponsored programs will receive and maintain control over funding. Partly because they do receive funding, the programs directly employ professional staff to administer programs, deliver services, and to represent the interests of the consortia members.
- Often, industry programs have a variety of revenue streams—including dues from memberships, foundation support, fee for services, and public grants for delivery of training.
- Curricula developed within these programs tend to be of longer duration and more technically oriented than that delivered in categorical programs or in many partnership programs.
- Industry sponsored programs are challenged by high operating costs and the need to generate operating income for institutional overhead as well as services.

In the following pages we present three detailed descriptions of industry sponsored programs. Two are from the Pittsburgh, Pennsylvania area and one is from Milwaukee, Wisconsin. The two from Pittsburgh are related, the Pittsburgh Technology Council and New Century Careers. The Council helped support the formation of new Century Careers. We believe these three organizations are illustrative of important elements of industry-sponsored programs.

Three Industry-Sponsored Workforce Development Programs

1. Pittsburgh Technology Council

The significance of the Pittsburgh Technology Council (formerly Pittsburgh *High* Technology Council) is its strong focus on technology in manufacturing industries. It began life as an advocate group for southwestern Pennsylvania's technology industry. In the early 1980's as Pittsburgh's traditional large-scale steel and heavy industries closed or left, Pittsburgh experienced growth in high technology fields. Viewed as a potential renaissance in the economy and a salvation from rust-belt decline, the boom in technology manufacturing and development firms underlay the formation of the Pittsburgh High Technology Council.

The Council exists as a trade association that has over the last twenty years broadened its scope to represent leading trends in the manufacturing and technology development fields. As a trade association, the Council continuously monitors federal, state, and local policies that impact the pro-growth strategies of its members and the region. Since 1983, the Pittsburgh Technology Council has presented itself as the **principal point of connection** for companies from four primary clusters of the technology industry that are represented by a critical mass of businesses in southwestern Pennsylvania:

- Information Technology
- Biomedical Technology
- Advanced Manufacturing/Materials
- Environmental Technology

It helps the region's technology companies grow by offering:

- opportunities for meeting business contacts;
- guidance on business development;
- exclusive discounts on business products and services;
- workforce placement and development initiatives;
- knowledge-sharing forums, educational programming, and entrepreneur mentoring programs;
- *TEQ* and *PA Manufacturer* magazines, covering regional business developments, trends, and best practices;
- industry advocacy in state and federal government; and
- promotional opportunities.

Council membership currently includes 1,500 companies, making it the largest trade association of its kind in the nation. Membership also includes companies that provide professional products and services that support the growth of technology companies. Members who span from entrepreneurs launching new ideas to established leaders in technology-driven businesses turn to the Council for essential business connections.

Workforce Education and Development

As a trade organization, the Council does not provide direct training services and instead coordinates and develops services among other providers. The Council and another manufacturing service organization, Catalyst Connection (formerly the Southwestern Pennsylvania Industrial Resource Center and a NIST Manufacturing Extension Program affiliate) facilitate collaboration between the manufacturing and technology industry clusters and the region's education and workforce development systems. The Catalyst Connection provides direct links to training providers and assessment/brokering services. This cooperation around workforce services developed over a period of years. The Council seeks to ensure that the region continues to develop, attract and retain a workforce equipped to succeed in technology-intensive work environments.

Through their joint workforce education and development efforts the Council and Catalyst Connection promote workforce-related policies, broker and provide a variety of services, and assist members with the identification and development of the skilled talent they seek today and the preparation of a quality workforce.

Strategies for achieving these results include:

- Engaging manufacturing and technology industry leadership in education and workforce development issues and programs;
- Council staff broker and provide services that connect manufacturing and technology companies with schools, post secondary institutions, government agencies and community organizations;
- Promoting and advocating policies that sustain effective workforce education and development practices.

The Council and partner organizations lead a number of initiatives focused on connecting schools and industries, developing curriculum for technologies such as information technology and linking employers with workforce development programs. These initiatives include:

- Manufacturing Pathway Initiative: a manufacturing education program for high school juniors and seniors, which includes articulation into post-secondary education technology programs. This project is a good illustration of the capabilities of industry led programs to both participate in initiatives and to develop the cooperation of multiple resources. Taken from the Council's own description of the project, the organizational coordination and collection of numerous organizations participating in the effort is impressive:

“MPI program participants include:

- *Businesses throughout the region interested in providing mentors and hosting interns for this classroom training and hands-on work experience.*
- *Educators in participating schools who assist in recruiting and selecting students for the program.*
- *Students (at least 16 years of age) in the second semester of their sophomore year.*
- *Parents who take active roles in career planning with their teenagers and who provide transportation as required.*
- *Program representatives at the Pittsburgh Technology Council and Catalyst Connection who provide guidance and assistance in all aspects of the program.*
- *Partnership for Regional Innovation in Manufacturing Education (PRIME), a four-college system (Butler Community College, Community College of Allegheny County, Robert Morris University and Westmoreland County Community College) that delivers innovative manufacturing education and career development and provides many of the instructors for the classroom training portion of the program.*
- *Local partners including SMC Business Councils, Team PA, Workforce Investment Boards, Youth Councils, and various community-based organizations, economic development organizations and local chambers of commerce.*
- *The Education Development Center, Inc., Ford PAS and the Manufacturing Industries Careers Alliance (MICA) sponsored by the National Association of Manufacturers (NAM).*

MPI Today

Piloted in 2000-2001 at one Westmoreland County site, the program was an immediate success. Students rated the program an invaluable experience and 100 percent of surveyed employer participants stated that their companies derived benefits by hosting student interns and that they would be interested in participating in the program again. In 2002, the MPI expanded into Allegheny, Armstrong, Butler, Fayette, Indiana and Washington counties.

Funding support for the MPI has been provided by the Claude Worthington Benedum Foundation, the Heinz Endowments, the Pennsylvania Department of Education, PRIME, Ford PAS, Hamill Manufacturing, Mine Safety Appliances, SMC Business Councils, Sony Corporation, Westmoreland County Community College Career Prep, Westmoreland-Fayette Workforce Investment Board and Workforce Connections.”

- **Technology Literacy Initiative:** a set of teacher information and training modules to integrate technologies and manufacturing technologies into school curricula.
- **Information Technology Cluster and Life Sciences Cluster Workforce Development:** a cluster organizational development initiative to define training needs, create collaboration between the information technology industry and the biomedical industries and education providers, and develop an industry-led agenda for workforce development strategies.
- **Career Literacy:** an effort to link careers in manufacturing to students in middle schools and high schools. By providing relevant regional information, teens will have the opportunity to assess a variety of possible careers, determine the competencies they need to achieve their goal, and identify the secondary and post-secondary education opportunities through which they might attain the required knowledge and skills.

The Council also sponsors projects to develop and publish analyses in skill assessments, analyses of skill preparation in high schools, evaluations of local school-to-work programs, and surveys of employers. The motivations for these studies and publications are twofold: first, to stimulate and enrich the dialogue between business and education sectors; and second, to provide leaders in business, education, and economic and workforce development with baseline data against which to measure the region's progress toward preparing young adults for technology intensive employment.

The Council's roles in workforce development as initiator, coordinator, and participator illustrate the potential impact an industry organization may have without directly offering or controlling training itself. By using its own staff resources to organize its membership to participate and by helping the industry articulate a strategy for workforce development (as in the cluster development projects), the Council can help direct the provision of training services through higher education and training providers.

2. Wisconsin Regional Training Partnership -- Milwaukee

The Wisconsin Regional Training Partnership (WRTP) is a highly visible, multi-union, multi-employer sectoral effort to link employers, workers and unions in the joint mission of improving worker training and preserving jobs in the Greater Milwaukee manufacturing industries. The organization began with a single focus on manufacturing and metal-working industries but has now expanded to include programs in construction, hospitality, healthcare, information technology, and transportation. The WRTP employs a staff of twelve that includes researchers, brokers, and industry-training specialists.

Roots of the formation of the WRTP lay in the response to massive losses of manufacturing jobs in the Milwaukee area in the 1980's. Almost one-third of the jobs in manufacturing firms disappeared in this period as large industrial firms in machinery and equipment closed or downsized. Many of the jobs lost were in heavily unionized sectors and labor saw its membership not only decline in numbers, but also suffer serious declines in the standard of living.

The Wisconsin State AFL-CIO, which had operated dislocated worker programs for some years, began to development workplace education centers. These programs

helped upgrade the skills of workers and involved community colleges in the delivery of assessments and training services. In conjunction with research conducted by the Center on Wisconsin Strategy (COWS), a research institute housed at the University of Wisconsin-Madison, on demand for skilled workers in the region, momentum began to develop for new approaches to assisting firms to find skilled workers and to offer workers skills that could lead to good incomes in competitive companies.

Discussions among employers, the State AFL-CIO, a Governors Commission on a Quality Workforce, and COWS, began a 17 month process of negotiation and finding a common ground for a workforce development training consortium. Nearly a year and a half later the basic principals of a coalition of labor, employers, and the public sector formed the nucleus of WRTP in 1992. WRTP was formed as a regional skills alliance whose target market was defined as manufacturing within a regionally defined labor market.

In addition to the importance of a regional labor market, and larger unionized firms as the foundation for the organization, the Partnership founders identified three other key design considerations:

- The full inclusion of union organizations as equal partners in the organization.
- Open organizational and program architecture to facilitate easy participation of organizations and companies at different levels and in heterogeneous environments. In other words, a modular and gradual approach was adopted to facilitate as wide a participant base as possible.
- Finally, the organizational process demonstrated the need for staff and resource support in the initial phases of organization. The process of organization building was too time-consuming, complicated and too involved to leave to volunteers or other organizations. It was necessary to have capacity to develop the involvement of key stakeholders and to follow through on organizational tasks.³

The charter for the organization committed WRTP to pursue a workforce development strategy that would involve business and labor in:

- Jointly determined human resource practices;
- Increased investment in workplace education;
- Improved re-employment assistance in layoffs;
- School to work initiatives;
- Benchmarking to best practices in workforce training.

³ These points are developed by Eric Parker and Joel Rogers in *WRTP: Lessons for National Policy*, Institute for Industrial Relations; Berkeley, California.

A year after the organizational charter was agreed upon, WRTP adopted a strategy for services. In addition to creating the infrastructure to support training programs the strategy focused on:

- (1) a resource center to assist members in workplace transformation and workforce development;
- (2) manufacturing skill certificates for incumbent and future workforce training programs;
- (3) employment-linked training programs for unemployed adults and a youth apprenticeship program for high school students;
- (4) interestingly, as a way to support smaller manufacturing firms, WRTP also agreed to form a partnership approach to manufacturing extension services for smaller companies that may require more than training.

Services determined by the strategy included joint (labor/management) design of incumbent worker training programs based on a modular approach; use of skill standards and objective skill assessments to define a skill needs and a performance based curriculum; supplier chain involvement and supplier upgrading to assist supplier firms in upgrading operations and workforce skills, and programs for the “future workforce” of youth and unemployed adults who need training and opportunities to obtain good jobs.

Since it was founded in 1991 as a not-for-profit corporation, WRTP has grown to include 100 member firms, 60,000 workers and 42 local and 14 international unions. Covering all manufacturing activities, it has been able to achieve an economy of scale by bringing partners together and by merging activities within the firms. An initial focus on incumbent workers opened the doors for other opportunities, including school-to-work programming for youths, welfare-to-work help for unemployed workers and modernization for firms.

WRTP pursues the following goals in its program operations:

- To retain and expand high-quality employment in regional industry;
- To build an effective, collaborative relationship between unions and employers;
- To upgrade the skills of workers and firms;
- To promote intra-union and intra-firm collaborations;
- To work with public institutions and agencies in support of skill development and quality employment opportunities.

Activities are now divided into three broad areas--Workplace Education, Modernization and the Future Workforce. WRTP serves as an intermediary that links WRTP employers and unions to public funding for both workforce development and modernization. It also brings employers and unions together to allow them to learn from each other.

- Workplace Education: WRTP assists in the development of on-site or multi-site learning centers, the provision of upgrade training, public funding and peer mentoring advising systems.
- Modernization: WRTP provides consulting and technical assistance to labor and management on technological and work organization change. Partnership task forces focus on strategic training initiatives, high performance workplaces and new compensation systems.
- Future Workforce: The Future Workforce Working Group addresses the training needs of adult new entrants and youths making the transition from school to work and apprenticeship programs.

The achievements of WRTP are considerable. Its services have grown steadily over time and it has established a longevity that few other employment and training organizations can claim. Achievements include:

- By 1999, privately negotiated employer funding had supplanted the public monies used to start several worker education centers.
- WRTP has generated more than \$21 million in private investments, with more than 6,000 people receiving training each year.
- The initial focus on incumbent workers needs eased concerns over public programs opening union and firm involvement in programs, such as school-to-work and welfare-to-work programs.
- WRTP improved access to good jobs for low-income workers. In 1997-1999 more than 400 workers were placed through WRTP, obtaining full benefits and more than doubling their annual income to \$22,500.
- WRTP is one of the largest networks of its kind in the nation covering more than 60,000 workers, 100 firms and 42 local and 14 international unions. It has inspired additional sectoral organizing efforts in Wisconsin and other regions of the country.
- WRTP increased visibility and leadership for the Wisconsin AFL-CIO on state economic policy.

WRTP is unique among sector focused business-based programs in its explicit and very strong focus on community development. The partnership's participants are primarily people of color with an average household income of \$12,000. They face multiple barriers to entry into the workforce; for example, two out of three do not have a high school diploma and one out of three have a language difficulty. WRTP continues to expand its capacity and can now place 500 community residents a year in jobs with an average starting wage of \$10 per hour, plus full benefits. The participants typically increase their annual earnings by 165% to more than \$22,000 their first year on the job. Their employment retention rate is nearly 75%.

The WRTP model of industry-sponsored training overcomes the widespread indifference of employers and unions to workforce development. The traditional service delivery model ignores employers and unions until participants engage in a job search at the end of the training process. WRTP identifies job openings at member companies on the front end of the process, and works with funding agencies, training providers, and community partners to recruit and develop qualified candidates to fill them. Employers and unions typically offer employment to participants before they even enroll in the program on the condition that they successfully complete the required training. WRTP offers members a comprehensive menu of industry services to improve their recruitment, retention, and advancement of qualified workers. WRTP's strong commitment to job quality enables WRTP to leverage resources for training and related services, to subcontract training to technical colleges and other providers, and to attract viable candidates from a growing number of community partners.

The future for WRTP seems to involve diversification and expansion. It is addressing other sectors of the regional economy and developing partnerships with other agencies to develop new workforce training services for communities and special populations. A new project for the Partnership is a joint program with the YWCA of Greater Milwaukee to develop a new Workforce Training Center for all Job Centers, TANF Agencies, WIA other community partners in Milwaukee County. The Center will bring together the leading workforce development contractor and human service provider in the area to expand hands-on career exploration, pre-employment training, apprenticeship preparation, career advancement, and placement services for community residents.

3. New Century Careers – Pittsburgh

Large amounts of the following description of New Century Careers are excerpted from an evaluation and analyses of workforce development efforts in Pittsburgh that have been supported by private foundations. The edited excerpts are used by permission of the author, Michael Kane, Mt. Auburn Associates, Somerville, Massachusetts. Any errors as the result of editing or introduction of additional materials from other sources are the responsibility of the Indiana Manufacturing Education and Training Initiative.

New Century Careers (NCC) is a private, nonprofit organization that is a focal point of greater Pittsburgh's manufacturing workforce development services. It operates a comprehensive system of marketing, recruitment, screening, training, placement, and post-placement services that is designed to meet manufacturers' needs for skilled and semi-skilled workers. Its core operating budget for 2002 will be approximately \$1.2 million. NCC has significant industry representation on its board, and it works in conjunction with several industry associations. NCC works in partnership with a number of vocational-technical schools and community colleges to provide different levels of manufacturing-related training.

Background. The origins of New Century Careers illustrate the time and investment required to build an industry-led workforce development organization; in addition, the formation process illustrates the strength of a sectoral focus and strategy in developing organizational depth and support from manufacturing. Numerous organizations, industry groups, individual companies, and funding partners were involved in the genesis of New Century Careers. Although the history is intertwined with a host of organizations it is

worth reviewing to see the intersection of private and public interests in a skilled workforce.

NCC is the culmination of a number of different training projects and research efforts, undertaken principally by the Institute for Economic Transformation (IET), over the last three years. Collectively, these training and research efforts laid the foundation for and became the building blocks of New Century Careers. Although there was no preconceived notion that New Century Careers would emerge in its current form, it was believed that a process of doing research, collecting data, engaging manufacturers, and setting up new training programs would eventually lead to a more comprehensive manufacturing-based workforce development program and organization.

The beginnings of NCC were rooted in a manufacturing network that was organized by IET in the mid-1990s. What started out as an informal network took on a more formalized shape under the aegis of the Community Manufacturing Initiative, funded through the Pittsburgh Partnership for Neighborhood Development. IET's involvement with the informal and formal manufacturing networks provided insights into what small- and medium-sized manufacturers needed in order to be economically viable and competitive. Skilled and semi-skilled workers were very high on the list. And, quantifying and clarifying this need, as well as building a relationship with the region's manufacturers, was seen as a first critical step that was required before a strategy could be put in place to address the need.

The next phase of NCC was undertaken through the support of The Heinz Endowments. The Endowments support included surveys of manufacturers to find out about their workforce needs, finding successful strategies to reach potential trainees in low-income communities, building connections with local schools and guidance counselors to promote careers in manufacturing, and creating a "human capital marketplace" that matches people in the communities with available jobs in the manufacturing sector.

This market intelligence and engagement with industry then set the stage for virtually all of the other components of an emerging regional dialogue and manufacturing workforce development program overseen by New Century Careers. This work is the reason why the manufacturing sector is the most advanced in the region's workforce efforts. Over a dozen grants over three years were given to different organizations to put the building blocks in place, grants that were joined by several other fund providers. These grants were made to the Society for Manufacturing Engineers (curriculum development), the Steel Center Area Vocational School (entry level metal working training programs), IET, the Manufacturing Institute, and the Mon Valley Education Consortium (research, network support, and training). The work of these organizations supported the design and emergence of Manufacturing 2000 (a manufacturing training design and curriculum) and New Century Careers.

These organizing, research, and training activities—prior to the formation of NCC--revealed a key finding that was essential for the development of the Manufacturing Cluster—that in spite of the decline of the steel industry in the region, small- and medium-sized manufacturers in southwestern Pennsylvania were growing, expanding their facilities, and desperately in need of entry-level trained workers. In effect, the change in manufacturing processes and technologies, combined with a diverse but constantly increasing customer base among these firms, was creating an extraordinary demand for new, skilled workers. Furthermore, the activities showed that the existing

network of training providers was incapable of responding to the demand. Vocational schools had almost given up on manufacturing and their facilities and equipment were evidence of this. Moreover, the community colleges in the region were unaware of the change in manufacturing and the severity of the need for workers.

Since Steel Center (a regional vocational/technical school) had been conducting entry-level training programs on a small scale with considerable success, the decision was made by the principals to at least begin to address the workforce needs of the small companies by combining the key elements of each organization: practical and hands-on training of Steel Center, the organizing and research of IET, and the market research and marketing approaches of a manufacturing group World-class Industrial Network (WIN), which was joined by Elliott Marketing (WIN/Elliott Marketing). The Heinz Endowments was approached to fund a pilot program in 1997 that would allow the principals to test out a new strategy to entry-level manufacturing training. Heinz provided the funding; the program was called Manufacturing 2000 (M2K); and the building blocks of a comprehensive system were initiated.

Even though the pilot was limited in scope, the insights gained from the program were profound:

- The intense involvement of manufacturing firms in program and curriculum design was essential to the success of future programs, and critical to getting the commitment from companies to hire graduates of a training program. Consequently, a formal industry oversight committee or board would have to be put in place.
- Labor market data that could quantify and characterize the demand for workers, as close to real-time as possible, would be necessary to building a flexible and responsive training program.
- A marketing and recruitment system would have to be created to ensure that non-traditional populations (e.g., women, Latinos, African-Americans, etc.) were strategically and effectively targeted for the program.
- A market response system would be critically important to ensure that all customer inquiries were followed through on—this ensured that the program could be improved upon and modified based on customer input, and it would also help to increase the conversion rate from initial student inquiry to program completion.
- The right “offer” to potential trainees would be important to the success of the new system’s ability to attract and maintain a pool of people — the “offer” required that a training program be of a reasonable length, be offered at no cost, focused on the right blend of technical skills, and directed toward a job and career that paid a competitive wage.

New Century Careers was formally created in 1999 to provide an infrastructure that could sustain and integrate these threads and projects under a single organizational umbrella. The New Century Careers Program has five fundamental goals:

1. create a comprehensive cluster-based workforce development program that responds to the needs of small- and medium-sized manufacturers for skilled and semi-skilled workers, and the need of poor and low-income residents in the region for good-paying jobs;
2. create the organizational capacity to operate this new program and support the research needs of the program;
3. develop institutionalized mechanisms for manufacturers to be involved in all key components of the program;
4. bring the program to a level of scale that would have a substantive impact on manufacturers' need for workers, and residents' need for a good-paying job, with a target of 3,600 people trained a year by 2004; and
5. utilize the experience of the cluster-based manufacturing workforce program as a prototype for workforce development programs in other clusters in the region.

In the first year, the program began with one training class in one county, one training provider at one training site, 15 individuals trained, and 17 industry representatives involved in the program. Currently, there are 20 training classes being offered, by nine training providers at nine sites, in four counties, with between 150 and 200 trainees each year, and the involvement of representatives from 115 different manufacturing firms.

In the last three years, some of the key building blocks needed for a comprehensive workforce program directed to the manufacturing cluster have been put in place. These building blocks include the following:

- Initial research and survey work that quantified the demand and described the occupational needs for the manufacturing training was completed and this kind of research is now ongoing. Also, the information is being distributed to training providers and key workforce program and policymakers.
- An image and marketing campaign was developed to change the perception of parents, young people in the region, and school guidance counselors about manufacturing, from a dirty-low-tech industry to a more accurate picture of a sophisticated and technology-driven industry. The image and marketing activities are ongoing.
- Manufacturing 2000, which started out as a small entry-level training in machining, has been institutionalized among a number of different training providers, and expanded to include training for welders and electronic assembler jobs and careers. Career-path training for incumbent workers in manufacturing is being undertaken by NCC's new Advanced Manufacturing Education program.

- A comprehensive system that recruits, orients, screens, tests, places, and provides post-placement support to trainees has been developed.
- A data-driven system is in place that gives Manufacturing 2000, New Century Careers, and other training providers the ability to track participants in their program through every phase of the program, locate when and where participants drop out of the system, and identify the reasons why people decided to enroll and/or drop out. In effect, this system is a “mapping” of the customer as he/she makes his/her way through the program. Currently, the system has information on roughly 5,000 individuals.
- Industry involvement has been institutionalized through the industry leader membership on the boards of both Manufacturing 2000 and New Century Careers, and through partnerships with industry associations like the National Tooling and Machining Association.
- The research and technical support capacity for the entire program has been provided and continues to be provided by the IET and IET’s Center for Competitiveness Workforce Development.

Between 1999 and 2001, approximately 1,500 people applied for the manufacturing training program, and 535 people were actually enrolled (this ratio is relatively high because program staff do an effective job of screening out people who are clearly not qualified for the program, and those who have only a marginal interest in it). Of the 535 people who enrolled in the program, 502 graduated—a program completion rate of 85 percent.

Through the spring of 2001, the time frame for which data are available, the total placement rate of program graduates was approximately 75 percent. However, with the current recession and a tight labor market, the placement rate is likely to go down (as a result of this, NCC is taking advantage of a new DOL grant and is placing some Manufacturing 2000 graduates in the more advanced Manufacturing 2000+ program—the advanced machinist training will make program graduates more attractive to employers and could also increase their starting wage rates).

The cost to recruit, train, and place a Manufacturing 2000 program participant was around \$12,000 per participant when the program first started in 1999. Now that NCC has considerably more experience and capacity, the cost is approximately \$8,000 per participant. The longer-term goal is to get the figure down to \$5,000–\$6,000 per participant.

Manufacturing 2000 program outcomes compare rather favorably with the outcomes of two sectoral training initiatives that were recently evaluated—the Annie E. Casey Foundation’s Jobs Initiative (evaluated by Abt Associates), and the Charles Stewart Mott Foundation’s ten sectoral workforce projects (evaluated by Public/Private Ventures). Making effective comparisons of the total participant training and placement costs among a variety of training programs is quite difficult because programs often use different variables to determine costs. Nonetheless, the cost to recruit, train, and place a participant in the Manufacturing 2000 program is somewhat high. The standard total

program costs tend to be in the \$5,000–\$6,000 range, and Manufacturing 2000's costs are around \$8,000 per participant at the moment. If the program does, in fact, reduce the cost to the \$5,000–\$6,000 range, as it intends to do in the long-term, it will be more in line with other training programs.

NCC was created to respond to two very important dynamics occurring in the regional economy—a serious need that small- and medium-sized manufacturers have for skilled and semi-skilled workers, and a need that residents in low-income communities have for decent-paying jobs. And, the program has achieved a moderate level of success in responding to these dual-customer needs. Moreover, the program goes well beyond simply providing training—it is a fully-functioning and comprehensive workforce development program that includes all key elements from marketing, to recruitment, to entry-level skills training, and advanced training for incumbent workers. All of the appropriate programmatic elements are evident.

The organizational infrastructure and capacity are also in place. IET and CCWD provide research and strategic support, staff from NCC and Manufacturing 2000 oversee and administer the program, several training providers at different sites in the region offer training in the region, and industry organizations like the National Tooling and Machining Association and the Society of Manufacturing Engineers provide direct involvement from employers.

The program's demand-driven character is a key strength. Surveys of companies and extensive interviews and discussions with individual employers provide the critical input for the design of training programs. Also, changes in program content and approach are made when employers perceive the need to modify the classes or the way they are taught, or when there is a need to shift from entry-level training for new employees to advanced training for incumbent workers. The extensive database that NCC and Manufacturing 2000 have on customers (employers and residents) provides a wealth of information that NCC uses to continually upgrade and improve its programs.

The program can and will serve as a model of how other cluster-based approaches to workforce development can be undertaken. Although the process for building NCC was not linear, it had all of the right steps of labor market research, marketing and promotion, building organizational capacity, involving industry in a central way, offering training on a modest scale to begin and then broadening the geographical scope and increasing the number of training providers and sites, and staying abreast of customer and market changes through the use of a carefully-designed database.

In spite of the program's achievements, challenges remain. One challenge is to bring the program to a scale where it can fundamentally meet the workforce needs of the region's small- and medium-sized manufacturing community. This will take more time and more resources. When the program is able to produce hundreds of appropriately skilled workers within its current training cycles, it will have the kind of impact industry and area residents need.

Using the cluster-based approach to workforce development that NCC and Manufacturing 2000 have followed is clearly important to the other clusters in the region, but it will take considerable resources, coordination, a clearly-defined strategy, and leadership from employers and the workforce organizational infrastructure in order to

bring the other efforts to the level of effectiveness and organizational and programmatic maturity that NCC has achieved.

System Implications. New Century Careers (NCC) and its predecessors have had major impact on the workforce development infrastructure in the Pittsburgh area and offer a number of implications for other program designs and regional skill alliances. The organization has achieved substantial success in:

- Creating a more employer driven system. NCC conducts extensive and timely demand research and has developed strong mechanisms for employer involvement.
- Creating more effective workforce and education linkages. NCC has fostered partnerships between employers and education and training providers by involving the latter in program design and service delivery. It has also developed a strong, data-driven system of trainee recruitment and screening.
- Reaching scale. While the program has yet to reach the scale necessary to address industry-wide needs (its target is 3,600 graduates per year by 2004), it has achieved considerable scale to date and appears to have the elements in place to enable it to eventually achieve an industry-wide impact. In addition, NCC has served as a model for other emerging sectoral training initiatives.

The program has also been very successful in obtaining other funds for training programs and for sustaining the organizational services that NCC provides. State Customized Job Training funds have been secured for several training programs, and a recent federal Department of Labor grant for \$1.2 million provides support for advanced training for incumbent workers. Other state economic development and federal workforce dollars are either already in hand or potentially available. Also, the program has been quite successful in having companies that hire graduates pay a portion of the tuition costs.

Companies that have either been involved in M2K/NCC or hired graduates of the training programs feel quite positive about the training and the graduates. A woman who graduated from the program said:

"I needed a career and I needed it fast. At 56, I figured I had time for a whole other career and Manufacturing 2000 offered me an interesting alternative. I earn a good salary, raises, and bonuses, and have paid benefits, with the added package of flexible hours."

Between 1999 and 2001, approximately one of every three people who expressed interest in the program enrolled in it, and the course completion rate ranged between 85 and 90 percent (depending on the training site). Without such an intensive, hands-on system that tracks students throughout the entire program, it is unlikely that these ratios would have been achieved.

Using Labor Market Information to Enhance Effectiveness

The labor market research that is undertaken by IET and NCC, as well as the “data-mining” that Elliott Marketing undertakes, have proven to be extremely valuable tools for the program. The labor market research keeps the training programs flexible and responsive to shifts in the demand for workers, so that programs can be cut back or held up at any given point in time. And, the data-mining helps the program to understand the economic, racial, social, and location characteristics of all potential trainees, making the marketing and recruitment segments of the program more reliable, cost-effective, and efficient.

Program Assessment

The investments in NCC are part of a more comprehensive set of activities that a local coalition of foundations has supported around workforce issues in the manufacturing sector. Together, these activities exemplify many of the achievements that the Endowments have hoped for in its human capital strategy. In spite of the many accomplishments of the Heinz investment in Manufacturing 2000, several challenges remain.

Attracting students to its programs: Early in the program, there was a goal of recruiting, training, and placing 3,600 students by the year 2004. Even coming close to this goal would no doubt bring the program to a significant level of scale. However, given the downturn in the economy, and perhaps an overly optimistic sense of the program’s ability to recruit and train people in the region, this goal does not look achievable. While the number of training graduates and placements is quite substantial, the program’s goal for the grant period was to graduate 240 students. Consequently, it fell somewhat short of its target.

Recruiting nontraditional students: Although there were no numerical goals for recruiting, training, and placing non-traditional students, the program experienced difficulty. For example, the program has not succeeded in attracting as many women as it had initially hoped, although NCC expects to receive a grant from DOL that focuses on women in manufacturing. Also, the goal of training and recruiting a modest number of Latinos into the program has met with mixed results. While El Centro has provided a stable organizational presence in the Latino community, efforts to attract, train, and place Latinos, particularly through the outreach effort in Puerto Rico, have not met expectations. Similarly, the effort to recruit and train Eastern Europeans was quite unsuccessful.

Finally, the fund providers’ role in creating this program was very significant if not essential. Support for the initial training program was essential to putting the building blocks in place and giving the program its direction. In effect, the funding brought the principals together, allowed them the opportunity to test a concept, a design, and a strategic approach, and to determine if this model is really workable. Fortunately, this investment of “risk-capital” turned out to be a sound investment.